



Department
for Environment
Food & Rural Affairs

Proposed Fisheries Management Plan for Channel Demersal Non-Quota Species

Strategic Environmental Assessment: Environmental Report

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Non-technical Summary

The draft Channel Demersal Non-Quota Species Fisheries Management Plan (FMP) has been prepared to meet the requirements of the Fisheries Act 2020. It sets out the policies and proposed measures Defra will use to manage demersal non-quota species fishing activity in the Channel, so stocks are harvested within sustainable levels. Alongside these measures, the draft Channel Demersal Non-Quota Species 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 report assesses the likely significant effects of the draft Channel Demersal Non-Quota Species FMP on these issues.

The assessment was conducted against a baseline that primarily used existing evidence on the state of the marine environment set out in [The updated UK Marine Strategy Part 1](#) published in 2019. Additional sources of evidence were used to establish the current status of environment in relation to issues, such as climatic factors, not covered by the UK Marine Strategy (UK MS). The historical impact of fishing activity on the marine environment has been considered part of the baseline.

This report sets out those plans, programmes and environmental protection objectives, both international and domestic that Defra consider relevant to the draft Channel Demersal Non-Quota Species FMP.

This report considers and acknowledges the existing environmental effects of fishing for demersal non-quota species using towed gear and nets in the Channel on those issues scoped into this assessment, in relation to Marine Protected Areas (MPAs), the UK MS descriptors and the wider environment. The potential positive and negative environmental effects of the draft Channel Demersal Non-Quota Species FMP's policies and proposed measures alone and in-combination have also been assessed.

The Strategic Environmental Assessment (SEA) has concluded the beyond the direct impact on targeted stocks, the fishery has an impact on the wider marine environment primarily through seabed disturbance (from mobile demersal gears) and bycatch of unwanted / protected species (mainly from drift and fixed nets). Actions have been proposed to investigate these impacts and use this evidence to develop robust mitigation strategies. The contribution of demersal non-quota fishing to

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climate change related issues and cultural heritage through structural damage for example, was also identified as a potential impact.

The draft Channel Demersal Non-Quota Species FMP has considered these impacts and sets out proposals to monitor, and where required, introduce mitigation to address these impacts.

The environmental effects of implementing the Channel Demersal Non-Quota Species FMP policies and measures will be monitored to identify unforeseen adverse effects at an early stage, ensuring appropriate remedial action can be undertaken.

This assessment recommends the draft Channel Demersal Non-Quota Species FMP should consider the following additional points.

- Future iterations of the Channel Demersal Non-Quota Species FMP should consider how they can develop the cultural heritage of each fishery and how fisheries management can contribute to reducing potential negative interactions with marine heritage assets.
- Future iterations of the Channel Demersal Non-Quota Species FMP should consider how fisheries management can contribute to reducing potential negative interactions with submerged prehistoric landscapes or seascapes.
- The draft Channel Demersal Non-Quota Species FMP would benefit from providing more specific detail on how the FMP will interact with Marine Plans. Noting how the FMP could positively or negatively interact with this programme, would improve the in-combination assessment.

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, an FMP must specify the relevant authority; stock or stocks, type of fishing and geographical area to which the plan relates; the status of the stocks; policies and actions to harvest within sustainable limits; and the indicators to be used to monitor the effectiveness of the plan.

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.

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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 an FMP may be extended to consider wider fisheries management issues related to environmental, social or economic matters. How FMPs consider wider fisheries management issues will be determined at the individual FMP level, appropriate to the stock(s), fishery and geographic area within the remit of the FMP.

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

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

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

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

Delivering Sustainable Management of Fisheries and FMPs

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

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

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

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

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

FMPs will contribute to achieving 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 demersal non-quota species fisheries in the Channel. The following species are in scope of the Channel demersal NQS FMP:

Bony fish

- Bib (*Trisopterus luscus*)
- Brill (*Scophthalmus rhombus*)
- Lemon sole (*Microstomus kitt*)
- Turbot (*Scophthalmus maximus*)
- John dory (*Zeus faber*)

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- Red mullet (*Mullus surmuletus*)
- Grey gurnard (*Eutrigla gurnardus*)
- Red gurnard (*Chelidonichthys cuculus*)
- Tub gurnard (*Chelidonichthys lucerna*)

Sharks, skates, and rays

- Lesser spotted dogfish (*Scyliorhinus canicular*)
- Starry smoothhound (*Mustelus asterias*)
- Common smoothhound (*Mustelus mustelus*)

Cephalopods

- Common cuttlefish (*Sepia officinalis*)
- Elegant cuttlefish (*Sepia elegans*)
- Common octopus (*Octopus vulgaris*)
- Curled octopus (*Eledone cirrhosa*)
- Veined squid / Long-finned squid (*Loligo forbesii*)
- European Common squid (*Alloteuthis subulata*)
- Common squid / European squid (*Loligo vulgaris*)

The fisheries covered by this FMP occur in ICES areas 7d-e (English Channel). The draft Channel Demersal Non-Quota Species FMP applies to English waters², covering inshore and offshore areas where fishing activity for demersal non-quota species takes place.

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](#).

Draft Channel Demersal Non-Quota Species FMP Goals

The FMP vision is that demersal non-quota species (NQS) fisheries in the English Channel will be managed to achieve environmental, social, and economic sustainability, for the benefit of coastal communities and wider society.

The FMP vision will be delivered using the following principles:

- Align with current and planned legislation and government policy such as:
 - Fisheries Objectives in the Fisheries Act, 2020; specifically focusing on the precautionary and sustainability objectives
 - UK environmental targets for the marine environment such as the 25 Year Environment Plan, Environmental Improvement Plan and UK Marine Strategy
 - UK/EU Trade and Cooperation Agreement including management of shared stocks through multi-year strategies
 - Other Fisheries Management Plans where there are shared stocks or interactions with gear/species
- Adopt an evidence-based approach, with management measures implemented using the best available evidence. The plan will also identify evidence gaps and detail how these will be addressed. In light of new or changing evidence, and where appropriate, the plan will be reviewed and revised.
- Apply the precautionary approach where insufficient evidence is available. Management may be applied on a risk-based approach and will be proportionate to the risk.
- Adopt a holistic approach, considering unintended consequences and work towards adopting an ecosystem-based management approach. This includes understanding the impact of fishing on the wider marine ecosystem, environment, and its contribution to climate change, as well as the impact of climate change and environmental events on fishing and fish stocks, including how to support the industry through changes.
- Deliver the plan collaboratively, transparently, objectively and in an iterative approach over time.

To further support the delivery of the vision of the FMP, goals based around the key themes of evidence, social & economic impacts, and sustainable fisheries have been developed. These are presented in Table 1. The FMP proposes precautionary management measures in the short term to protect the stocks that are potentially not being fished sustainably at present whilst more evidence is gathered. These are presented in Table 2.

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Table 1. The draft Channel Demersal Non-Quota Species FMP goals, subgoals and actions.

Action	Time frame	Approach
Theme: Sustainable Fisheries, Goal: Deliver effective management of demersal non-quota species in the English Channel		
Scope how to define the precautionary approach in the Channel NQS mixed fisheries. How it will be initiated, implemented and assessed, in line with data collection and management needs.	Short term (1-2 years)	A Channel demersal NQS methods paper scoping how to define the precautionary approach, how it is applied, mechanisms and triggers for initiation, undertaking research and data collection, and actions for implementation.
Following Harvest Strategy Standard guidance, progress toward sustainability (MSY or suitable proxy) or implement precautionary management for stocks of particular concern.	Medium term (3-5 years)/Long term (6-10 years)	Early precautionary management for stocks of concern, consider initiating data collection to support assessment of the stock. Sufficient data supports the implementation of MSY or a suitable proxy for priority stocks.
For all stocks that are data poor and consequentially unable to assessed for stock status, at MSY or suitable proxy, seek to improve datasets to allow for assessment.	Medium term (3-5 years)/Long term (6-10 years)	<p>When sufficient data supports the implementation of MSY or a suitable proxy for data poor stocks.</p> <p>When data quality is sufficient to share and contribute to ICES assessments of these stocks.</p> <p>Implement effort data into fishing records, such as logbooks, u10 catch recording, to create a better data set and assess effort on stocks. Implement changes to recording on sales notes to 'grade' fish accurately to collect size data for fish</p>

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Action	Time frame	Approach
		landed. Number of fish sold at what grade will give an insight into composition of the catch by age. Use existing market data and Cefas data to determine the current problem.
Deliver a mixed and multi-species management approach in the Channel demersal NQS fishery.	Medium term (3-5 years)/Long term (6-10 years)	Approach to mixed species management in the Channel identified and tested. Approach to mixed species management applied and assessed.
Seek to ensure stocks are managed sustainably. Pursue the establishment of MSY, suitable proxy or other sustainability assessment for these stocks. Seek to manage catches below MSY or suitable acceptable proxy for a mixed fishery for all stocks in scope of the FMP.	Medium term (3-5 years)/Long term (6-10 years)	When sufficient data supports the implementation of MSY or a suitable proxy for all Channel demersal NQS stocks. Following advice of the Harvest Strategy Standard, all stocks will be managed below MSY or suitable proxy, under precautionary management, or managed sustainably.
<p>Theme: Sustainable Fisheries, Goal: Deliver wider biological sustainability, Subgoal: Where possible identify and mitigate pressures on the Channel demersal NQS</p>		
Seek to scope how to define key interactions between all Channel fisheries and non-quota stocks.	Short term (1-2 years)	Consider research into quota fisheries to model interactions from catching and fisher behaviours on Channel demersal NQS.

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Action	Time frame	Approach
Better understand and define the targeting behaviour of the fleet.	Short term (1-2 years)	Consider research to identify and capture fisher targeting patterns.
Manage key interactions to minimise adverse impacts on Channel demersal NQS stocks.	Medium term (3-5 years)/Long term (6-10 years)	Key interactions understood and managed effectively to minimise unintended consequences.
Identify and afford appropriate protections for essential fish habitats important to key life stages of Channel demersal NQS.	Medium term (3-5 years)/Long term (6-10 years)	Consider research to identify essential fish habitats for NQS. Protections afforded where required.
Understand the impact and map species sensitivities to climate change on Channel demersal NQS.	Medium term (3-5 years)/Long term (6-10 years)	Undertake research into the impact of climate change on Channel demersal NQS. Adapt the fishery management strategy to align with species sensitivities.
Identify where climate change mitigation and adaptation measures can be implemented to reduce impacts on the fishery.	Medium term (3-5 years)/Long term (6-10 years)	Consider research to identify opportunities to implement climate change mitigation and adaptation measures. Climate adaptation and mitigation are aligned with work being delivered externally / nationally.

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Action	Time frame	Approach
Better understand the impact of anthropogenic non-fishing pressures on Channel demersal NQS stocks.	Medium term (3-5 years)/Long term (6-10 years)	Consider research to look at Channel demersal NQS lens of broader anthropogenic impacts.
<p>Theme: Sustainable Fisheries, Goal: Deliver wider biological sustainability, Subgoal: Understand and reduce where needed the impact of Channel demersal NQS fisheries on the wider marine environment</p>		
Investigate key issues in current unwanted and protected species bycatch within the fishery.	Short term (1-2 years)	Consider research to identify and reduce unwanted/protected species bycatch.
Better understand the impact of fishing gear interactions with the marine environment in the Channel demersal NQS fishery.	Medium term (3-5 years)/Long term (6-10 years)	Research considered to map and define the demersal gear and benthos interactions.
Establish data collection requirements to monitor and track key Channel demersal NQS fishing impacts on unwanted / protected species bycatch.	Medium term (3-5 years)/Long term (6-10 years)	Data collection programme tracking bycatch and target species considered.

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Action	Time frame	Approach
Theme: Social and Economic, Goal: Better understand and optimise social and economic benefits		
Identify who is reliant upon NQS fisheries/ impacted by them.	Short term (1-2 years)	Groups within the Channel that are reliant upon Channel demersal NQS fisheries will have been identified and research undertaken to understand who is benefitting and how.
Identify social and economic data on current direct and indirect benefits derived from Channel demersal NQS fisheries on coastal communities.	Short term (1-2 years)	The direct social and economic benefits of the Channel demersal NQS fishery for the groups identified will be understood. Management is targeted appropriately so that these benefits are maintained and optimised.
Identify social and economic indicators used to monitor social and economic impacts and how this information will be gathered.	Short term (1-2 years)	A full set of monitoring indicators that can be used to assess the effectiveness of the social and economic goals of the plan are established.
Where data is not currently available, seek to identify new/ novel ways to collect social and economic data.	Medium term (3-5 years)/Long term (6-10 years)	Evidence gaps identified and work is being done to close them.
Seek to understand if there are opportunities to optimise direct and indirect benefits from Channel demersal NQS fisheries.	Medium term (3-5 years)/Long	Benefits mapped and understood, mechanisms to optimise have been put in place.

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Action	Time frame	Approach
	term (6-10 years)	
<p>Theme: Social and Economic, Goal: Develop on partnership working to build capacity for the industry to be able to input into matters affecting NQS fisheries management</p>		
Formally establish a Channel demersal NQS management group to allow for continued engagement in ongoing management of NQS fisheries.	Short term (1-2 years)	There will be a formally established Channel NQS working group that will be recognised as the key group for matters related to the review/revision of the FMP.
<p>Theme: Evidence Goal: Better understand the wider non-quota species evidence needs</p>		
Building on the Evidence Statement, establish what evidence is required to meet the wider goals of the FMP, as well as any further policy/legislative objectives. Identify what evidence is currently available through a robust and systematic process. Understand the data channels that currently source this evidence.	Short term (1-2 years)	Evidence strategy will be published within 2 years of the publication of the first iteration of the FMP. It will cover all (fisheries, environmental, ecological, and social and economic) data requirements.
Identify what evidence gaps exist based on current evidence baselines and evidence	Short term (1-2 years)	In drafting the evidence strategy and highlighting evidence needs through the Evidence Statement, evidence gaps can

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Action	Time frame	Approach
needs. Prioritise these on species/fleet basis.		be identified and assessed. These will be listed and prioritised as part of the evidence review report.
Theme: Evidence, Goal: Develop the non-quota species evidence base		
Identify how current data channels can be adapted or improved to meet evidence gaps.	Short term (1-2 years)	As part of the evidence review report, a section identifying and evaluating current data channels will be produced.
Where necessary, establish new data collection channels to close evidence gaps. Investigate opportunities to gather non-traditional or novel sources of data to complement this, including using new technologies.	Medium term (3-5 years)/Long term (6-10 years)	Evidence gaps unable to be fulfilled by existing data are addressed by new evidence/data. Where possible, this will be collected using new technologies, and/or through novel, non-traditional methods (Species prioritisation may mean expedited delivery).
Establish methods to consolidate new data with existing data in a singular platform. Then, make data available to multiple users, increasing utility, robustness, transparency and value.	Medium term (3-5 years)/Long term (6-10 years)	The approach to managing data will be consistent with data protection regulation, it will aim to be transparent and accessible for use by agreed partners and stakeholders.

Draft Channel Demersal Non-Quota Species FMP Measures

Table 2. Draft Channel Demersal Non-Quota Species FMP measures.

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Topic	Measure	Purpose	Timeframe
Flyseining	Propose introducing a 221-kW restriction in ICES areas 7d and 7e in UK waters for 0-12 nm for flyseiners.	To reduce flyseining pressure within 12 nm. Precautionary measure given concerns surrounding impacts to the stock.	Short-term
	Consider a gross tonnage limitation in ICES areas 7d and 7e for flyseiners.	To limit large capacity flyseining pressure within the English Channel. Precautionary measure given concerns surrounding impacts to the stock.	Short-term
	Propose that all flyseiners use 100 mm mesh as standard.	To reduce fishing pressure on juvenile individuals within the English Channel, there is a need to explore compatibility with MCRS for priority species.	Short-term
	Subject to outcome of consultation on REM, propose introducing early adopter scheme that could become mandatory in time.	To support the collection of robust evidence and data on channel demersal NQS species and fill key evidence gaps. Also, to monitor the impact of the proposed measures.	Medium-long term
	Further consider consulting with details related to	To regulate flyseine fishing in the English Channel. Potential to limit impact of flyseiners on the flyseine species.	Medium-long term

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Topic	Measure	Purpose	Timeframe
	introducing a permitting scheme for flyseiners.		
	Consider time spent in area restrictions.	To reduce flyseining pressure through reducing fishing time within the English Channel. Precautionary measure given concerns surrounding impacts to the stock.	Medium-long term
	Consider seasonal closure for flyseiners.	To reduce flyseining pressure within the English Channel, there is a need to explore whether seasonal limits or time in area limits prove more effective to the stocks.	Medium-long term
	Consider an overall engine size limitation for flyseiners.	To limit top end flyseining pressure within the English Channel.	Medium-long term
	Further consider potential rope length and diameter restrictions for flyseiners.	To regulate catching potential for these vessels and limit fishing impacts within the English Channel.	Medium-long term
Minimum conservation reference size (MCRS)	Consider introducing MCRS for lemon sole (25 cm), turbot (30 cm), brill (30 cm), common cuttlefish (23 cm).	To protect pre-spawn juveniles and promote recruitment population. Precautionary measure given concerns surrounding stock health. Alignment with IFCA restrictions	Short-term

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Topic	Measure	Purpose	Timeframe
	Consider introducing MCRS for flyseine species – red gurnard, red mullet, bib etc.	while FMP establishes appropriate MCRS for the stock and fishery. Compatibility with gear mesh size is required for successful implementation and will be explored further.	Medium-long term
Towed gears	Consider gathering evidence on potential viable options for towed gear management measures in ICES areas 7d and 7e, in particular in relation to 0-12nm, that would enhance stock sustainability and deliver social and economic benefits to the whole sector.	To reduce fishing pressure on juvenile individuals within the English Channel, there is a need to explore compatibility with MCRS for priority species.	Medium-long term
Cuttlefish	Consider introducing codes of practice on cuttlefish trap handling.	To promote recruitment of juvenile cuttlefish and increase egg survival.	Short- medium term
	Investigate the benefits of underwater structures to benefit egg survival.		
	Consider temporary seasonal closures for trawlers.	To provide protection for cuttlefish within the English Channel – seasonal closures	Short-term

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Topic	Measure	Purpose	Timeframe
		could focus on providing protection to the pre-spawn juvenile population or essential habitats for cuttlefish eggs.	
Octopus	Propose to monitor catches, create a research plan and gather evidence.	To assess a future potential octopus fishery and impacts on other fisheries from population growth.	Short-term
Recreational	Support the recreational sector to consider introducing voluntary guidelines and education on how recreational fishers can fish more sustainably. This could include voluntary MCRS information, guidance on methods and equipment to reduce damage to fish, as well as information on how anglers can handle and release fish to reduce post-release mortality.	To support evidence gathering, engagement and partnership working with the recreational sector. To encourage the introduction of good practices to improve sustainability of the stocks.	Short-medium term

The draft Channel Demersal Non-Quota Species FMP’s proposed precautionary management measures, goals and actions may change following the public consultation on the Channel Demersal Non-Quota Species FMP.

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 definition in regulation 2 of the SEA Regulations 2004.

Defra consider that Regulation 3(2)(a) of the SEA Regulations 2004 applies to the draft Channel Demersal Non-Quota Species 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 draft Channel Demersal Non-Quota Species FMP may have a likely significant effect (either positive or negative) on a European site or a European offshore marine site and they are not directly connected with or necessary to the management of such sites.

The screening exercise used [Defra's Magic Map Application](#) to identify whether the geographical scope of the FMP overlaps with any European sites or European offshore marine sites. Table 3, page 35 of [The updated UK Marine Strategy Part 1](#) sets out the pressures on the marine environment resulting from anthropogenic activity, which includes fishing. This information was used to identify whether fishing activity for demersal non-quota species in the Channel has the potential to impact these sites and interest features. For example, use of bottom towed gear has the potential to result in the extraction of, or mortality/injury to, wild species and cause physical disturbance of benthic habitats.

The screening also judged that the proposed policies in the draft Channel Demersal Non-Quota Species FMP have the potential to affect multiple European marine sites 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).

Scoping

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)

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requires that when deciding on the scope and level of detail of the information in the Environmental Report, the responsible authority must seek the views of the Consultation Bodies.

A Scoping Report identifying the scope and level of detail of the assessment of the draft Channel Demersal Non-Quota Species FMP was provided to the following Consultation Bodies:

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

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

Regulation 12(3) of the SEA Regulations 2004 requires that the Environmental Report shall include the information referred to in [Schedule 2](#), in so far as it is reasonably required. Table 3 sets out which section of this report corresponds to the relevant paragraphs of Schedule 2.

Table 3. Sections of this report and the corresponding paragraph of Schedule 2 of the SEA Regulations 2004.

Section(s) of this Report	Corresponding Paragraph in Schedule 2
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.
Sections: 4 and 7	Paragraph 2: The relevant aspects of the current state of the environment and the likely evolution thereof without implementation of the plan or programme.
Section: 3	Paragraph 3: The environmental characteristics of areas likely to be significantly affected.
Section: 3	Paragraph 4: Any existing environmental problems which are relevant to the plan or programme including those relating to any areas of a particular environmental importance, [such as a European

Section(s) of this Report	Corresponding Paragraph in Schedule 2
	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 subparagraphs (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.

Section(s) of this Report	Corresponding Paragraph in Schedule 2
Non-technical summary	Paragraph 10: A non-technical summary of the information provided under paragraphs 1 to 9.

Scope of the Assessment

Schedule 2 paragraph 6 to the SEA Regulations 2004 lists the issues that must be considered for an assessment of likely significant effect in relation to the proposed 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 propose 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 emissions, 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 draft Channel Demersal Non-Quota Species FMP.

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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 draft FMP. Table 4 provides the justification behind this decision. Additional rationale behind why sub-sections were considered is set out 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 the 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 mobile demersal gear fishing on seabed formations. Where specific impacts are known they will also be considered.

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Table 4 shows the results of the scoping exercise on the draft Channel Demersal Non-Quota Species FMP.

Table 4. Results of the scoping exercise to determine those environmental issues likely to be significantly affected by the draft Channel Demersal Non-Quota Species FMP and thus scoped into the SEA. 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](#).

Issue	Potential to cause impacts	Justification
Biodiversity, fauna and flora (UK MS descriptors D1, D3, D4, D6)	Yes	<p>Fishing activity for demersal non-quota species has the potential to result in physical disturbance to the seabed and the extraction of, or mortality of/injury to/disturbance to, both target and non-target wild species.</p> <p>These issues are within the scope of this SEA.</p>
Population (Human)	No	<p>The proposed FMP is not likely to result in significant increases or decreases in human population numbers, or changes to in-migration or out-migration.</p> <p>This issue is beyond the scope of this SEA.</p>
Human health	No	<p>The proposed FMP would not result in any significant human health issues. Whilst fishing remains a dangerous vocation and the proposed FMP will promote safe operations, the regulation of the safety of fishing operations falls elsewhere.</p> <p>This issue is beyond the scope of this SEA.</p>

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Issue	Potential to cause impacts	Justification
Geology and sediments (soil) (UK MS descriptor D6)	Yes	Fishing activity for demersal non-quota species 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)	Yes	The proposed 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.
Air	No	The proposed 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.
Climatic factors	Yes	The proposed 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.
Material assets	No	The proposed FMP will not impact material assets related to; ports and shipping; fisheries and aquaculture;

Issue	Potential to cause impacts	Justification
		<p>leisure or recreation; tourism; marine manufacturing; defence; aggregate extraction; energy generation and infrastructure development; seabed assets.</p> <p>This issue is beyond the scope of this SEA.</p>
Cultural heritage	Yes	<p>Fishing activity for demersal non-quota species has the potential to interact with marine heritage assets. While the proposed 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.</p> <p>This issue is within the scope of this SEA.</p>
Landscape Seascape	Yes	<p>Demersal non-quota species fishing, through physical disturbance of the seabed, has the potential to affect seascape features.</p> <p>This issue is within the scope of this SEA.</p>

Assessment Methodology

This SEA reflects the geographical scope (section 1) and fishing activity covered by the proposed FMP. It considers the goals of the draft Channel Demersal Non-Quota Species FMP and the measures (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).

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It assessed the nature and extent of likely effects of the draft Channel Demersal Non-Quota Species FMP (including its policies and measures) on those environmental issues scoped into the assessment and where applicable their associated UK MS descriptors identified in Table 4.

Our assessment focuses on assessing how the policies and actions in the draft Channel Demersal Non-Quota Species FMP are likely to give rise to both significant positive and negative environmental effects. This assessment does not consider all the risks and impacts of fishing activity per se. Such assessments have already been conducted as part of the UK's obligations under legislation relating to a) Marine Protected Areas (MPAs), which includes Defra's Revised Approach to fisheries management programme (inside 6nm) and the MMO's ongoing Fishery Assessment programme (outside 6nm) in England; and b) the wider marine environment (UK MS). It is the draft Channel Demersal Non-Quota Species FMP as a plan of management that has been assessed, rather than the fishing activities themselves.

Nevertheless, this ER acknowledges the likely significant effects associated with fishing activity being managed through the draft Channel Demersal Non-Quota Species FMP and sets out in broad terms how the proposed FMP will seek to avoid, reduce, or at least mitigate significant negative effects.

During the development of the draft Channel Demersal Non-Quota Species 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 proposed FMP, and how the proposed policies and actions could change the baseline.

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

This assessment acknowledges the draft Channel Demersal Non-Quota Species FMP sets out objectives to develop the evidence base around the Channel demersal fisheries. Our assessment used the best available evidence at the present time to reach a judgement on the environmental effects of the draft Channel Demersal Non-Quota Species 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 (Table 4). It is likely that without the proposed FMP, those issues which are contributing to the current state of the marine environment will likely continue to have an influence. The proposed FMP seeks to promote the management of the fisheries in a more coherent and coordinated manner that considers wider environmental issues. The FMP therefore has the potential to improve the current state of environment set out below, both where no improvement has been observed, and where positive trends have been identified. The SEA has been conducted against the environmental baseline set out in these sources of existing information. Section 6 and 7 considers how the implementation of the FMP's proposed policies and actions could change the baseline.

Biodiversity, Flora, Fauna and Geodiversity³ (Geology and sediments)⁴

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).

3 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.

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

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

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

D1 and D4 – Seals

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

Grey seal populations and productivity 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.

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.

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

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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.

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 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.

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 allows understanding of how changes at one trophic level can impact those above and below it.

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

Water Quality

D10 – [Marine Litter](#)

Marine litter, including from fishing activities, is a significant pressure on marine ecosystems and water quality. The UK has not yet achieved its aim of GES for litter. Beach litter levels in the Celtic Seas have remained largely stable since the assessment in 2012, whilst beach litter levels in the Greater North Sea have slightly

increased. Waste fishing material is a component of beach litter. Both floating litter and seafloor litter remain an issue, with plastic the predominant material. Achieving GES for marine litter requires improved waste management practices, the reduction of lost or discarded fishing gear and increased awareness and monitoring of the issue.

D11 – Underwater noise

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

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

Climatic factors

Climate change impacts are not part of the UK MS, therefore evidence from other sources was 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)⁵, or 0.66% of the UK's domestic transport emissions (122 Mt CO₂e)⁶. 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).

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

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

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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 CO_{2e}) of the total carbon emissions at sea each year across the UK's fishing fleets. Drift and fixed net fisheries (237 vessels) produced approximately <2% (13kt CO_{2e}), and beam trawls (73 vessels) produced approximately 13% (107kt CO_{2e}). 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 are known as blue carbon habitats. Currently there is no comprehensive assessment of the impact of fishing using mobile demersal gear 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 demersal non-quota stocks and fisheries

Most species in the scope of the Channel Demersal Non-Quota Species FMP are expected to move northward in response to climate change, with the exception of squid, red mullet and bib which may move south. For most of the FMP species warmer UK seas may become a more suitable environment, but for red gurnard, grey gurnard and veined squid warmer waters may become less suitable. Climate change poses potential knock-on effects for the mixed demersal fishery, however given the highly adaptable nature of wild capture fisheries, warmer seas may open up new opportunities for fishers and for inclusion of these species in the FMP management.

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.

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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 occur⁷:

- 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 the interaction with findspots⁸ 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

⁷ Information derived from [Fishing and the Historic Environment, page 44](#).

⁸ 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).

underwater environment), with cultural, historical and archaeological links with each other.

The 'value' of many of the UK's seascapes is reflected in the range of designations which relate in whole or in part to the scenic character of a particular area, (e.g. Area of Outstanding Beauty (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 designation⁹.

The seascape constitutes of a suite of different characteristics that include natural factors, cultural and social factors and cultural associations. Under these character headings exists a number of subheadings that include Geology, Seabed, Tides and Coastal processes (natural factors), Surface water features, Sunken and Buried Features and Use of Coast and Sea (cultural and social factors) Media, People and Writers (cultural associations)¹⁰.

Fishing and commercial fishing vessels are considered as seascape features and activities. Fishing ports and related fishing infrastructure are considered as landscape features¹¹. Fishing therefore is an important component of the overall landscape and seascape character.

Fishing activity using demersal towed gear has been identified as causing damage to submerged peaty deposits known as moorlog¹². 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 Channel Non-Quota Species Fishing

UK vessel landings data for 2016-2021 show that demersal non-quota species in the Channel are caught using a range of gears. Over 90% of the landings come from the use of mobile demersal gear, (for example beam trawls, otter trawls and demersal

9 [UK Offshore Energy Strategic Environmental Assessment - scoping \(publishing.service.gov.uk\)](#)

10 Figure 1, Page 9. [seascape-character-assessment.pdf \(publishing.service.gov.uk\)](#)

11 Figure 2, Page 10. [seascape-character-assessment.pdf \(publishing.service.gov.uk\)](#)

12 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.

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seines), with the remaining landings from drift and fixed nets, or pots and traps and, to a lesser extent, dredgers.

Fishing using mobile demersal fishing gear is considered to be the main driver of physical disturbance of the seabed. It has been identified as having 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, although only making up a small proportion of the demersal non-quota fishery in the Channel, 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 draft Channel Demersal Non-Quota Species FMP focuses on achieving the sustainable harvesting of stocks. This focus seeks to reduce the environmental risks linked to over-fishing these stocks, thereby giving net positive benefit to environmental status.

As described in Section 2, this Environmental Report focuses on assessing how the policies, measures and actions in the Channel Demersal Non-Quota Species FMP are likely to give rise to both significant positive and negative environmental effects. This assessment does not consider all the risks and impacts of fishing activity per se. Such assessments have already been conducted as part of the UK's obligations under legislation relating to a) Marine Protected Areas (MPAs), which includes Defra's Revised Approach to fisheries management programme (inside 6nm) and the MMO's ongoing Fishery Assessment programme (outside 6nm); and b) the wider marine environment (UK MS). It is the policies, measures and actions of the draft Channel Demersal Non-Quota Species FMP as a plan of management that has been assessed, rather than the fishing activities themselves.

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

Biodiversity, Flora, Fauna and Geodiversity, Water quality

Environmental Effects Associated with MPAs

Advice provided to Defra by our Statutory Nature Conservation Bodies (SNCBs)¹³ gives more detail on the pressures¹⁴ fishing for demersal non-quota species in the Channel could have on the marine environment in relation to MPAs.

In England the assessments of the impact of fishing activities inside MPAs are undertaken by the IFCAs within 6nm and the MMO outside 6nm. Figure 1 shows the distribution of English MPAs. Stakeholders have worked/will work closely with regulators to help develop measures to mitigate impacts within inshore and offshore MPAs. Appropriate management is or will be in place to ensure any fishing within MPAs is compatible with the MPA's conservation objectives. Current management measures already in place are detailed on the [MMO](#) and [Association of IFCAs](#) websites.

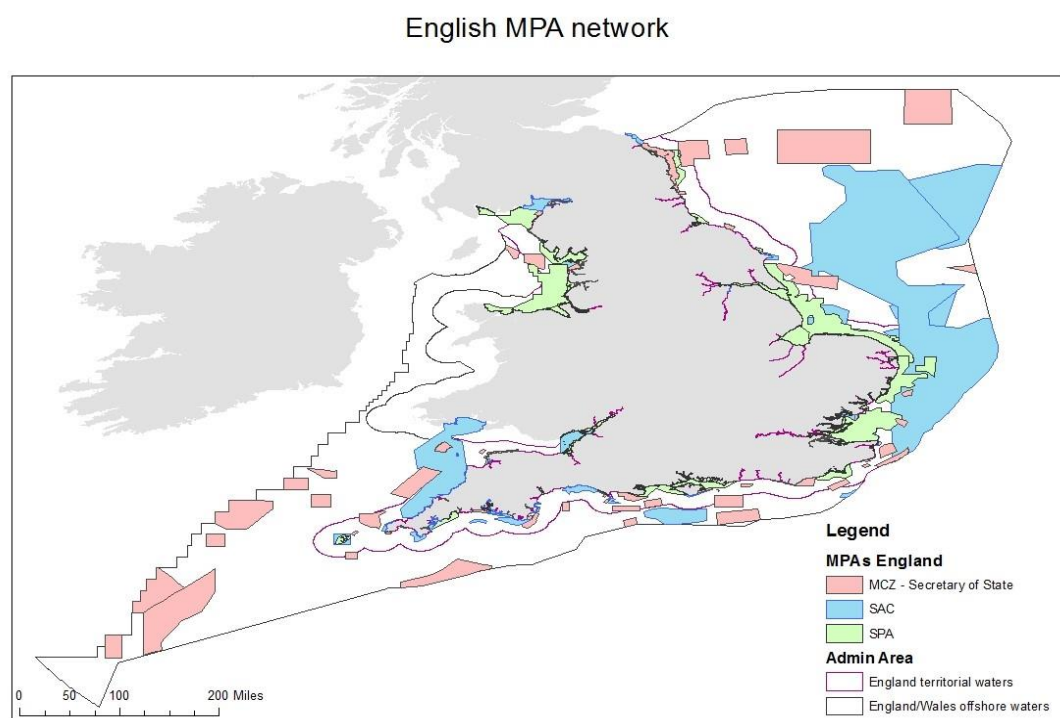


Figure 1. England's MPA network

13 Natural England, the Joint Nature Conservation Committee (JNCC) and Natural Resources Wales

14A pressure is the mechanism through which an activity has an effect on any part of the ecosystem. The nature of the pressure is determined by activity type, intensity and duration. For more information, see [MarLIN - The Marine Life Information Network - Marine Evidence based Sensitivity Assessment \(MarESA\)](#)

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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, (such as noise), or when the feature of an MPA is mobile and travels outside the site.

Advice provided to Defra by the Statutory Nature conservation Bodies (SNCBs) on the impact of fishing activity outside the boundary of MPAs on MPA features concluded that:

- The demersal non-quota species fishery in the Channel that uses bottom towed gear risks impacting shad species that are protected within 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 mammals), may occur on occasion, 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 demersal non-quota species in the Channel 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 Channel Demersal non-quota fishery may be contributing to bycatch in nets which is of a scale that could be having an 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 Statutory Nature Conservation Bodies (SNCBs) gives more detail on how the key issues¹⁵ identified by [The updated UK Marine Strategy Part 1](#), apply to the fishing of demersal non-quota species in the Channel and their likely impact on achieving Good Environmental Status (GES) ([Appendix A](#)).

The following potential issues and their associated risk level¹⁶ have been identified for the fishing of demersal non-quota species in the Channel on UK MS descriptors:

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 targets¹⁷.

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

¹⁵ **Key issues:** impact of the removal of targeted species on the status of fish stocks; benthic disturbance related pressures associated with towed demersal gear; impact of the removal of targeted fish stocks on other species / wider environment; impact of bycatch (bird / mammal / fish) on biodiversity, food webs or stocks; fishing related sources contributing to marine litter; noise from pingers / acoustic deterrents contributing to marine noise.

¹⁶ **Draft GES rapid risk assessment categories:** Low risk means some risk does exist, but the impact may not be of a scale to impact upon GES descriptors. Moderate risk means there is clear link between the fishing activity and the GES indicator, but other activities also significantly contribute to the current indicator status, where high-risk activity only makes up a small proportion of the fishery. High risk means the link between fishing activity within the FMP and the failure to meet the GES indicator is recognised. 'Risk unclear' is used where the situation is complex, and more work is required to understand the true nature of risk.

¹⁷ See <https://moat.cefas.co.uk/biodiversity-food-webs-and-marine-protected-areas/benthic-habitats/physical-damage/> but note these figures will be revised soon as a fresh assessment by JNCC has been undertaken.

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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 demersal non-quota species stocks in the channel 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 demersal non-quota fisheries in the Channel 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 demersal non-quota species in the Channel 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 overall emissions in the UK, decarbonising the fleet and moving towards net zero will help reduce the contribution of fisheries activities to climate change.

No conclusive evidence is currently available on the impact of fishing activity for demersal non-quota species in the Channel on organic carbon stocks. However, the impact of towed demersal gear on blue carbon is of concern. Improved recording of the intensity of fishing using this gear 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 to conserve them for their enjoyment by future generations.

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Benthic towed 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 trawling 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 region¹⁸.

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

4. Relevant Plans, Programmes and Environmental Protection Objectives

The draft Channel Demersal Non-Quota Species 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.

¹⁸ Coles, Bryony J. "Doggerland: a speculative survey." Proceedings of the Prehistoric Society. Vol. 64. Cambridge University Press, 1998.

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The draft Channel Demersal Non-Quota Species 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 consider relevant to the implementation of the draft Channel Demersal Non-Quota Species FMP.

International

The draft Channel Demersal Non-Quota Species 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](#)
- [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 \(OSPAR\)](#)
- 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 draft Channel Demersal Non-Quota Species 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

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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 draft Channel Demersal Non-Quota Species FMP will support the management of fishing activity in MPAs. When implementing any actions arising from the FMP that overlap with European Marine Sites 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 Special Areas of Conservation and Special Protection Areas. [Appendix C](#) lists the different types of MPA and relevant designations in the UK.

Conservation of Habitats and Species Regulations 2017

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 draft Channel Demersal Non-Quota Species FMP will seek to support the protection of protected sites and species.

The Conservation of Offshore Marine Habitats and Species Regulations 2017

[The Conservation of Offshore Marine Habitats and Species Regulations 2017](#) include provisions for the designation and protection of areas that host important habitats and species in the offshore marine area. The draft Channel Demersal Non-Quota Species FMP will seek to support the protection of offshore marine habitats and species.

Marine Strategy Regulations 2010 – UK wide

The [Marine Strategy Regulations 2010](#) requires Administrations in the UK to take action to achieve or maintain GES in UK waters. The UK 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).

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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 production of marine plans where the MPS is in place. The MPS provides the framework for marine plans around the UK and sets the high-level policy context for marine planning, including setting high-level marine objectives. Under MCAA s.58, decisions relating to the marine area should be taken in line with the Marine Plan. The draft Channel Demersal Non-Quota Species 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 draft Channel Demersal Non-Quota Species 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 draft Channel Demersal Non-Quota Species FMP will deliver measures to secure healthy stocks that will be fished in an environmentally sustainable manner.

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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.

[The Environmental Targets \(Biodiversity\) \(England\) Regulations 2023](#)

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

[The Environmental Targets \(Marine Protected Areas\) Regulations 2022 – England](#)

These Regulations set a long-term environmental target under section 1 of the [Environment Act 2021 \(c. 30\)](#). The target set by regulation 3 is in respect of the condition of protected features in MPAs. These Regulations specify the standard to be achieved in respect of the target and the date by which it must be achieved. The draft Channel Demersal Non-Quota Species FMP will support achieving the targets set out in the regulations.

Climate Change Act 2008 – UK Wide

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

Marine wildlife bycatch mitigation initiative – UK Wide

The [Marine wildlife bycatch mitigation initiative](#) outlines how the UK will achieve its ambitions to minimise and, where possible, eliminate the bycatch of sensitive marine species. This initiative brings together, and builds on, existing work such as the UK Bycatch Monitoring Programme and [Clean Catch UK](#), recognising that further actions need to be taken if we are to achieve our objectives. The draft Channel Demersal Non-Quota Species 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 draft Channel Demersal Non-Quota Species FMP will support achieving the targets for water quality set out in the regulations.

Other FMPs

The Southern North Sea flatfish FMP overlaps with the Channel Demersal Non-Quota 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 Channel Demersal Non-Quota FMP will interact with other plans. Defra and our delivery partners considered the interaction between the current tranche of plans whilst drafting the proposed FMP. We will review interactions again as the final versions are prepared and adjust the proposed 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 proposed 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 draft Channel Demersal Non-Quota Species FMP in relation to the environmental issues screened into this SEA, and where applicable their associated UK MS descriptors (Table 4).

Overview of the Potential Positive and Negative Environmental Effects of the Goals, Sub goals and Actions of the Channel Demersal Non-Quota Species FMP

The potential positive and negative environmental effects of implementing the goals, sub goals and actions, and measures set out in section 1 of the draft Channel Demersal Non-Quota Species FMP have been identified in Table 5 and 6 below.

Table 5. High-level assessment of the positive and negative environmental effects of the draft Channel Demersal Non-Quota FMP goals, sub goals and actions.

Action	Time frame	Positive effects	Negative effects
Theme: Sustainable Fisheries,			
Goal: Deliver effective management of demersal non-quota species in the English Channel			
Scope how to define the precautionary approach in the Channel NQS mixed fisheries. How it will be initiated, implemented, and assessed, in line with data collection and management needs.	Short term (1-2 years)	Although this action will have no immediate positive effects on the environment, it should ultimately support the move towards harvest control rules that make a strong contribution to the sustainability of targeted stocks. This may also have indirect benefits for wider environment, for example food webs and biodiversity.	No immediate negative effects are anticipated. If this leads to management that reduces opportunities, that may lead to spatial changes in fishing effort that increases fishing pressure outside the scope of the FMP (area and/or species). If this leads to management that increases opportunities within the plan area, the increase in pressure could have a negative impact on the wider environment.

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Action	Time frame	Positive effects	Negative effects
<p>Following Harvest Strategy Standard guidance, progress toward sustainability (MSY or suitable proxy) or implement precautionary management for stocks of particular concern.</p>	<p>Medium term (3-5 years)/Long term (6-10 years)</p>	<p>This will make a strong contribution towards the sustainability of targeted stocks. This may also have indirect benefits for the wider environment, for example food webs and biodiversity.</p>	<p>If this leads to management that reduces opportunities, that may lead to spatial changes in fishing effort that increases fishing pressure outside the scope of the FMP (area and/or species). If this leads to management that increases opportunities within the plan area, the increase in pressure could have a negative impact on the wider environment.</p>
<p>For all stocks that are data poor and consequentially unable to be assessed for stock status, at MSY or suitable proxy, seek to improve datasets to allow for assessment.</p>	<p>Medium term (3-5 years)/Long term (6-10 years)</p>	<p>Although this action will have no immediate positive effects on the environment, it should ultimately support the move towards harvest control rules that make a strong contribution to the sustainability of targeted stocks. This may also have indirect benefits for wider environment, for example food webs and biodiversity.</p>	<p>No immediate negative effects are anticipated. If this leads to management that reduces opportunities, that may lead to spatial changes in fishing effort that increases fishing pressure outside the scope of the FMP (area and/or species). If this leads to management that increases opportunities within the plan area, the increase in pressure could have a negative impact on the wider environment.</p>

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Action	Time frame	Positive effects	Negative effects
<p>Deliver a mixed and multi-species management approach in the Channel demersal NQS fishery.</p>	<p>Medium term (3-5 years)/Long term (6-10 years)</p>	<p>This will make a strong contribution towards the sustainability of targeted stocks. This may also have indirect benefits for the wider environment, for example food webs and biodiversity.</p>	<p>If this leads to management that reduces opportunities, that may lead to spatial changes in fishing effort that increases fishing pressure outside the scope of the FMP (area and/or species). If this leads to management that increases opportunities within the plan area, the increase in pressure could have a negative impact on the wider environment.</p>
<p>Seek to ensure stocks are managed sustainably. Pursue the establishment of MSY, suitable proxy or other sustainability assessment for these stocks. Seek to regulate catches below MSY or suitable acceptable proxy for a mixed fishery for all stocks in scope of the FMP.</p>	<p>Medium term (3-5 years)/Long term (6-10 years)</p>	<p>This will make a strong contribution towards the sustainability of targeted stocks. This may also have indirect benefits for the wider environment, for example food webs and biodiversity.</p>	<p>If this leads to management that reduces opportunities, that may lead to spatial changes in fishing effort that increases fishing pressure outside the scope of the FMP (area and / or species). If this leads to management that increases opportunities within the plan area, the increase in pressure could have a negative impact on the wider environment.</p>

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Action	Time frame	Positive effects	Negative effects
Theme: Sustainable Fisheries,			
Goal: Deliver wider biological sustainability,			
Subgoal: Where possible identify and mitigate pressures on the Channel demersal NQS			
Seek to scope how to define key interactions between all Channel fisheries and non-quota stocks.	Short term (1-2 years)	Although this action will have no immediate positive effects on the environment, the increased understanding should ultimately support better management which will help achieve sustainability goals.	No negative effects are anticipated.
Better understand and define the targeting behaviour of the fleet.	Short term (1-2 years)	Although this action will have no immediate positive effects on the environment, the increased understanding should ultimately support better management which will help achieve sustainability goals.	No negative effects are anticipated.

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Action	Time frame	Positive effects	Negative effects
Manage key interactions to minimise adverse impacts on Channel demersal NQS stocks.	Medium term (3-5 years)/Long term (6-10 years)	This should support the sustainability of the targeted stock. This may also have indirect benefits for the wider environment, for example food webs and biodiversity.	If this results in a reduction in fishing opportunities, it may lead to spatial changes in fishing effort and increase fishing pressure elsewhere.
Identify and afford appropriate protections for essential fish habitats important to key life stages of Channel demersal NQS.	Medium term (3-5 years) /Long term (6-10 years)	With protection in place, this should support the sustainability of the stock by improving recruitment success. It is also likely to have a wider positive effect on biodiversity, food webs and seabed integrity.	This may lead to spatial changes in fishing effort of fishing pressure to other places within the FMP area or beyond.
Understand the impact and map species sensitivities to climate change on Channel demersal NQS.	Medium term (3-5 years) /Long term (6-10 years)	Although this action will have no immediate positive effects on the environment, the increased understanding will ultimately support better management which will help achieve sustainability goals	No negative effects are anticipated

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Action	Time frame	Positive effects	Negative effects
Identify where climate change mitigation and adaptation measures can be implemented to reduce impacts on the fishery.	Medium term (3-5 years)/Long term (6-10 years)	By mitigating and adapting, it will allow for better management of the stocks.	Any unintended reduction in fishing opportunities could lead to spatial changes in fishing effort and increased fishing pressure elsewhere. Any change in fishing practices as mitigation could introduce a different set of pressures that may have negative effects.
Better understand the impact of anthropogenic non-fishing pressures on Channel demersal NQS stocks.	Medium term (3-5 years)/Long term (6-10 years)	Although this action will have no immediate positive effects on the environment, understanding other impacts on stocks will allow for better management in the future.	No negative effects are anticipated

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Action	Time frame	Positive effects	Negative effects
Theme: Sustainable Fisheries,			
Goal: Deliver wider biological sustainability,			
Subgoal: Understand and reduce where needed the impact of Channel demersal NQS fisheries on the wider marine environment			
Investigate key issues in current unwanted and protected species bycatch within the fishery.	Short term (1-2 years)	A better understanding of bycatch will allow for appropriate mitigation measures to be designed where required. If then implemented, this will have a positive on biodiversity and, in some cases, MPA condition.	No immediate negative effects are anticipated. If this eventually leads to management that reduces opportunities, that may lead to spatial changes in fishing effort that increases fishing pressure elsewhere.
Better understand the impact of fishing gear interactions with the marine environment in the Channel demersal NQS fishery.	Medium term (3-5 years)/Long term (6-10 years)	A better understanding of benthic impact will allow for appropriate mitigation measures to be designed where required. If then implemented, this will have a positive effect on sea floor integrity and biodiversity.	No immediate negative effects are anticipated. If this eventually leads to management that reduces opportunities, that may lead to spatial changes in fishing effort that increases fishing pressure elsewhere.

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Action	Time frame	Positive effects	Negative effects
Establish data collection requirements to monitor and track key Channel demersal NQS fishing impacts on unwanted / protected species bycatch.	Medium term (3-5 years)	A better understanding of bycatch will allow for appropriate mitigation measures to be designed where required. If then implemented, this will have a positive on biodiversity and, in some cases, MPA condition.	No immediate negative effects are anticipated. If this eventually leads to management that reduces opportunities, that may lead to spatial changes in fishing effort that increases fishing pressure elsewhere.
Theme: Social and Economic,			
Goal: Better understand and optimise social and economic benefits			
Identify who is reliant upon NQS fisheries/ impacted by them.	Short term (-1-2 years)	Including social, economic and cultural importance in fisheries management is consistent with ecosystem-based approaches and can lead to improved governance and environmental outcomes.	If social, economic and cultural importance are considered in isolation, fisheries management approaches may have negative environmental consequences.
Identify social and economic data on current direct and indirect benefits derived from Channel	Short term (1 -2years)	Including social, economic and cultural importance in fisheries management is consistent with ecosystem-	If social, economic and cultural importance are considered in isolation, fisheries management

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Action	Time frame	Positive effects	Negative effects
demersal NQS fisheries on coastal communities.		based approaches and can lead to improved governance and environmental outcomes.	approaches may have negative environmental consequences.
Identify social and economic indicators used to monitor social and economic impacts and how this information will be gathered.	Short term (0-1 years)	Including social, economic and cultural importance in fisheries management is consistent with ecosystem-based approaches and can lead to improved governance and environmental outcomes.	If social, economic and cultural importance are considered in isolation, fisheries management approaches may have negative environmental consequences.
Where data is not currently available, seek to identify new/ novel ways to collect social and economic data.	Medium term (3-5 years)/Long term (6-10 years)	Including social, economic and cultural importance in fisheries management is consistent with ecosystem-based approaches and can lead to improved governance and environmental outcomes.	If social, economic and cultural importance are considered in isolation, fisheries management approaches may have negative environmental consequences.
Seek to understand if there are opportunities to optimise direct and indirect benefits from Channel demersal NQS fisheries	Medium term (3-5 years)/Long term (6-10 years)	Including social, economic and cultural importance in fisheries management is consistent with ecosystem-based approaches and can	If social, economic and cultural importance are considered in isolation, fisheries management approaches may have negative environmental consequences.

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Action	Time frame	Positive effects	Negative effects
		lead to improved governance and environmental outcomes.	
Theme: Social and Economic,			
Goal: Develop on partnership working in order to build capacity for the industry to be able to input into matters affecting NQS fisheries management			
Formally establish a Channel demersal NQS management group to allow for continued engagement in ongoing management of NQS fisheries.	Short term (1-2 years)	Including social, economic and cultural importance in fisheries management is consistent with ecosystem-based approaches and can lead to improved governance and environmental outcomes.	If social, economic and cultural importance are considered in isolation, fisheries management approaches may have negative environmental consequences.
Theme: Evidence,			
Goal: Better understand the wider non-quota species evidence needs			
Building on the Evidence Statement, establish what evidence is required to meet the wider goals of the FMP, as well as any further policy/legislative objectives. Identify what evidence is currently available	Short term (1-2 years)	This action, while important, will not by itself have a positive effect on the environment. However, it will allow for more informed management decisions in the	This action, while important, will not by itself have an effect on the environment. However, it will allow for more informed management decisions. The intention of these would be to have a positive impact,

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Action	Time frame	Positive effects	Negative effects
through a robust and systematic process. Understand the data channels that currently source this evidence.		future that could result in improvements across a range of receptors.	but there could be unintended negative effects, resulting from spatial changes in fishing effort.
Identify what evidence gaps exist based on current evidence baselines and evidence needs. Prioritise these based on species/fleet basis.	Short term (1-2 years)	This action, while important, will not by itself have a positive effect on the environment. However, it will allow for more informed management decisions in the future that could result in improvements across a range of receptors.	This action, while important, will not by itself have an effect on the environment. However, it will allow for more informed management decisions. The intention of these would be to have a positive impact, but there could be unintended negative effects, resulting from spatial changes in fishing effort.
Theme: Evidence,			
Goal: Develop the non-quota species evidence base			
Identify how current data channels can be adapted or improved to meet evidence gaps.	Short term (1-2 years)	This action, while important, will not by itself have a positive effect on the environment. However, it will allow for more informed management decisions in the future that could result in	This action, while important, will not by itself have an effect on the environment. However, it will allow for more informed management decisions. The intention of these would be to have a positive impact, but there could be unintended

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Action	Time frame	Positive effects	Negative effects
		improvements across a range of receptors.	negative effects, resulting from spatial changes in fishing effort.
Where necessary, establish new data collection channels to close evidence gaps. Investigate opportunities to gather non-traditional or novel sources of data to complement this, including using new technologies.	Medium term (3-5 years)/Long term (6-10 years)	This action, while important, will not by itself have a positive effect on the environment. However, it will allow for more informed management decisions in the future that could result in improvements across a range of receptors.	Field surveys could result in negative effects on the environment if impacts are not adequately considered during the planning stage.
Establish methods to consolidate new data with existing data in a singular platform.	Medium term (3-5 years)/Long term (6-10 years)	This action, while important, will not by itself have a positive effect on the environment. However, it will allow for more informed management decisions in the future that could result in improvements across a range of receptors.	Field surveys could result in negative effects on the environment if impacts are not adequately considered during the planning stage.

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Table 6. High-level assessment of the positive and negative environmental effects of the draft Channel Demersal Non-Quota FMP measures

Gear / species	Measure	Time frame	Positive effects	Negative effects
Flyseining	Propose introducing a 221-kW restriction in ICES areas 7d and 7e in UK waters for 0-12 nm for flyseiners.	Short term (1-2 years)	Likely to reduce fishing pressure within the inshore environment (although this is not a cap on total effort). This would have a potential positive effect on stocks (if effort is removed rather than displaced), and the wider environment inshore, for example by reducing seabed disturbance.	May lead to spatial changes in fishing effort and increased pressure outside 12nm. This may reduce the benefit to stocks and increase pressure on the wider environment, for example increased seabed disturbance.
	Consider a gross tonnage limitation in ICES areas 7d and 7e for flyseiners.	Short term (1-2 years)	Likely to reduce top-end fishing pressure from largest flyseine vessels (although this is not a cap on total effort) which would be beneficial to stocks and wider environment across the FMP area.	May not limit flyseine fishing effort/may allow for an increase of effort from below top-end size classes.

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Gear / species	Measure	Time frame	Positive effects	Negative effects
	Propose that all flyseiners use 100 mm mesh as standard.	Short term (1-2 years)	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).	May lead to spatial changes in fishing effort outside the FMP area increasing pressure elsewhere on stocks and/or wider environment.
	Further consider consulting with further details related to introducing a permitting scheme for flyseiners.	Medium term (3-5 years)/Long term (6-10 years)	While the permitting itself will not result in direct positive effects on the environment, it facilitates additional management measures that will have a positive effect.	May lead to spatial changes in fishing effort outside the FMP area increasing pressure elsewhere on stocks and/or wider environment.
	Subject to outcome of consultation on REM, propose introducing early adopter scheme that could become mandatory in time.	Medium term (3-5 years)/Long term (6-10 years)	While data from REM will not result in direct positive effects on the environment, it allows for more informed management approaches in the future which will have positive effects on stocks and/or the wider environment.	If vessels who volunteered for REM were allowed greater sea days, (see time spent in area restrictions), this may increase pressure on stocks and wider environment in the short term.
	Consider restrictions on time spent in area restrictions.	Medium term (3-5 years)/Long	Reduced fishing pressure from flyseiners would be beneficial to stocks and wider	Time spent in area restrictions will need to align with the effort a stock can

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Gear / species	Measure	Time frame	Positive effects	Negative effects
		term (6-10 years)	environment across the FMP area.	support, in a mixed fishery this may need to be limited to the minimum supporting species which would be detrimentally impacted by any limit on effort imposed above this.
	Consider seasonal closure for flyseiners.	Medium term (3-5 years)/Long term (6-10 years)	Seasonal closures would be designed to allow stocks to recover. May have indirect positive impacts on the wider marine environment.	May lead to increased localised effort prior/post closure.
	Consider an overall engine size limitation for flyseiners.	Medium term (3-5 years)/ Long term (6-10 years)	Reduced footprint of individual fishing events (operating smaller gears) may lead to an overall effort reduction.	Enforcement challenges may lead to increased non-compliance with this measure, which could result in greater levels of effort.
	Further consider potential rope length and diameter restrictions for flyseiners.	Medium term (3-5 years)/Long term (6-10 years)	Reduced footprint of individual fishing events (operating smaller gears) may lead to an overall effort reduction.	Technological creep and advancement in rope technologies may undermine measures effectiveness in reducing effort.

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Gear / species	Measure	Time frame	Positive effects	Negative effects
MCRS for multiple species	Consider introducing MCRS for lemon sole (25 cm), turbot (30 cm), brill (30 cm), common cuttlefish (23 cm).	Short term (1-2 years)	Introducing a MCRS will promote fish growth to the age of maturity beneficial to the recruitment of the stock. This will support local biodiversity and food webs by promoting ecosystem functions through increasing juvenile population size.	Could lead to further discards of under MCRS fish and an increase in effort to fill any financial shortfall. This negative impact can be mitigated in part by combining this measure with increased mesh size.
	Consider introducing MCRS for flyseine species, red gurnard, red mullet, bib etc.	Medium term (3-5 years)/Long term (6-10 years)	Introducing a MCRS will promote fish growth to the age of maturity beneficial to the recruitment of the stock. This will support local biodiversity and food webs by promoting ecosystem functions through increasing juvenile population size.	Could lead to further discards of under MCRS fish and an increase in effort to fill any financial shortfall. This negative impact can be mitigated in part by combining this measure with increased mesh size.

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Gear / species	Measure	Time frame	Positive effects	Negative effects
Towed gears	Consider gathering evidence on potential viable options for towed gear management measures in ICES areas 7d and 7e, in particular in relation to 0-12nm, that would enhance stock sustainability and deliver social and economic benefits to the whole sector.	Medium term (3-5 years)/Long term (6-10 years)	No measures given. Purpose is to reduce fishing pressure on juvenile individuals within the English Channel, there is need to explore compatibility with MCRS for priority species. This will have positive benefits to the stocks themselves and the wider ecosystem (biodiversity and food webs).	May lead to spatial changes in fishing effort outside the FMP area increasing pressure elsewhere on stocks and / or wider environment.
Cuttlefish	Consider introducing codes of practice on cuttlefish trap handling.	Short term (1-2 years) / medium term (3-5 years)	Protecting cuttle eggs will be beneficial to the stock. This will support local biodiversity and food webs by promoting ecosystem functions through increasing young cuttlefish as potential prey items.	No negative effects anticipated.
	Investigate the benefits of underwater structures to benefit egg survival.	Short term (1-2 years) / medium term (3-5 years)	Protecting cuttle eggs will be beneficial to the stock. This will support local biodiversity and food webs by promoting ecosystem functions through increasing young cuttlefish as potential prey items.	Potential for any additional underwater structures deployed to have negative impacts on seabed habitat.

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Gear / species	Measure	Time frame	Positive effects	Negative effects
	Consider temporary seasonal closures for trawlers.	Short term (1-2 years)	By protecting areas of high importance to the species, this will be beneficial to the stock. There may also be indirect benefits to biodiversity and seafloor habitats.	May lead to spatial changes in fishing effort to other areas, increasing pressure elsewhere.
Octopus	Monitor catches, create research plan and gather evidence.	Short term (1-2 years) /	While the collection of data and evidence has no immediate direct benefit on the environment, it will allow for more informed management designed to protect the stock.	No negative effects anticipated.

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Gear / species	Measure	Time frame	Positive effects	Negative effects
Recreational	Support the recreational sector to consider introducing voluntary guidelines and education on how recreational fishers can fish more sustainably. This could include voluntary MCRS information, guidance on methods and equipment to reduce damage to fish, as well as information on how anglers can handle and release fish to reduce post-release mortality.	Short term (1-2 years)	If guidelines are followed, it should reduce the pressure on stocks from recreational fishers.	No negative effects anticipated.

Overview of Potential Positive Environmental Effects of the FMP

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

The draft Channel Demersal Non-Quota FMP seeks to effectively manage the harvesting of target species stocks within sustainable limits while focussing on improving the sustainability of the fishery over the long-term.

The proposed priority management measures are designed to protect stocks in the short term that are potentially not being fished sustainably at present. New minimum conservation reference sizes should improve stock sustainability while more data is gathered to inform future comprehensive harvest control rules.

The proposed priority management measures on flyseining are designed to restrict effort in response to concerns that this method of capture has the potential to cause significant harm to stocks within scope of the FMP. By reducing the risk posed from flyseining, improvements in the sustainability of stocks are expected.

The proposed priority management measures for cuttlefish, by protecting eggs and important habitats, should improve the status of the stock by improving recruitment. Temporary seasonal closures for trawlers may also protect seafloor habitats at certain times, but this might not benefit seafloor habitat with long recovery times.

As well as improving the status of the stocks themselves and contributing to improvements against UK MS commercial fish descriptor targets (D3), these precautionary management measures may also benefit wider fish biodiversity and food webs, therefore contributing to improvements in UKMS targets under D1 and D4. Larger mesh sizes will reduce unwanted bycatch across a range of fish species where implemented and contribute to general improvements to the functioning of the ecosystem.

As the stocks within the scope of this FMP are data poor there are proposed actions that set out a pathway to gather the required data to inform future management. By progressing towards MSY or a suitable proxy, or implementing precautionary management for stocks of particular concern, further improvements in targeted stocks and UKMS commercial fish descriptor targets (D3) are expected in the longer term. As with the proposed priority management measures, improving commercial stocks will also lead to some improvements in wider fish biodiversity as a result of general improvements to the functioning of the ecosystem and food webs. Therefore, contributing to UKMS targets under D1 and D4.

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Following more evidence collection there are proposed actions that will identify and protect essential fish habitats important key life stages of demersal non-quota species in the Channel. This should increase recruitment into, and increase the resilience of, the commercial stocks (D3). It is also likely to benefit other species (commercial and non-commercial) that also use those habitats. Therefore, contributing to fish biodiversity and food web UKMS targets under D1 and D4. If protection is year-round and not seasonal there is likely to be some benefit to benthic habitats, and therefore a contribution to benthic habitat biodiversity and seafloor integrity UKMS targets under D1 and D6.

The FMP recommends that given the current lack of data on bycatch associated with NQS fisheries, additional evidence is needed to understand levels of bycatch associated with static and towed gear use on birds, mammals, and fish, as well as their impact on benthic habitat integrity. This evidence should then be used to develop robust mitigation strategies which will be set out in future versions of the FMP. This information should also be used to support the national bycatch mitigation programme.

The draft Channel Demersal Non-Quota Species FMP does not include specific actions on water quality issues such as marine litter at this time. The draft FMP acknowledges the ongoing work Defra is undertaking with other Contracting Parties to the OSPAR convention to implement the second Regional Action Plan on Marine Litter. This includes action to tackle marine litter from land and sea-based sources, including fishing.

Climatic factors

The draft Channel Demersal Non-Quota Species FMP acknowledges that the UK seafood sector will need to consider how it will reduce emissions to contribute to meeting the Net Zero target. The draft FMP has not proposed any actions to reduce emissions at this stage.

The draft Channel Demersal Non-Quota Species FMP acknowledges that the UK continues to build the evidence base on blue carbon habitats, including marine sediments. The Blue Carbon Evidence Partnership is looking to progress the evidence base to address some of the uncertainties in this area. This evidence could be used in future FMP iterations.

The draft Channel Demersal Non-Quota Species FMP has an action to identify where climate change mitigation and adaptation measures can be implemented to reduce impacts on the fishery. However, this is designed to support sustainable fisheries rather than contribute to the Net zero target.

Cultural Heritage

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

Fisheries management that reduces adverse effects on habitats and seabed features, for example through gear design and spatial closures, can indirectly help to conserve both known and unknown marine heritage assets.

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

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

Landscapes and Seascapes

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

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

The SEA process will highlight to fisheries policy authorities how fisheries management policies and measures could support measures that protect submerged prehistoric landscapes or seascapes.

Overview of Potential Negative Environmental Effects of the FMP

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

It is difficult at this stage to be certain whether the draft Channel Demersal Non-Quota Species FMP will result in any significant negative effects on the marine environment,

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as the proposed policies and fisheries management measures are at the beginning stages of their development. Therefore, we do not yet know the potential environmental effects of implementing the combination of policies and fisheries management measures set out in the draft Channel Demersal Non-Quota Species FMP. However, the fisheries objectives which will guide our actions should deliver improved environmental protection, so although it is difficult at this stage to anticipate significant negative effects on the environment in the short term, the overall ambition is to have a net 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 demersal non-quota fishery to alter through publishing the Channel Demersal Non-Quota Species 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 objectives may, through interventions intended to have a positive effect, lead to displacement of fishing activities 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.

Section 5 has identified potential negative effects that could arise from the implementation of the FMP's policies, actions, and measures. Due to the policies, actions, and measures being at an early stage of development it is difficult to systematically set out their magnitude and significance. Changes to fishing activity resulting from the implementation of the FMP objectives and measures should be monitored as part of the process of evaluating the effectiveness of FMPs. Tools such as inshore Vessel Monitoring Systems (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 measures could lead to any significant environmental effects if unmanaged. Mitigating action could then be considered where any significant negative effects are identified, that are related to those issues scoped into this assessment.

In-combination Effects

The draft Channel Demersal Non-Quota Species FMP could potentially have positive (or negative) in-combination effects with other programmes to deliver sustainable

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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 measures being at an early stage of development. From the analysis of the potential environmental effects (section 5) of the policies and measures set out in the draft Channel Demersal Non-Quota Species FMP, the potential negative effects are not considered significant enough at this stage to require the policies and measures to be amended. When considering other potential policies, we are not aware at this stage that any other regimes/activities are going to change that position. The draft FMP could facilitate the in-combination assessment with Marine Plans by providing more specific detail on how the FMP could positively or negatively interact with them.

Formal assessments of the impact of the draft Channel Demersal Non-Quota Species FMP and its specific fisheries management measures on MPAs will be conducted, where appropriate, as part of the Habitats Regulations and Marine Conservation Zone assessments on individual measures. 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 measures of all FMPs will be considered through the mandatory FMP monitoring process once the plan is published and could form part of the longer-term JFS or FMP review cycles (section 8).

Conclusions

Fishing for demersal non-quota species in the Channel is an ongoing activity that poses some risks to the quality status of the marine environment. The draft Channel Demersal Non-Quota Species FMP focuses on achieving the sustainable harvesting of stocks and therefore will reduce the risks to the future status of stocks in the long term thus giving net positive benefit to the environment.

Proposed precautionary management measures will take immediate steps to improve sustainability and reduce the risk posed, for example the introduction of increased mesh sizes, MCRS, and restrictions on flyseining. In the longer term, the FMP will use an improved evidence base to regulate catches below MSY or a suitable proxy.

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Together, these actions will have the positive benefit of ensuring stock sustainability and contributing to improving the status of UKMS commercial fish stocks (D3) in the UK. In doing this there may also be improvements in overall fish biodiversity (D1) and the marine food webs (D4).

Nevertheless, we acknowledge that fishing for demersal non-quota species in the Channel 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 delivering the sustainability objective.

The draft Channel Demersal Non-Quota Species FMP takes a precautionary approach to fisheries management and adopts a balanced and proportionate approach towards delivering the fisheries objectives.

The draft Channel Demersal Non-Quota Species FMP potentially may result in positive and negative effects on the environment in the short term, with the overall ambition to have a net positive effect on the environment over the long term through the implementation of the ecosystem-based approach to fisheries management.

As well as impacting the commercial fish stocks themselves, the fishery is likely to be impacting the wider environment. Bycatch of certain species (particularly from the small proportion of landings using static nets), and the impact mobile demersal gear is having on seafloor integrity, have been highlighted as a risk.

Actions have been proposed to investigate the impact of both unwanted / protected species bycatch and demersal gear and seafloor interactions. While these will not result in immediate positive environmental benefits or environmental improvements, they should help determine what mitigation may be required. The FMP recommends using additional evidence to develop robust mitigation strategies and be used to support the national bycatch strategies.

Before there are any changes to fisheries management as a result of the draft Channel Demersal Non-Quota Species 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 draft Channel Demersal Non-Quota FMP does not specifically consider the impacts of fishing on marine heritage assets. However, any future 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 measures to achieve sustainable harvesting of targeted stocks but there is scope for future iterations of the FMP to address this wider issue.

The draft Channel Demersal Non-Quota 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 measures to achieve sustainable harvesting of demersal 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 Channel Non-Quota Species Fishing

This ER has acknowledged the existing negative environmental effects associated with the fishing activity which will be managed through the FMP and has set out the actions proposed by the FMP to reduce them (Section 6).

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

Existing measures to regulate the demersal non-quota species fishing in the Channel largely comprise of technical measures on mesh size or other aspects of gear. Further spatial restrictions for towed gear operating in the 6nm have been introduced through IFCA bylaws relating to localised marine protected areas. Some IFCA also have introduced MCRSs for some species within the scope of the Channel Demersal Non-Quota Species FMP. These measures will be part of the overall management strategy and will contribute to the conservation of stocks and the wider environment.

The draft Channel Demersal Non-Quota Species FMP has considered advice from Statutory Nature Conservation Bodies (SNCBs) with respect to the impacts from demersal non-quota species fishing activity on MPA features and the wider marine environment in relation to UK MS descriptors. The draft Channel Demersal Non-Quota Species FMP has set out the following proposed measures to reduce those known negative effects as follows:

Within MPA Impacts

The MPA network ([Appendix C](#)) offers protection through the existing MPA management process (via the power to make byelaws), to our most valuable species and habitats by managing human activities such as fishing, to avoid likely significant effects on the environment.

IFCA and MMO were engaged during 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 draft Channel Demersal Non-Quota Species FMP, those interventions will be screened for likely significant effects on any European sites or European offshore marine sites that overlap with the geographical scope of the measure and, where necessary, an 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 (MaCAA), a Marine Conservation Zone (MCZ) Assessment 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 demersal non-quota fishing activity, and the FMP's policies, actions, and measures, 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.

Outside MPA Impacts

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 demersal non-quota species such as static nets also posed a risk, however their use is lower compared to towed gear. The risk of prey species bycatch 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. This severely restricts both the ability to draw firm conclusions on mobile bycatch risks on MPA features beyond site boundaries, and the ability to identify specific mitigation. The draft Channel Demersal Non-Quota Species 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.

UKMS descriptor impacts

The draft Channel Demersal Non-Quota Species FMP focuses on achieving sustainable harvesting of a number of stocks. This will support the achievement of GES for UKMS Descriptor 3 – Commercial fish and shellfish stocks. This will also benefit the wider marine environment and support improvements in the status of fish biodiversity (Descriptor 1) and marine food webs (Descriptor 4).

The Channel Demersal Non-Quota Species FMP proposes to investigate the impact of both unwanted and protected species bycatch, and demersal gear and seafloor interactions. The FMP recommends using additional evidence to develop robust mitigation strategies and be used to support the national bycatch strategies.

In the update to [UK Marine Strategy Part 1](#) (2019) Defra made a commitment to assess the feasibility of setting up a partnership working group, referred to here as the Benthic Impact Working Group. The UK Administrations and Government agencies are in the process of developing this Group which will be tasked with providing evidence-based advice to reduce the impacts of fishing activity on benthic habitats to achieve Good Environmental Status. Once convened, this group should provide strategic oversight and direction for delivering future advice. This includes identifying, developing, and trialling possible mitigation or management options, in partnership.

Climate Change

Vessel Emissions

The draft Channel Demersal Non-Quota Species FMP acknowledges that Defra are in the process of investigating the feasibility and potential of existing carbon mitigating solutions. This will be done by collaborating across Government, with industry and academic organisations to understand the current evidence gaps and latest innovations, to support the development of pathways towards Net Zero for the UK fishing fleet. The FMP will support the fishery through national transition to low carbon fishing, contributing to UK Government commitments to Net Zero.

Blue Carbon

The draft Channel Demersal Non-Quota Species FMP acknowledges that the UK continues to build the evidence base on blue carbon habitats, including marine sediments. The Blue Carbon Evidence Partnership is looking to progress the evidence base to address some of the uncertainties in this area.

Climate change impacts on demersal stocks and fisheries

The draft Channel Demersal Non-Quota Species FMP acknowledges that climate change poses potential knock-on effects for the mixed demersal fishery. However, given the highly adaptable nature of wild capture fisheries, warmer seas may open new

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opportunities for fishers and for inclusion of these species in the FMP management. Further research will be required to predict the scale of impacts to the environment and over what timeframe this will be applicable to the Channel. Climate mitigation and adaptation measures can then be proposed and developed. Direction on climate research and adaptation may be set at a national level, should this occur, the relevant chapter in the FMP will be reviewed and amended.

Cultural Heritage

The draft Channel Demersal Non-Quota Species FMP does not explicitly consider the potential impacts of 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 draft Channel Demersal Non-Quota Species FMP does not explicitly consider the potential impacts of fishing activity on submerged prehistoric landscapes or seascapes.

The FMP will investigate the impact of fishing activity has on the wider environment. Any future management intervention could indirectly help to conserve submerged prehistoric landscapes or seascapes.

Defra should work with agencies such as Natural England, JNCC, NRW, 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 demersal non-quota species in the 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

An assessment of the likely negative effects of the policies, measures and actions was undertaken in Section 5. The likely negative effects will 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, measures and actions can be avoided. Monitoring changes to fishing activity resulting from the implementation of the FMP will help identify any unintended consequences on the environment that could lead to significant negative environmental effects. Where likely unintended environmental consequences are identified, appropriate changes to management or mitigation will be implemented to reduce to any negative environmental effects developing.

General

The UK is committed to using marine resources sustainably and reducing the impacts of fishing on the marine environment to comply with its international and domestic obligations. The draft Channel Demersal Non-Quota Species FMP seeks to support these commitments by providing the tools (FMP policies and measures) to deliver the sustainable harvesting of stocks.

The range of environmental issues identified through this assessment have been largely considered by the draft Channel Demersal Non-Quota Species 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.

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

7. Reasonable Alternatives

Regulation 12(2)(b) of the SEA Regulations 2004 requires the fisheries policy authorities to consider reasonable alternatives to the draft Channel Demersal Non-Quota Species FMP. A reasonable alternative has been defined as 'an activity that could feasibly attain or approximate the FMP's objectives at a lower environmental cost or decreased level of environmental degradation'¹⁹.

¹⁹ [Reasonable alternatives definition](#)

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Section 2 of the Fisheries Act 2020 requires the fisheries policy authorities to publish a JFS setting out how they will use FMPs to achieve, or contribute to achieving, the fisheries objectives. The JFS lists the planned FMPs, including the draft Channel Demersal Non-Quota Species FMP. This listing creates a legal requirement to prepare and publish the draft Channel Demersal Non-Quota Species FMP and does not allow for a reasonable alternative to producing an FMP unless a 'relevant change of circumstances', as set out in section 7 (7)²⁰ of the Fisheries Act applies; we are not aware of any information that would invoke these circumstances.

The draft Channel Demersal Non-Quota Species FMP, alongside the other 42 FMPs was agreed by the fisheries policy authorities through the JFS publication. Engagement across administrations took place via the processes outlined in the [Fisheries Framework](#). Regular scrutiny of the emerging list of FMPs was built into every step of the JFS policy formation, and through this process credible alternatives to managing stocks without an FMP were considered. The draft list of proposed FMPs, that included an FMP for channel non-quota species, was part of the public consultation on the draft Joint Fisheries Statement in early 2022. There were no comments on the inclusion of an FMP for channel non-quota species.

Fishing for demersal non-quota species in the Channel 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 draft Channel Demersal Non-Quota Species FMP seeks to promote the management of the fishery in a more coherent and coordinated manner that considers wider environmental issues. On that basis, the FMP will likely deliver greater environmental gain and will have a more significant positive impact on improving the current environmental baseline, compared to a 'business as usual' approach that only continues with existing fisheries management.

The draft Channel Demersal Non-Quota Species FMP policies and measures were developed to specifically address those fisheries management issues identified within the 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

²⁰ [Fisheries Act 2020 \(legislation.gov.uk\)](#)

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proposed policies and measures to ensure they have minimal negative environmental effects and where applicable maximum positive environmental gain. Stakeholder input, including that from the environmental sector has been considered during the development of polices and measures. These processes have been employed to ensure the most appropriate actions have been proposed for this stage in the life cycle of the FMP. An assessment of the potential alternatives is provided in Tables 7 & 8.

Table 7. Assessment of alternatives to precautionary management measures

Gear / Species	Measures	Alternative to proposed measures
Flyseining	<p>Propose introducing a 221-kW restriction in ICES areas 7d and 7e in UK waters for 0-12 nm for flyseiners.</p> <p>Consider a gross tonnage limitation in ICES areas 7d and 7e for flyseiners.</p> <p>Propose that all flyseiners use 100 mm mesh as standard.</p> <p>Subject to outcome of consultation on REM, propose introducing early adopter scheme that could become mandatory in time.</p> <p>Further consider consulting with further details related to introducing a permitting scheme for flyseiners.</p> <p>Consider restrictions on time spent in area restrictions.</p> <p>Consider seasonal closure for flyseiners.</p> <p>Consider an overall engine size limitation for flyseiners.</p>	<p>These precautionary measures are proposed to reduce the risk from flyseining while more evidence on the impact is gathered, in response to stakeholder concerns.</p> <p>They are part of a suite of measures designed to protect stocks.</p> <p>No alternatives have identified at this stage. Other alternatives will be considered once more evidence is available to inform appropriate management.</p>

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Gear / Species	Measures	Alternative to proposed measures
	<p>Further consider potential rope length and diameter restrictions for flyseiners.</p>	
<p>MCRS for multiple species</p>	<p>Consider introducing MCRS for lemon sole (25 cm), turbot (30 cm), brill (30 cm), common cuttlefish (23 cm).</p> <p>Consider introducing MCRS for flyseine species – red gurnard, red mullet, bib etc.</p>	<p>This is intended to protect juvenile fish, alongside increases in mesh size. Sizes have been informed by linking to current evidence on the maturity of each species. This was deemed a simple measure to implement that will significantly help promote stock health and therefore fishing opportunities across each sector. Alternative sizes (e.g., increase or decrease on those proposed) would not follow the evidence currently available. This is one available management tool to increase stock protection.</p> <p>No alternatives have been identified at this stage. Other alternatives have been considered that have also been included as a suite of measures to improve stock sustainability.</p>

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Gear / Species	Measures	Alternative to proposed measures
Towed gears	<p>Consider gathering evidence on potential viable options for towed gear management measures in ICES areas 7d and 7e, in particular in relation to 0-12nm, that would enhance stock sustainability and deliver social and economic benefits to the whole sector.</p>	<p>Precautionary measures to reduce the risk from towed gears will be considered alongside developing evidence. These may be introduced as part of a suite of measures designed to protect stocks.</p> <p>No alternatives have been identified at this stage. Other alternatives will be considered once more evidence is available to inform appropriate management.</p>
Cuttlefish	<p>Consider introducing codes of practice on cuttlefish trap handling.</p> <p>Investigate the benefits of underwater structures to benefit egg survival.</p> <p>Consider temporary seasonal closures for trawlers.</p>	<p>These precautionary measures are proposed to increase cuttlefish stock sustainability.</p> <p>They are part of a suite of measures designed to protect stocks.</p> <p>No alternatives have been identified at this stage. Other alternatives will be considered once more evidence is available to inform appropriate management</p>
Octopus	<p>Propose to monitor catches, create research plan, and gather evidence.</p>	<p>More evidence is required to inform future management.</p> <p>No alternative identified at this stage.</p>

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Gear / Species	Measures	Alternative to proposed measures
		Different approaches to management can be considered once more information is available.
Recreational	Support the recreational sector to consider introducing voluntary guidelines and education on how recreational fishers can fish more sustainably. This could include voluntary MCRS information, guidance on methods and equipment to reduce damage to fish, as well as information on how anglers can handle and release fish to reduce post-release mortality.	Voluntary approach is considered most appropriate in the first instance. No alternatives have been identified at this stage. Alternatives can be considered later if required.

Table 8. Assessment of alternatives to proposed goals and actions.

Actions	Alternative to proposed actions
<p>Theme: Sustainable Fisheries</p> <p>Goal: Deliver effective management of demersal non-quota species in the English Channel.</p>	
<p>Define the precautionary approach in the Channel NQS mixed fisheries. How it will be initiated, implemented, and assessed – in line with data collection and management needs.</p> <p>Following Harvest Strategy Standard guidance, progress toward sustainability (MSY or suitable proxy) or implement precautionary management for stocks of particular concern.</p> <p>For all stocks that are data poor and consequentially unable to assessed for</p>	<p>This group of actions sets out a plan for reaching stock sustainability.</p> <p>NQS are often data poor so improving datasets is essential.</p> <p>No alternatives have been identified at this stage.</p>

Actions	Alternative to proposed actions
<p>stock status, at MSY or suitable proxy, seek to improve datasets to allow for assessment.</p> <p>Deliver a mixed and multi-species management approach in the Channel demersal NQS fishery.</p> <p>Ensure stocks are managed sustainably. Pursue the establishment of MSY, suitable proxy or other sustainability assessment for these stocks. Seek to regulate catches below MSY or suitable acceptable proxy for a mixed fishery for all stocks in scope of the FMP.</p>	
<p>Theme: Sustainable Fisheries,</p> <p>Goal: Deliver wider biological sustainability.</p> <p>Subgoal: Where possible identify and mitigate pressures on the Channel demersal NQS.</p>	
<p>Define key interactions between all Channel fisheries and non-quota stocks.</p> <p>Better understand and define the targeting behaviour of the fleet.</p> <p>Manage key interactions to minimise adverse impacts on Channel demersal NQS stocks.</p> <p>Identify and afford appropriate protections for essential fish habitats important to key life stages of Channel demersal NQS.</p> <p>Understand the impact and map species sensitivities to climate change on Channel demersal NQS.</p>	<p>This group of actions will increase understanding of the pressures on stocks with the intention to mitigate where possible.</p> <p>The management options they lead to can be considered alongside standard input / output controls.</p> <p>This will lead to better management.</p> <p>Alternative options can be considered as detailed measures are drafted.</p>

Actions	Alternative to proposed actions
<p>Identify where climate change mitigation and adaptation measures can be implemented to reduce impacts on the fishery.</p> <p>Understand the impact of anthropogenic non-fishing pressures on Channel demersal NQS stocks.</p>	
<p>Theme: Sustainable Fisheries</p> <p>Goal: Deliver wider biological sustainability.</p> <p>Subgoal: Understand the impact of Channel demersal NQS fisheries on the wider marine environment.</p>	
<p>Investigate key issues in current unwanted and protected species bycatch within the fishery.</p> <p>Better understand the impact of fishing gear interactions with the marine environment in the Channel demersal NQS fishery.</p> <p>Establish data collection requirements to monitor and track key Channel demersal NQS fishing impacts on unwanted / protected species bycatch.</p>	<p>Better information is required to understand the detailed nature of bycatch to adequately mitigate impacts.</p> <p>Without this, it is not possible to design effective mitigation measures.</p> <p>No alternative identified.</p>

Actions	Alternative to proposed actions
<p>Theme: Social and Economic,</p> <p>Goal: Better understand and optimise social and economic benefits</p>	
<p>Identify who is reliant upon NQS fisheries/ impacted by them.</p> <p>Identify social and economic data on current direct and indirect benefits derived from Channel demersal NQS fisheries on coastal communities.</p> <p>Identify social and economic indicators used to monitor social and economic impacts and how this information will be gathered.</p> <p>Where data is not currently available, seek to identify new/ novel ways to collect social and economic data.</p> <p>Seek to understand if there are opportunities to optimise direct and indirect benefits from Channel demersal NQS fisheries.</p>	<p>This is considered a requirement for making appropriate management decisions.</p> <p>It allows management measures to be developed in partnership by those that will be impacted.</p> <p>This will allow for alternative management measures to be discussed and agreed upon in the future.</p>
<p>Theme: Social and Economic,</p> <p>Goal: Develop on partnership working to build capacity for the industry to be able to input into matters affecting NQS fisheries management.</p>	
<p>Formally establish a Channel demersal NQS management group to allow for continued engagement in ongoing management of NQS fisheries.</p>	<p>Without this, continued engagement in ongoing management issues would be difficult.</p> <p>No alternative identified.</p>

Actions	Alternative to proposed actions
<p>Theme: Evidence,</p> <p>Goal: Better understand the wider non-quota species evidence needs.</p>	
<p>Building on the Evidence Statement, establish what evidence is required to meet the wider goals of the FMP, as well as any further policy/legislative objectives.</p> <p>Identify what evidence is currently available through a robust and systematic process.</p> <p>Understand the data channels that currently source this evidence; Identify what evidence gaps exist based on current evidence baselines and evidence needs.</p> <p>Prioritise these based on species/fleet basis.</p>	<p>Better data is required to make evidence-based management decisions.</p>
<p>Theme: Evidence,</p> <p>Goal: Develop the non-quota species evidence base.</p>	
<p>Identify how current data channels can be adapted or improved to meet evidence gaps.</p> <p>Where necessary, establish new data collection channels to close evidence gaps.</p> <p>Investigate opportunities to gather non-traditional or novel sources of data to complement this, including using new technologies.</p>	<p>Better data is required to make evidence-based management decisions.</p> <p>No alternative identified.</p>

Actions	Alternative to proposed actions
Establish methods to consolidate new data with existing data in a singular platform. Then, make data available to multiple users, increasing utility, robustness, transparency, and value.	

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

The draft Channel Demersal Non-Quota Species FMP will develop through future iterations as the evidence base improves. Policies and actions will be adapted to ensure the most appropriate and effective management interventions are used to address contemporary issues. Where appropriate, additional measures will be developed as options for more targeted management become available to tackle a wider range of fisheries management issues over the longer-term.

The public will be consulted on the draft Channel Demersal Non-Quota Species FMP, alongside the consultation of this ER. These consultations will provide stakeholders with the opportunity to review proposed measures and present alternatives if available.

8. Monitoring and Review

Monitoring

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

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

- Monitoring the effectiveness of FMP objectives and measures
- Environmental impacts monitoring

Monitoring effectiveness of the FMP

Section 6 of the Fisheries Act 2020 requires the FMP to identify appropriate monitoring against specified indicators to assess the effectiveness of the draft Channel Demersal Non-Quota Species FMP.

The impact of the draft Channel Demersal Non-Quota Species FMP outputs will be monitored using a logic model framework to assess the effectiveness of its goals and contribution towards the Fisheries Act Objectives. Full details can be found in the objectives section of the FMP.

The draft Channel Demersal Non-Quota Species FMP identified the following indicators:

- Indicators to support the monitoring of associated development processes. All indicators will have a target assigned to them. This target is what the effectiveness of goals and management measures will be assessed against and includes the following:
 - Numbers of stakeholders in the development of the FMP.
 - Number of different stakeholder groups involved in the developments of the FMP.
 - Number of engagement events.
 - Feedback received on level of engagement.
 - Feedback on contents of the FMP.
- Indicators for outcomes. All indicators will have a target assigned to them. This will be used to measure the effectiveness of goals and against which the success of management measures will be assessed. This will include (but not be limited to) the following sources:
 - Monitoring interviews.
 - ICES stock assessments (where available).
 - MMO Annual UK Sea Fisheries Statistics.
 - Seafish Economics of the UK Fishing Fleet Annual reports.
 - Cefas Sea Angling in the UK reports.
 - Channel demersal NQS FMP Management Group input into fisheries management.
- Indicators for impact. The impact steps of a logic model will be monitored using existing indicators that have been developed for several national policy areas. Each of the indicators outlined below have their own targets already laid out within the documentation and therefore there are no specific targets highlighted for this FMP in this instance. However, this could be developed in the future.
 - UK Marine Strategy.
 - The 25-Year Environment Plan (Theme C).

There are some goals and interventions within the FMP that still require further indicator development work. As new data sets and evidence becomes available to fill

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identified gaps, the FMP and its supporting Evidence Statement will be updated to keep current indicators under review.

In addition to the monitoring set out in the FMP, monitoring of the environmental effects of implementing the FMP's policies, actions and measures will be undertaken. Any changes to fishing activity resulting from the implementation of the FMP will form part of the monitoring of the effectiveness of the plan to help identify any unintended consequences on the environment that could lead to any significant negative environmental effects. Monitoring for potential environmental effects will be built into the wider process of monitoring and assessing the delivery of the draft Channel Demersal Non-Quota Species FMP and will be part of the review process (section 8). Details of the monitoring activity will be developed as part of the FMP's implementation process. Any monitoring data will be shared with those reporting on the achievement of good environmental status as required by the Marine Strategy Regulations or other relevant assessment programmes. Assessing the environmental effects of implementing the FMP objectives and associated measures will help establish what impact the FMP is having on the current baseline, and whether any changes are needed in the management of the channel demersal non-quota species fishery.

Environmental Impacts

MPAs

The conservation status of conservation sites, including SACs, SPAs, and MCZs is monitored by the SNCBs, and is reported under the Habitats Regulations and Marine and Coastal Access Act. Findings from these monitoring activities could be used to help indicate where potential risks or impacts associated with fishing activity being managed through the FMP are occurring. FMPs could act on this evidence to amend its policies and measures to reduce or avoid these risks or impacts. Findings from these monitoring activities could also be used to indicate where FMP policies and measures are having a positive effect.

UK MS

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

Atmospheric emissions

The Climate Change Committee (CCC) was set up under the Climate Change Act 2008 to support the strategic aims of Defra and the devolved administrations and to independently assess how the UK can optimally achieve its emissions reductions goals. The Committee advises on the level of carbon budgets and submits annual reports to Parliament on the UK's progress towards targets and budgets. Evidence on the contribution of the UK channel non-quota fishing fleet has been considered in this

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SEA and would continue to be reviewed against the FMP objectives as part of monitoring.

Review

The Fisheries Act 2020 requires the Channel Demersal Non-Quota Species 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 channel non-quota fishery harvesting within sustainable limits and the Fisheries Act objectives.

The results of monitoring the effectiveness of the Channel Demersal Non-Quota Species 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 Channel Demersal Non-Quota Species FMP. As part of the reporting and wider review processes, alternatives to management can be identified to ensure the Channel Demersal Non-Quota Species FMP delivers on its objectives and wider environmental obligations.

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

Appendix A: Eleven Descriptors of the UK MS

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

D2 - Non-indigenous species

D3 - Commercially exploited fish and shellfish

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

D5 - Eutrophication

D6 - Sea-floor integrity (benthic habitats)

D7 - Hydrographical conditions

D8 - Contaminants

D9 - Contaminants in fish and other seafood for human consumption

D10 - Litter

D11 - Introduction of energy, including underwater noise

Appendix B: Additional Baseline Information

D1 and D4 – Cetaceans

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

To meet Good Environmental Status, the high-level objective is that 'the population abundance of cetaceans indicates health populations that are not significantly affected by human activities'. However, according to the 2019 UKMS updated part 1 assessment (available at https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/921262/marine-strategy-part1-october19.pdf), the overall status of cetaceans in the North Sea and Celtic Seas is currently uncertain. The baseline environmental condition with respect to cetaceans is therefore one where some degree of recovery is potentially required to meet GES. For more information, see <https://moat.cefas.co.uk/biodiversity-food-webs-and-marine-protected-areas/cetaceans/>.

A summary of the status is shown in Table 1. 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.

Descriptor	Target	Indicator	North Sea	Celtic Seas
<u>D1: D4: CETACEANS</u>	The long-term viability of cetacean populations is not threatened by incidental bycatch	Harbour porpoise bycatch	GES achieved	GES status uncertain
	There should be no significant	Abundance and distribution of coastal bottlenose dolphins	GES achieved	GES status uncertain

Descriptor	Target	Indicator	North Sea	Celtic Seas
	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
		Abundance and distribution of cetaceans other than coastal bottlenose dolphins	GES partially achieved	GES status uncertain

Table 1. Detail from the 2019 UKMS assessment on cetaceans. Taken from Marine Strategy Part One: UK updated assessment and Good Environmental Status (available at <https://www.gov.uk/government/publications/marine-strategy-part-one-uk-updated-assessment-and-good-environmental-status>) and the UKMS Marine Online Assessment Tool (available at <https://moat.cefas.co.uk/>).

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 (available at <https://www.gov.uk/government/publications/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 UKMS 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, see <https://moat.cefas.co.uk/biodiversity-food-webs-and-marine-protected-areas/cetaceans/harbour-porpoise-bycatch/>.

More recent analysis for the 2023 OSPAR quality status report (which uses the same indicator as the UKMS) shows that bycatch of harbour porpoise in the Greater North

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Sea and Irish & Celtic seas are exceeding the threshold. Bycatch of common dolphin is also exceeding the threshold. For more details, see <https://oap.ospar.org/en/ospar-assessments/quality-status-reports/qsr-2023/indicator-assessments/marine-mammal-bycatch/>. As this is a common indicator for both OSPAR and UKMS, that suggests that an updated UKMS 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)²¹, it is specifically net fisheries (for example, gill nets, tangle nets etc) that are largely responsible for both harbour porpoise and common dolphin bycatch.

Cetacean abundance and range targets

For coastal bottlenose dolphins, the indicator target of 'no statistically significant decrease in abundance' was met in the Greater North Sea and for the largest group in the Celtic Seas (in the Coastal Wales assessment unit). No assessment has been possible for the other two smaller Celtic Seas Groups (in the West Coast assessment unit and Coastal Southwest assessment unit). For more information, see <https://moat.cefas.co.uk/biodiversity-food-webs-and-marine-protected-areas/cetaceans/abundance-and-distribution-of-coastal-bottlenose-dolphins/>

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, see <https://moat.cefas.co.uk/biodiversity-food-webs-and-marine-protected-areas/cetaceans/abundance-and-distribution-of-cetaceans-other-than-coastal-bottlenose-dolphins/>

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

Cetacean summary

The status of cetaceans with both the North Sea and Celtic Sea is mixed. While there are some aspects that are in line with the achievement of GES, much of the picture is

21 Kingston, A., Thomas, I. and Northridge, S. (2021) UK Bycatch Monitoring Programme Report for 2019. Sea Mammal Research Unit. Available at [Science Search \(defra.gov.uk\)](https://science.search.defra.gov.uk)

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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 2019 UKMS updated part 1 assessment (available at https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/921262/marine-strategy-part1-october19.pdf), 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, see <https://moat.cefas.co.uk/biodiversity-food-webs-and-marine-protected-areas/seals/>.

A summary of the current status is shown in Table 2. 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 2. Detail from the 2019 UKMS assessment on seals. Taken from Marine Strategy Part One: UK updated assessment and Good Environmental Status (available at <https://www.gov.uk/government/publications/marine-strategy-part-one-uk-updated-assessment-and-good-environmental-status>) and the UKMS Marine Online Assessment Tool (available at <https://moat.cefas.co.uk/>).

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Descriptor	Target	Indicator	North Sea	Celtic Seas
<u>D1; D4: SEALS</u>	The long-term viability of seal populations is not threatened by incidental bycatch.	Marine mammal bycatch (OSPAR)*	-	-
	Population abundance and distribution are consistent with favourable conservation status.	Grey seal abundance and distribution	GES achieved	GES achieved
		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

*for this indicator, an assessment of seal bycatch be found on the OSPAR 2023 quality status report website at <https://oap.ospar.org/en/ospar-assessments/quality-status-reports/qsr-2023/indicator-assessments/marine-mammal-bycatch/>.

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 (available at <https://www.gov.uk/government/publications/marine-strategy-part-one-uk-updated-assessment-and-good-environmental-status>).

Seal bycatch

The 2019 UKMS 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 report²² the authors were fairly

22 7 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. Available at Science Search (defra.gov.uk)

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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 2019²³.

The most recent OSPAR quality status reports assessment on marine mammal bycatch²⁴ (which is likely to feed into the next round of UKMS 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 UKMS 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 UKMS assessment reports that grey seal numbers have continued to increase. Increases in grey seal pup production has slowed since the rapid increase following the end of culling in the 1970s, but still shows a positive trend. This is line with GES. Harbour seal abundance has increased over both the short and long term in the English Channel and along the East Coast of England. But there have been short-term and long-term declines in parts of Scotland. The cause of the declines is not currently known. For more information, see <https://moat.cefas.co.uk/biodiversity-food-webs-and-marine-protected-areas/seals/>.

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.

23 Kingston, A., Thomas, I. and Northridge, S. (2021) UK Bycatch Monitoring Programme Report for 2019. Sea Mammal Research Unit. Available at Science Search (defra.gov.uk)

24 <https://oap.ospar.org/en/ospar-assessments/quality-status-reports/qsr-2023/indicator-assessments/marine-mammal-bycatch/>

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

To meet Good Environmental Status, the high-level objective is that ‘the abundance and demography of marine bird species indicate healthy populations that are not significantly affected by human activities. According to the 2019 UKMS updated part 1 assessment (available at https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/921262/marine-strategy-part1-october19.pdf), 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, see <https://moat.cefas.co.uk/biodiversity-food-webs-and-marine-protected-areas/birds/>

A summary of the current status is shown in Table 3. 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.

Descriptor	Target	Indicator	North Sea	Celtic Seas
<u>D1; D4:</u> <u>BIRDS</u>	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*	-	-
	The population size of species has not declined substantially since 1992 as a result of human activities.	Marine bird abundance	GES not achieved	GES not achieved
	Widespread lack of breeding success in marine birds caused by human activities should occur in no more than three years in six.	Marine bird breeding success/failure	GES not achieved	GES partially achieved
		Kittiwake breeding success	GES achieved	Not assessed

Descriptor	Target	Indicator	North Sea	Celtic Seas
	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
		Invasive mammal presence on island seabird colonies	Not assessed	Not assessed

Table 3. Detail from the 2019 UKMS assessment on birds. Taken from Marine Strategy Part One: UK updated assessment and Good Environmental Status (available at <https://www.gov.uk/government/publications/marine-strategy-part-one-uk-updated-assessment-and-good-environmental-status>) and the UKMS Marine Online Assessment Tool (available at <https://moat.cefas.co.uk/>). *for this indicator, detail of a pilot assessment can be found on the OSPAR 2023 quality status report website at <https://oap.ospar.org/en/ospar-assessments/quality-status-reports/qsr-2023/indicator-assessments/marine-bird-bycatch-pilot/>

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 (available at <https://www.gov.uk/government/publications/marine-strategy-part-one-uk-updated-assessment-and-good-environmental-status>).

Bird populations size and breeding success

In the 2019 UKMS 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, see <https://moat.cefas.co.uk/biodiversity-food-webs-and-marine-protected-areas/birds/>.

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

Bird bycatch

The 2019 UKMS 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 al²⁵ (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 2020²⁶ and Miles et al 2020²⁷). However, these estimates have high uncertainty in part because sample sizes are low and possibly unrepresentative of the fleet.

Bird summary

Seabird populations are currently below the level that is considered to meet GES and the situation is deteriorating. Some declines in breeding success have been linked to prey availability caused by climate change and / or past and present fisheries. Invasive predatory mammals are also known to impact breeding success on island colonies.

25 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. <https://hub.jncc.gov.uk/assets/dbed3ea2-1c2a-40cf-b0f8-437372f1a036>

26 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

27 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).

The impact of bycatch will be included in future assessments and current evidence suggests that some longline and static net fisheries could be having possible population level impacts on certain species.

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

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

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

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

In order to meet Good Environmental Status, the high-level objective for fish is that ‘the abundance and demography of fish indicate healthy populations that are not 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 2019 UKMS updated part 1 assessment (available at https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/921262/marine-strategy-part1-october19.pdf), 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, see <https://moat.cefas.co.uk/biodiversity-food-webs-and-marine-protected-areas/fish/> and <https://moat.cefas.co.uk/pressures-from-human-activities/commercial-fish-and-shellfish/>.

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 4.

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Descriptor	Target	Indicator	North Sea	Celtic Seas
<u>D1; D4: FISH</u>	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
		Proportion of large fish (Large Fish Index).	GES not achieved	GES partially achieved
		Mean maximum length of fish.	GES not achieved	GES not achieved
	Incidental bycatch is below levels which threaten long-term viability and recovery of fish populations.	Under development.	Not assessed	Not assessed
	The population abundance of sensitive species is not decreasing due to anthropogenic activities and long-term viability is ensured.	Recovery in the population abundance of sensitive fish species.	GES not achieved	GES achieved
	For fish species in the Habitats and Birds Directive population abundance and geographic distribution meets established favourable reference values.	UK assessments of listed fish species.	Not assessed	Not assessed
For listed fish species, the area and the quality of the habitat is sufficient.	Not assessed		Not assessed	
<u>D3: COMMERCIAL FISH AND SHELLFISH</u>	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

Descriptor	Target	Indicator	North Sea	Celtic Seas
	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

Table 4. Detail from the 2019 UKMS assessment on fish and commercial fish. Taken from Marine Strategy Part One: UK updated assessment and Good Environmental Status (available at <https://www.gov.uk/government/publications/marine-strategy-part-one-uk-updated-assessment-and-good-environmental-status>) and the UKMS Marine Online Assessment Tool (available at <https://moat.cefas.co.uk/>).

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.2023²⁸). 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, see <https://moat.cefas.co.uk/pressures-from-human-activities/commercial-fish-and-shellfish/>

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

28 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.

(available at <https://www.gov.uk/government/publications/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, see <https://moat.cefas.co.uk/biodiversity-food-webs-and-marine-protected-areas/fish/>

Fish summary

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

D1 & 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 2019 UKMS updated part 1 assessment (available at https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/921262/marine-strategy-part1-october19.pdf), 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, see <https://moat.cefas.co.uk/biodiversity-food-webs-and-marine-protected-areas/benthic-habitats/>

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A summary of the current status is shown in Table 5. 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.

Descriptor	Target	Indicator	North Sea	Celtic Seas
<u>D1; D6: BENTHIC</u>	The physical loss of each seabed habitat type caused by human activities is minimised and where possible reversed.	Physical loss of predicted habitats	GES not achieved	GES not achieved
	The extent of habitat types adversely affected by physical disturbance caused by human activity should be minimised.	Extent of Physical damage indicator to predominant and special habitats	GES not achieved	GES not achieved
		Benthic communities' indicator*	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
		Aggregated Infaunal Quality Index	GES not achieved	GES partially achieved
		Aggregated Saltmarsh Tool	GES not achieved	GES achieved
		Aggregated Rocky Shore Macroalgal Index	GES achieved	GES achieved
		Aggregated Intertidal Seagrass Tool	GES achieved	GES achieved
		Intertidal rock community change indicator (MarClim)	GES status uncertain	GES status uncertain

Table 5. Detail from the 2019 UKMS assessment on benthic habitats. Taken from Marine Strategy Part One: UK updated assessment and Good Environmental Status (available at <https://www.gov.uk/government/publications/marine-strategy-part-one-uk-updated-assessment-and-good-environmental-status>) and the UKMS Marine Online Assessment Tool (available at <https://moat.cefas.co.uk/>). * The benthic communities' indicator (OSPAR BH2) is currently in the pilot stage of development.

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 (available at <https://www.gov.uk/government/publications/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 UKMS 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, see <https://moat.cefas.co.uk/biodiversity-food-webs-and-marine-protected-areas/benthic-habitats/physical-damage/> and <https://oap.ospar.org/en/ospar-assessments/intermediate-assessment-2017/biodiversity-status/habitats/extent-physical-damage-predominant-and-special-habitats/>

Habitat loss

UKMS 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

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has been predicted to have come about from aquaculture, navigational dredging / dredge spoil disposal, recreational activity, and coastal development. For more information, see <https://moat.cefas.co.uk/biodiversity-food-webs-and-marine-protected-areas/benthic-habitats/physical-loss/>. 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 / 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 2019 UKMS updated part 1 assessment (available at https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/921262/marine-strategy-part1-october19.pdf), 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, see <https://moat.cefas.co.uk/biodiversity-food-webs-and-marine-protected-areas/food-webs/>

A summary of the current status is shown in Table 6.

Descriptor	Target	Indicator	North Sea	Celtic Seas
D4: FOOD WEBS	The species composition and	Mean maximum length of fish.	GES not achieved	GES not achieved

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Descriptor	Target	Indicator	North Sea	Celtic Seas
	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
		Abundance and distribution of coastal bottlenose dolphins.	GES achieved	GES status uncertain
		Abundance and distribution of cetaceans other than coastal bottlenose dolphins.	GES partially achieved	GES status uncertain
		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
		Marine bird breeding success/failure.	GES not achieved	GES partially achieved
		Kittiwake breeding success.	GES achieved	Not assessed

Table 6. Detail from the 2019 UKMS assessment on food webs. Taken from Marine Strategy Part One: UK updated assessment and Good Environmental Status (available at <https://www.gov.uk/government/publications/marine-strategy-part-one-uk-updated-assessment-and-good-environmental-status>) and the UKMS Marine Online Assessment Tool (available at <https://moat.cefas.co.uk/>).

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, see <https://moat.cefas.co.uk/biodiversity-food-webs-and-marine-protected-areas/food-webs/>.

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 2019 UKMS updated part 1 assessment (available at https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/921262/marine-strategy-part1-october19.pdf), 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, see <https://moat.cefas.co.uk/pressures-from-human-activities/marine-litter/>. A summary of the current status is shown in Table 7.

Descriptor	Target	Indicator	North Sea	Celtic Seas
D10 Marine Litter	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

Descriptor	Target	Indicator	North Sea	Celtic Seas
	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

Table 7. Detail from the 2019 UKMS assessment on marine litter. Taken from Marine Strategy Part One: UK updated assessment and Good Environmental Status (available at <https://www.gov.uk/government/publications/marine-strategy-part-one-uk-updated-assessment-and-good-environmental-status>) and the UKMS Marine Online Assessment Tool (available at <https://moat.cefas.co.uk/>).

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.’ The 2019 UKMS updated part 1 assessment (available at https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/921262/marine-strategy-part1-october19.pdf), 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, see <https://moat.cefas.co.uk/pressures-from-human-activities/underwater-noise/>. A summary of the current status is shown in Table 8.

Descriptor	Target 2019	Indicator	North Sea	Celtic Seas
D11 Underwater noise	Levels of anthropogenic impulsive sound sources do not exceed levels that adversely affect populations of marine animals.		GES status uncertain	GES status uncertain
	Levels of anthropogenic continuous low-frequency sound do not exceed the levels that adversely affect populations of marine animals	Safe levels of low anthropogenic continuous low frequency sound.	GES status uncertain	GES status uncertain

Table 8. Detail from the 2019 UKMS assessment on underwater noise. Taken from Marine Strategy Part One: UK updated assessment and Good Environmental Status (available at <https://www.gov.uk/government/publications/marine-strategy-part-one-uk-updated-assessment-and-good-environmental-status>) and the UKMS Marine Online Assessment Tool (available at <https://moat.cefas.co.uk/>).

Current impact of fisheries on the baseline condition

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

Summary

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

Appendix C: UK MPA designations

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

Appendix D: Marine Plans – 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 Marine Management Organisation (MMO) is responsible for preparing [marine plans in England](#), and published the [North East](#), [North West](#), [South West](#), [South East](#) marine plans by 2021. 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).

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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

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

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

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

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

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

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

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

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

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

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

Precautionary approach to fisheries management: Defined in section 1(10) of the Fisheries Act 2020 as an approach in which the absence of sufficient scientific information is not used to justify postponing or failing to take management measures to

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conserve target species, associated or dependent species, non-target species or their environment.

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

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

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

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

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

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

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

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

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

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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.

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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*

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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.</i> We note the word <i>review</i> . FMPs are intended to be one of, if not the key mechanisms to <i>deliver</i> 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 / Comment section		
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.

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Point #	How point was considered
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.
<p>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.</p>	<p>Point noted. We consider including this information in the ER.</p>

JNCC Response



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

<https://jncc.gov.uk/>

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

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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
<p>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)?</p>	<p>Welsh Government have sought views from the Cadw.</p>
<p>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.</p>	<p>Clarification will be provided in the Environmental Reports (ER).</p>

Point #	How point was considered
<p>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>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>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.