Department
for Environment
Food & Rural Affairs

Proposed Southern North Sea and Eastern Channel Mixed Flatfish Fisheries Management Plan

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Version: public consultation

Contents

Executive Summary

The Southern North Sea and Eastern Channel Mixed Flatfish Fisheries Management Plan (FMP) is one of 43 FMPs proposed around the UK set out in the Joint Fisheries Statement (JFS). The plan has been developed by the Department for Environment, Food and Rural Affairs (Defra), in collaboration with scientists, regulators, Statutory Nature Conservation Bodies (SNCBs) and stakeholders to deliver long-term sustainable management of flatfish fisheries in the International Council for the Exploration of the Sea (ICES) areas 4b, 4c and 7d in English waters over the next six years, in line with the objectives of the Fisheries Act 2020 and as required by the Joint Fisheries Statement (JFS https://www.gov.uk/government/publications/joint-fisheries-statement-jfs)

What is an FMP?

Under the JFS FMPs will contribute to delivering the Sustainability and Precautionary Objectives of the Fisheries Act 2020. An FMP looks to build on the Fisheries Act 2020 Objectives through its vision of achieving environmental, social, and economic sustainability, in the fishery for the benefit of coastal communities and wider society. An FMP sets out a vision and objectives for the fisheries to deliver the above.

Why an FMP for flatfish?

Flatfish fisheries in the Southern North Sea and Eastern Channel are a commercially important group of species in the English Waters. They contribute socially and economically to the coastal communities. However, there is currently a variety of evidence levels across all the stocks and a need to ensure that the stocks are continuously fished within sustainable limits. This FMP will lay out the current flatfish management, the evidence available and sets the direction to ensure the long-term sustainability of the fishery, whilst contributing to environmental, social and economic sustainability.

Vision and Objectives

This FMP sets out objectives to deliver sustainable fishing of flatfish, for which a number of approaches to management have been proposed. The plan also addresses the wider environmental impacts of the fishery on the marine environment and sets out plans to mitigate impacts. In summary, this FMP collates existing management measures for demersal non-quota species plus collated science and evidence, and highlights where gaps exist. The FMP proposes precautionary management measures in the short-term whilst more evidence is gathered, to protect the stocks that are potentially not being fished sustainably at present.

A summary of the objectives can be seen below, each objective has a summary of actions in order to achieve the objective.

Evidence:

- **Objective 1.1:** Develop an improved evidence base for quota and non-quota flatfish in the Southern North Sea and Eastern Channel mixed flatfish fishery.

Sustainable Fisheries:

- **Objective 2.1:** Deliver effective management of the harvesting of flatfish stocks within the Southern North Sea and Eastern Channel area.
- **Objective 2.2:** To support wider environmental sustainability by understanding how the fishing activities within this FMP impact on the wider marine environment and identify options to minimise negative impacts.

Social and Economic:

- **Objective 3.1:** To better understand the social and economic value of the fisheries to the coastal communities within the FMP area.

Climate Change:

- **Objective 4.1:** Explore options for mitigating risk onto the fishery from the changing climatic conditions.

Actions

During this first iteration of the FMP the following management interventions have been recommended. These have been derived from stakeholder engagement and evidence provided by ALBs.

MCRS: lemon sole, turbot, and brill were highlighted as key FMP species requiring protection during the juvenile life stages of their development. Evidence underpinning the minimum size was gathered and expert advice sought on whether these would meet the intended outcome of protecting juvenile individuals up to the size of maturity and reproduction. The recommendation will be to first align with the IFCA measures, then look to adjust limits based on the evidence gathered in order to meet sustainability requirements for the fishery and the species.

Commissioning of data collation to better understand the status of Atlantic halibut: This FMP recommends that such work could be undertaken by the relevant ICES working group to better identify the stock unit in the North Atlantic, and once identified, work should be commissioned to develop a stock assessment.

Research and consider the re-opening of a survey for common sole in the Eastern channel, to address the evidence gaps around recruitment.

The review of the joint Total Allowable Catch (TAC) management of lemon sole and witch, and turbot and brill, as joint TACs are not optimum for sustainable management of either species as it allows for the overexploitation of a stock, above the recommended MSY advice provided by ICES.

The review of the TAC management area of lemon sole, witch and brill as these do not match the ICES advice area for these species (the TAC management area for turbot matches the current ICES advice area). This again are not optimum for sustainable management as this can lead to overexploitation of the stocks.

This FMP is a first iteration and will be built upon during a formal review process, which will be at a minimum every six years.

Acknowledgements

Defra would like to acknowledge the advice, evidence and support that has been provided by the Association of IFCAs, Cefas, EA, JNCC, MMO, NE, NRW, Seafish and our stakeholders, throughout the development of this FMP.

Governance and policy

This FMP sets out the policies and measures needed to manage the fishing activities within English waters of ICES Division 4.b (Central North Sea), Division 4.c (Southern North Sea), and Division 7.d (Eastern English Channel) flatfish fishery. The Fisheries Act 2020 places an expectation on the Fisheries Policy Authorities in the UK to prepare and publish FMPs.

The policies and measures contained within this plan have been prepared and published by Defra in consultation with other Fisheries Policy Authorities in accordance with the requirement of section 6(5) of the Fisheries Act 2020.

Long-Term Vision

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

To deliver this, an evidence-based approach will be used for the introduction of any management measures implemented, using the best available evidence. When there is not sufficient evidence available, the precautionary approach will be applied. The plan will also identify any evidence gaps and detail how these will be addressed. The plan will be reviewed and revised every 6 years unless a threshold within the plan triggers an earlier review or if Defra considers it appropriate to review it at any point.

Key Policy Linkages

The objectives set out in this FMP link with a number of policy areas and UK legislation.

This FMP directly links to the following policy areas and UK legislation:

- Joint Fisheries Statement
- Trade and Cooperation Agreement
- UK Marine Policy Statement
- Marine Spatial Prioritisation Programme (MSPri)
- Defra 25 Year Environment Plan
- Defra Environmental Improvement Plan 2023
- Statutory Instrument 2004 No. 1633: The Environmental Assessment of Plans and Programmes Regulations (2004)

- Fisheries Framework Memorandum of Understanding
- The Marine Strategy Regulations 2010, Good Environmental Status and UK Marine Strategy
- Project UK Lemon sole Fisheries Improvement Project
- The Environmental Targets (Biodiversity) (England) Regulations 2023
- Environment Act (2021)

A number of international commitments exist including:

- The Convention on Biological Diversity
- The UNECE Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters (The 'Aarhus convention')
- The United Nations Convention on the Law of the Sea
- The Convention for the Protection of the Marine Environment of the North-East Atlantic (the 'OSPAR Convention')
- United Nation Sustainable Development Goals
- United Nation Fish Stocks Agreement
- UK-EU Trade and Cooperation Agreement
- EU Multi-Annual Plan for North Sea
- EU Multi-Annual Plan for Western Waters

Actions dictated by these tend to be included in the statutory domestic policy above.

The remit of this FMP overlaps with seven of the English marine plans. These include the East Marine Plans (inshore and offshore), South East Inshore Marine Plan and South Marine Plans (inshore and offshore). Further details on these Marine Plans can be found on GOV.UK. FMPs are required to have regard to the relevant marine plans and marine plan policies as laid out in Section 58(3) of the Marine and Coastal Access Act (MACAA). Section 58(3) of MACAA refers to decisions which are not enforcement or authorisation based, but which relate to the exercise of any function capable of affecting the whole or any part of the United Kingdom (UK) marine area. JFS section 4.2.10.3 also requests consideration of the relationship between marine spatial planning and fisheries management plans, and how these policies can work in a joined-up way. For future iterations of the FMP where management measures may be included, a full Marine Plan Compatibility Assessment will be carried which will scope-in relevant marine plan policies and describe how they have been taken into consideration.

The issue of increasing spatial pressures and the challenges it can pose to fisheries, including where relevant any social, economic, and environmental implications resulting from possible displacement need to be considered. The Government has established a Marine Spatial Prioritisation programme to help support a more strategic approach to managing future pressures in English seas. The programme will engage with stakeholders and evaluate existing and emerging evidence to understand future demands and determine the best way of managing them. Outputs from the programme will inform the

implementation phase and subsequent reviews of the FMP, as well as our future approach to marine planning.

Description of the fishery and stocks

Stocks

As laid out in the JFS, the Southern North Sea and Eastern Channel mixed flatfish FMP covers plaice (*Pleuronectes platessa*), common sole (S*olea solea*), turbot (S*cophthalmus maximus*), brill (S*cophthalmus rhombus*), lemon sole (M*icrostomus kitt*), witch (G*lyptocephalus cynoglossus*), dab (L*imanda limanda*), flounder (P*latichthys flesus*) and halibut (H*ippoglossus hippoglossus*).

Geographical area

The stocks in the Southern North Sea occur across ICES Divisions 4.b, 4.c and 7.d. This FMP only applies to fishing activity within English waters.

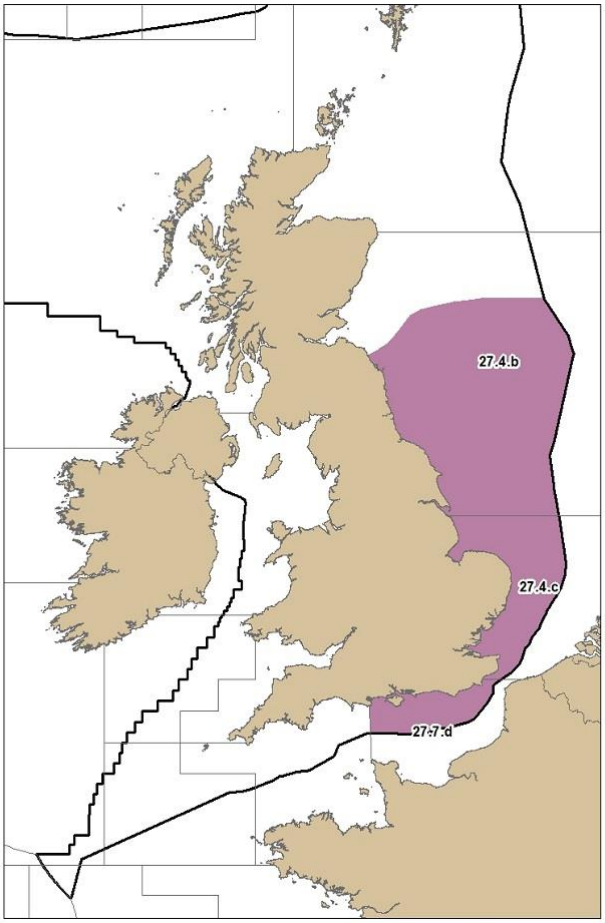

Figure 1: Map showing the geographical area covered by this FMP. This FMP only applies to fishing activity within English waters of ICES Divisions 4.b, 4.c and 7.d.

FMP Overlaps

It is important that there is consistency across the FMPs, particularly where FMP's overlap in the stocks and areas that they cover. This is particularly important for shared stocks, or fisheries which impact on other FMP species catches. For instance, the Channel Non-Quota Demersal FMP overlaps directly with this FMP for the management of lemon sole, turbot and brill between 7d and 7e, and therefore a consistent message will need to be with regards to any management implications in overlapping FMPs.

Species biology and distribution

The nine considered fish within this FMP are all flatfish, these are a species characteristic of a flat body where both eyes lie on one side of the head. Within the FMP area, the distribution of the nine species varies. Halibut and witch are mainly concentrated in the northern parts of the North Sea. Dab, lemon sole, plaice, turbot and brill are all commonly found within the eastern English Channel, as well as the entire North Sea. Flounder and

common sole are mainly found within the eastern English Channel and the southern North Sea. Further detail, at an individual level, on the biology, ecology and distribution of the species can be found within Annex 1 Evidence Statement.

Stock assessment units

Of the nine species under scope of this FMP, eight are assessed by ICES. Of these assessments, witch, turbot, common sole (North Sea and Eastern Channel) and plaice (North Sea and Eastern Channel) are category 1 advice. Lemon sole, flounder, dab and brill are category 3.

Atlantic halibut is currently not assessed by ICES.

Details on the stock assessment methodology, data collection, stock status and evidence gaps are found within Annex 1 and Annex 2.

Fishery Overview

The data included in this following section has been supplied by the Marine Management Organisation (MMO) and Seafish and is discussed in depth within Annex 1.

Flatfish are a commercially important group of species in the UK. In 2021, the total landed weight of flatfish, in the scope of this FMP, was 1,984 tonnes (liveweight) with a first sale value of £5.5m. Harlingen in the Netherlands was the port with the greatest value of landings of flatfish species with the scope of this FMP, with a landed value of £999,379 in 2021. The next most valuable port for flatfish landings was Shoreham-by-Sea, with landed value in 2021 of £482,813, less than half the value of Harlingen.

Flatfish landings per the spatial distribution can be grouped as the below:

- Northern North Sea – witch and halibut
- North Sea and eastern Channel – dab, lemon sole, plaice, turbot, brill
- Southern North Sea and eastern Channel – common sole and flounder

For UK vessels, dab, Atlantic halibut and witch have shown fluctuating landings between 2016 and 2022. For these species, landings increase overall or slightly decrease, however it is important to caveat that halibut and witch have low landings. In contrast, the remaining six species show a gradual decrease in landings, which is expected with the reduction in UK vessels landing flatfish overall in FMP area. These vessels have declined from 745 vessels in 2016 to 558 vessels in 2021.

In general, overall, the EU vessels land considerably more of each species within the FMP area (apart from halibut and witch). Landings liveweight show a similar trend to UK vessels, with fluctuating landings tonnage for dab, halibut and witch, and a more declining

trend for brill, flounder, lemon sole, plaice, common sole and turbot. Across both UK and EU vessels plaice and common sole are the highest landed by vessels.

The most important gear types within the flatfish fishery are otter/demersal trawls, beam trawls and drift and fixed nets. Halibut and witch liveweight landings are dominated by otter trawls (>92%). The majority of dab, flounder, lemon sole, plaice, and turbot liveweight landings are also by otter trawls followed by beam trawls and drift and fixed nets. The majority of common sole landings are by drift and fixed nets, followed by otter and beam trawls. Brill is equally landed by otter and beam trawls followed by drift and fixed nets.

Key Recreational fisheries

Not all flatfish species within scope of this FMP interact with recreational fisheries. Lemon sole and witch typically occur on offshore grounds and have a relatively small mouth, and feed primarily on small, benthic invertebrates. Consequently, both are expected to be a limited interest to anglers and have limited or no catches reported in the annual recreational fisheries monitoring programme.

Halibut is taken in recreational fisheries elsewhere in its geographic range; however, it is only occasionally found in the central and southern North Sea is rarely caught by recreational fisheries in the FMP area. Vessel-based recreational angling would be expected to interact with brill. However, only a limited number of brill were reported during the annual recreational fisheries monitoring programme. Further detail can be found within Annex 1.

Marine Protected Areas

There are several designated protected areas within scope of this FMP. A map of England’s marine protected areas (MPA) is given in Figure 2. Marine Management Organisation(MMO) and the Inshore Fisheries and Conservation Authorities (IFCAs) introduce byelaws to restrict any fishing that might damage MPAs, working with advice from the Statutory Nature Conservation Bodies (SNCBs) Natural England and Joint Nature Conservation Committee (JNCC). It is an evidence-based process designed to identify what fishing activities could threaten habitats and species found in MPAs and need restricting, but not restrict fishing unnecessarily. Stakeholders are consulted on proposed measures and given the chance to provide evidence to inform IFCA/MMO decisions. Current management measures already in place are detailed on the MMO and Association of IFCAs websites.

Whilst the management of fisheries activity occurring within MPAs is addressed through separate work undertaken by the MMO and Inshore Fisheries and Conservation Authorities (IFCAs), there remains the potential for fishing activity occurring outside of an MPA to have impacts on the features protected within an MPA. This can happen when

either the pressures exerted by fishing activity can impact protected features beyond its spatial footprint, or when the feature of an MPA is mobile and travels outside the site.

The SNCBs have screened risks posed by fisheries occurring outside MPAs. These are presented in detail within Section 7 ‘Managing Environmental Considerations’ section in this FMP and Annex 1 – Evidence Statement.

Highly Protected Marine Areas (HPMAs) are areas of the sea (including the shoreline) that allow high levels of protection and full recovery of marine ecosystems. HPMAs will allow nature to fully recover to a more natural state by prohibiting extractive, destructive and depositional activities such as dredging, fishing and anchoring to allow the ecosystem to thrive.

North East of Farnes Deep (NEFD) was selected for designation as a pilot HPMA (alongside modified versions of Allonby Bay and Dolphin Head) following a 12-week consultation and analysis of responses and due to the ecological importance of nature recovery in the sites, which falls within the FMP area. The sites will be designated before 6th July 2023, and Defra are currently exploring options for additional sites. Future options will also be subject to consultation.

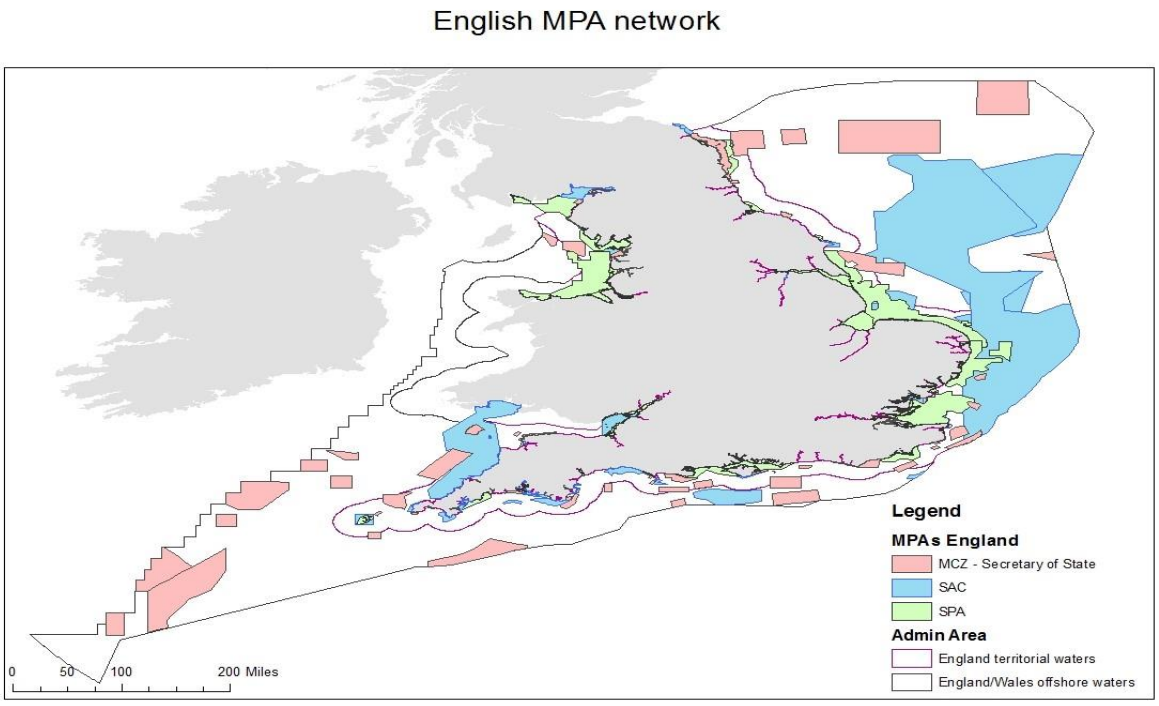

Figure 2: The English Marine Protected Areas network that covers the Southern North Sea and Eastern Channel.

Current fishery management

Aims of fisheries management

The overarching aim of UK fisheries management is to ensure stocks remain healthy preserving the long-term sustainable use of fisheries resources, whilst minimising any potential negative environmental, social or economic impacts. In English waters fisheries management is informed by the Defra 25 Year Environment Plan and 2023 Environmental Improvement Plan and must comply with relevant legislation such as The Fisheries Act 2020, The Marine and Coastal Access Act 2009, and the UK Marine Strategy (UKMS). Driven by the government's aim for clean, healthy, safe, productive, and biologically diverse oceans, the objectives of fisheries management, as reflected and supported by this FMP is to contribute to achieving the objective of protecting the marine environment for current and future generations and to ensuring marine businesses are supporting sustainable growth in the economy.

Current management measures

The stocks within scope of this FMP are a mixture of quota and non-quota, meaning there is a variety of management approaches in place. Plaice and common sole have a quota across the entire FMP area. Turbot, brill, lemon sole and witch only have a quota set for fisheries in ICES Divisions 4.b and 4.c. These stocks are therefore managed by TAC and the quota system. Flounder, dab and halibut are non-quota stocks across the entire FMP area. Turbot, brill, lemon sole and witch are considered anon-quota stock only in ICES Division 7.d.

Article 495(1)(e) of the EU-UK Trade and Cooperation Agreement (TCA) defines non-quota species (NQS) as stocks which are not managed through Total Allowable Catches (TACs). The TCA sets out access provisions for non-quota species (Annex 38) to fish NQS in each other's waters 'at a level that at least equates to the average tonnage fished by that Party in the waters of the other Party during the period 2012-2016'.

There are no management plans in place for the stocks included in this FMP. There are no technical measures specifically designed for the stocks within this FMP except for common sole and plaice. However, directed fisheries for flatfish in areas 4b and 4c should have a mesh size of at least 90 mm for fixed nets. Directed fisheries for flatfish in area 7d should have a mesh size of at least 100 mm for fixed nets.

The landing obligation applies to all sizes of fish managed by quota limits, including catches below Minimum Conservation Reference Size (MCRS), unless an exemption is in place. As the landing obligation applies to all sizes of fish, it encourages actions to be taken to minimise catches of undersized fish. Guidance on the technical conservation, landing obligation rules and regulations for each year are listed on GOV.UK by the Marine

Management Organisation. This will include how the rules are applied, selling undersize fish, reporting requirements, quota management and how exemptions to the landing obligation.

For further detail on the Technical Conservation and Landing Obligation rules and regulations for each year, see the link below:

https://www.gov.uk/government/collections/fisheries-management-landing-obligation

Plaice and common sole technical measures

Directed fishing for plaice and common sole in the North Sea (south of 57° 30′ N) using otter trawls, and seines should have a mesh size of at least 100 mm, and a square mesh panel of at least 90 mm shall also be fitted. 80mm is permitted for common sole in 4c.

Directed fishing for common sole in the North Sea (Divisions 4.b and 4.c) using beam trawls should have a mesh size of at least 80 mm, and a headline panel with a mesh size of at least 180 mm fitted in the upper half. Directed fishing for common sole in Subarea 7 using beam trawls should also have a mesh size of at least 80 mm, and a headline panel with a mesh size of at least 180 mm shall be fitted in the upper half of the anterior part of the net. There is a Minimum Conservation Reference Size (MCRS) of 24 cm for common sole and 27cm for plaice.

National monitoring control and enforcement

Control of fisheries exists with the aim of preserving the long-term sustainable use of fisheries resources whilst minimising any negative environmental, social or economic impacts. In English waters this is managed in line with the Defra 25 Year Environment Plan, 2023 Environmental Improvement Plan and associated legislation such as The Fisheries Act 2020, The Marine and Coastal Access Act 2009, and the UK Marine Strategy. Driven by government's aim for a clean, healthy, safe, productive and biologically diverse ocean and seas, the Marine Management Organisation's (MMO) purpose, as the regulatory body in England, is to protect and enhance our precious marine environment and support economic growth by enabling sustainable marine activities and development. The objectives of fisheries control contribute to achieving the objective of protecting the marine environment for current and future generations and to ensuring marine businesses are supporting sustainable growth in the economy. The MMO takes a blended approach to the monitoring and management of fisheries in England. This includes a combination of physical inspections of fishing vessels both at sea and in port, as well as physical inspections of both merchants and transporters of first sale fisheries products. MMO also undertake a wide range of desk-based monitoring of fisheries activities which includes (but is not limited to) the use of vessel monitoring systems (VMS), the monitoring of quota uptake and compliance with fisheries regulations, through data supplied by the fishing industry as well as the assessment of scientific evidence. The MMO have the ability to add

additional controls to fishery activity through the implementation of vessel licence conditions, fishery closures as well as introducing byelaws which can be either voluntary or mandatory. See MMOs compliance and enforcement strategy:

https://www.gov.uk/government/publications/compliance-and-enforcement-strategy

https://www.gov.uk/government/publications/compliance-and-enforcementstrategy/compliance-and-enforcement-strategy

Codes of practice regulations and rules enforced

Regulations are focused on reducing the main risks for non-compliance in the fishing industry which relate to non or inaccurate reporting, the retention of prohibited or below minimum conservation reference size (MCRS) organisms, the use of illegal fishing gear and fishing in areas where this activity is restricted. To limit these risks the MMO and local Inshore Fisheries Conservation Authorities (IFCA) conduct at sea and shoreside patrols whereby retained catch and fishing gear is inspected for compliance. The use of VMS and, in the case of restricted fishing areas, enhanced VMS, can be used as a tool to monitor and encourage higher compliance.

In addition, the MMO apply a fishing vessel licensing regime along with control measures such as the use of logbooks and/or catch record data and sales notes from merchants in order to monitor fishing activity and compliance with national and local regulations.

Regional Inshore Fisheries Management

In addition to the MMO's management and monitoring responsibilities, fisheries within the 6 nautical mile limit of the English Coast are managed by regional Inshore Fisheries and Conservation Authorities (IFCAs). IFCAs have a duty to sustainably manage the inshore marine environment and have general duties in relation to conservation and biodiversity. IFCAs are responsible for producing byelaws within their districts to ensure effective management of marine habitats in the inshore area.

In England, the current byelaws put in place by IFCAs which may manage, or contribute to the management of, flatfish fisheries and their environment are listed on the IFCA websites that are listed below which fall within scope of the FMP area:

- Northumberland - https://nifca.gov.uk/
- Northern Eastern - https://www.ne-ifca.gov.uk/
- Eastern - https://www.eastern-ifca.gov.uk/
- Kent and Essex - https://www.kentandessex-ifca.gov.uk/
- Sussex – https://www.sussex-ifca.gov.uk/
- Southern - https://www.southern-ifca.gov.uk/

Fishery management objectives

This FMP sets out 5 objectives across 4 themes, which are: evidence, sustainable fisheries (fisheries management and wider environment), social and economic, and climate change. A summary of the objectives within these themes can be seen below. Within each objective is a summary of actions that are needed in order for the FMP to achieve the objective.

Evidence:

- **Objective 1.1:** Develop an improved evidence base for quota and non-quota flatfish in the Southern North Sea and Eastern Channel mixed flatfish fishery.

Sustainable Fisheries:

- **Objective 2.1:** Deliver effective management of the harvesting of flatfish stocks within the Southern North Sea and Eastern Channel area.
- **Objective 2.2:** To support wider environmental sustainability by understanding how the fishing activities within this FMP impact on the wider marine environment and identify options to minimise negative impacts.

Social and Economic:

- **Objective 3.1:** To better understand the social and economic value of the fisheries to the coastal communities within the FMP area.

Climate Change:

- **Objective 4.1:** Explore options for mitigating risk onto the fishery from the changing climatic conditions.

Evidence

The overall evidence objective for this FMP is to ‘Develop an improved evidence base for quota and non-quota in this FMP’ (ICES areas 4b, 4c and 7d). This objective underpins the overall development of the FMP, its vision and objectives. As such, it also forms a core component of the evidence statement and future research plan.

Objective 1.1: Develop an improved evidence base for quota and non-quota in the Southern North Sea and Eastern Channel mixed flatfish FMP.

Rationale: The rationale for having the overall evidence theme and objective is that having robust data available allows for evidence-based decisions to be made in fisheries management and move away from precautionary management approaches. This will be

central to achieving the sustainability and scientific objectives outlined in the Fisheries Act 2020.

How this could be achieved:

Short term (1-2 years):

- Establish what evidence is currently available in the evidence statement and identify what additional evidence is required to meet the objectives of the FMP within the evidence plan (See Annex 1)
- Establish what are the current and upcoming opportunities are to improve the evidence base (see Annex 2).
- Encourage and support the establishment of reference points for stocks in the Southern North Sea and Eastern Channel mixed flatfish FMP, where these do not currently exist or need improvement (See Annex 1 for more details).

Sustainable Fisheries

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

Therefore, the Southern North Sea and Eastern Channel mixed flatfish FMP has one objective for stock level management focusing on the FMP species (deliver effective management of the stocks within the Southern North Sea and Eastern Channel mixed flatfish FMP) and one objective for wider environmental management (to support and deliver wider environment sustainability by understanding how the fishing activities within this FMP impact on the wider marine environment and identify options to minimise negative impacts).

Objective 2.1: Deliver effective management of the stocks within the Southern North Sea and Eastern Channel mixed flatfish FMP

Rationale: To deliver sustainable stock levels across both quota and non-quota stocks, to be able to restore or maintain fisheries at sustainable levels. This objective will develop a harvest strategy and seek to improve datasets to allow for assessment of the stock's maximum sustainable yield (MSY). Better data and TAC setting by aligning with an MSY approach or use of the mixed fisheries scenarios provided by ICES will help to ensure that the harvesting of flatfish and fishing pressure is kept to sustainable levels. This is central

to achieving the sustainability and precautionary objectives outlined in the Fisheries Act 2020.

How this could be achieved:

Short-term (1-2 years):

- For all stocks that are data poor and consequentially unable to be assessed for stock status, and MSY, seek to improve datasets to allow for assessment
- Follow HSS guidance to progress towards sustainability MSY to implement a precautionary approach before robust data is available
- The UK government will seek to use this FMP to increase the number of stocks fished at MSY, consistent with the best available scientific advice and taking into account best available evidence on the effects of fishing activity

Long-term (3-5 years):

- Deliver a mixed and multi-species management approach where applicable for the fisheries within the Southern North Sea and Eastern Channel mixed flatfish FMP

Objective 2.2: To support and deliver wider environment sustainability by understanding how the fishing activities within this FMP impact on the wider marine environment and identify options to minimise negative impacts.

Rationale: A thriving fishing industry is underpinned by a healthy marine environment (JFS 2022), and the Government is committed to an ecosystem approach to fisheries management which will account for, and seek to minimise, impacts on non-commercial species and the marine environment generally (25 Year Environment Plan, JFS 2022). The ecosystem objective of the Fisheries Act 2020 further articulates that an ecosystem-based approach to fisheries management is an approach which: (a) ensures that the collective pressure of human activities is kept within levels compatible with the achievement of good environmental status (within the meaning of the Marine Strategy Regulations 2010 (S.I. 2010/1627)); and (b) which does not compromise the capacity of marine ecosystems to respond to human-induced changes.

Evidence from ICES also suggests high discards of dab and plaice. By better understanding the impact of fishing gear interactions within the marine environment and working to minimise any of the negative impacts of fishing on non-target species, marine habitats and ecosystems. This will also contribute to the achievement of domestic and international targets. This rationale is central to achieving the sustainability, ecosystem, climate change and bycatch objectives outline in the Fisheries Act 2020.

Full details on the mitigations can be found in the ‘Managing Environmental Considerations’ section of this FMP.

How this could be achieved:

Long-term (3-5 years):

- To investigate and understand the key issues in protected species bycatch within the fishery and develop appropriate mitigation
- To investigate and understand the key issues in seabed integrity within the fishery and develop appropriate mitigation
- Work to understand and minimise bycatch of unwanted stocks and minimise discarding
- Incentive participation in scientific trails to improve data collection on discards
- Explore the impacts from the flatfish fishery on the marine environment from marine litter and appropriate mitigations to address this

Social and Economic

The UK government holds an ambition to enable fisheries to continue to deliver social and economic benefit to coastal communities to benefit present and future generations. The UK government also continues to further its understanding of the social and cultural benefits of fishing to fishers and coastal communities. Therefore, the FMP has established an overarching objective which fall under the social and economic benefits of the fishery. The objective is to 'To better understand and optimise the social and economic value of the fisheries to the coastal communities within the FMP area'. This objective will consider social and economic matters holistically in order to understand the social and economic value of the fisheries and optimise any benefits identified to ensure that the industry continues to operate for future generations. The current available social and economic evidence can be found within Annex 1.

Objective 3.1: To better understand and effectively manage the social and economic value of the fisheries to the coastal communities within the FMP area.

Rationale: Flatfish is a highly valuable fishery and if managed appropriately, flatfish fishing therefore has the potential to generate substantial social and economic benefits for local coastal communities. This ambition is driven by the Fisheries Act 2020 and is central to achieving the sustainability, equal access and national benefits objectives.

How this could be achieved:

Short-term (1-2 years):

- Identify the communities reliant upon the fisheries within this FMP
- Identify the social and economic data available on the Southern North Sea and Eastern Channel mixed flatfish fisheries (4b, 4c and 7d). This might include the market for flatfish after it is landed on shore. This will identify the gaps in the data
- Encourage and support industry in any initiatives to promote the consumption and value of stocks and improve economic efficiency within the FMP

- Seek ways to integrate and develop social and economic indicators to monitor social and economic impacts and how this information could be gathered

Long-term (3-5 years):

- Adapt the FMP when new or improved methods are developed to gather social and economic data in order to fill any evidence gaps, combined with evidence that any new measures would have a desired socio-economic effect
- Seek to identify and integrate upcoming new/novel ways of social and economic data collation to feed into the FMP data gaps or to improve data quality

Climate Change

The changing climatic conditions hold the potential to have an effect on the fishing industry and the wider environment. The anthropogenic emissions of CO_2 associated with fossil fuel usage drives climate change, leading to increased sea surface temperature, ocean acidification, and fluctuations within large-scale weather and climate patterns that can impact ecological baselines. Under the Fisheries Act 2020 climate objective, and Net Zero ambitions, the UK government is committed to reducing CO_2 emissions within the fishing fleet, and to improving resilience to climate-driven impacts across the sector. By mitigating and reducing the impacts from changing climatic conditions, this will contribute to climate change, ecosystem and national benefit objectives outlined in the Fisheries Act 2020. Even though delivery of mitigation strategies for climate change is not within scope of this first iteration of this FMP, it holds a longer-term objective which is set out below.

Objective 4.1: Explore options for adapting and mitigating risk onto the fishery and wider environment from the changing climatic conditions.

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

How this could be achieved:

Long-term (3-5 years):

- Encourage industry participation in initiatives to reduce CO2 emissions
- Work to understand and address impacts of changing climate conditions as highlighted in the climate change committee's climate risk independent assessment, through mechanisms such as the Marine Climate Change Impacts Partnership
- Support industry's adaptation to the impacts of climate change
- Adapt and change this FMP as research into climate change develops and new methods to address climatic challenges arise

Future Fishery Management Strategy

Considerations when developing management approaches

There are a number of overarching principles which should underpin management approaches and measures, as well as potential issues to explore and avoid where possible. These are set out below, and consist of principles included as part of the overarching FMP objectives, Fisheries Act 2020 objectives and the JFS

- Management should be based on the best available scientific evidence; however, when sufficient evidence is not available, a precautionary approach can be implemented
- Management should ensure the adverse impacts of fishing activity on ecosystem functioning, marine ecosystems resilience or the impacts of environmental threats such as climate change, are minimised as stated in the 2023 Environmental Improvement Plan
- The UK government will apply the Fisheries Act 2020 objectives to both domestic and international work and recognise obligations set out in both domestic and international policy and legislation
- Management should support the delivery of UK Marine Strategy targets to restore and maintain populations of harvested species to at least healthy levels which can produce MSY and maintain stocks at or above levels that sustain long-term exploitation of stocks at fishing MSY
- The UK government advocates an approach towards TAC setting which is founded on the best available scientific advice and that will maintain or rebuild sustainable fish stocks and fisheries and support the fishing industry. For a number of target stocks, a further key consideration when setting TACs is their interaction with other stocks caught in the same mixed fishery. Therefore, we advocate the need to minimise unwanted bycatch and maintain stocks at sustainable levels

Further details on the UK government's principles to fisheries management can be found in Section 6 of the Fisheries Act 2020 and the JFS

Harvest Strategy

Where MSY indicators are provided by ICES with an advised total catch, UK government should aim to set a TAC for quota species in line with the ICES MSY advice or a suitable proxy.

Some stocks within this FMP are shared with other coastal states and their management, and TACs are subject to international fisheries negotiations. In line with the Fisheries Act 2020 and the JFS, this FMP will put forward and encourage the use of the nine principles of international fisheries negotiations, as laid out in section 4.2.1.14 in the JFS. One of these principles is that the UK government will seek to increase the overall number of stocks fished at MSY, consistent with the best available scientific advice and taking into account best available evidence on the effects of fishing activity. Other principles include references to the UK's wider international obligations for the conservation and sustainable use of the marine environment, and the need to apply an ecosystem-based approach.

Further considerations should be made on a stock-by-stock basis to consider opportunities to minimise the negative impacts of fishing on non-target species. Mixed fisheries advice provided by ICES should also be considered on a stock-by-stock basis.

As most fish stocks are jointly managed with other neighbouring coastal States, international fisheries negotiations are one of the key mechanisms for achieving our objectives relating to sustainable TAC setting. Noting the importance of these negotiations, the UK government should work closely with neighbouring coastal States to find agreements which lead to the sustainable exploitation and management of fisheries.

In line with the Fisheries Act 2020, sustainable fishing means taking into consideration environmental, social and economic factors, and ensuring these are appropriately balanced along with the ICES advice when setting TAC levels.

Any fisheries management intervention will result in a range of social, economic, and environmental impacts. When implementing a new fisheries management measure, there is a statutory requirement to estimate the anticipated wider national benefits (for example improved stock status of target species) as well as likely impacts on stakeholders and means of mitigating negative impacts. Broader impacts on local communities, as well as economic, social and human rights impacts will be set out in associated impact assessments that will be required as part of the development of measures.

Plaice

Plaice is shared with other coastal States. It is managed trilaterally with the EU and Norway in the North Sea, and bilaterally with the EU in the Eastern Channel. Management decisions should be based on the available scientific advice and the dynamics of the fishery the stock is caught within. The UK government considers that the current TAC management and the suite of technical measures (see section 'Plaice and sole technical

measures') already in place for this stock are working effectively. This is seen reflected in the health state of the stock. TAC management carried out should follow the principles set out in section 'Harvest Strategy' above. The UK government will continue to promote a science- and evidence-based approach to managing plaice.

Common sole

Common sole in areas 4b, 4c and 7d are managed bilaterally with the EU through annual negotiations. The stock already has a range of measures in place which can be seen in more detail in section 'Plaice and sole technical measures'. The UK government considers the current management and measures in place to be working effectively for the stock. TAC management carried out should continue to follow the principles set out in section 'Harvest Strategy' above.

The UK government promotes a science- and evidence-based approach to management. We acknowledge that survey work for common sole in 7d was disrupted due to Covid-19, and that stakeholders have called for a survey to be commissioned to help with the uncertainties around recruitment. The UK government will therefore consider if it is appropriate and necessary to commission and re-open the survey for common sole in 7d.

Turbot

Turbot is currently jointly managed in a TAC with brill for Subarea 4 in the EU annual bilateral negotiations. Article 504 of the TCA requires assessment to be carried out on the alignment of management areas. Further details on the proposed amendments to the management of this stock can be seen in section 'Realignment of TAC management areas'. In addition, this FMP proposes that research is conducted into technical measures being proposed in section 'Technical Measures' as a precautionary measure in English waters of the Eastern English Channel. In the meantime, while the two workstreams are being developed, this stock should be managed in line with the principles set out in section 'Harvest Strategy'.

Brill

Brill is currently jointly managed in a TAC with turbot for Subarea 4 in the EU annual bilateral negotiations. Article 504 of the TCA requires assessment to be carried out on the alignment of management areas Further details on the proposed amendments to the management of this stock can be seen in section 'Realignment of TAC management areas' In addition, this FMP proposes that research is conducted into technical measures being proposed in section 'Technical Measures' as precautionary measure in English waters of the Eastern English Channel. In the meantime, while these two workstreams are being developed, this stock should be managed in line with the principles set out in section 'Harvest Strategy'.

Lemon sole

Lemon sole is currently jointly managed in a TAC with witch for Subarea 4 in the EU annual bilateral negotiations. Article 504 of the TCA requires assessment to be carried out on the alignment of management areas. Further details on the proposed amendments to the management of this stock can be seen in section 'Realignment of TAC management areas'. In addition, this FMP proposes that research is conducted into technical measures being proposed in 'Technical Measures' as a precautionary measure in English waters of the Eastern English Channel. In the meantime, while these two workstreams are being developed, this stock should be managed in line with the principles set out in section 'Harvest Strategy'

Witch

Witch is currently jointly managed in a TAC with lemon sole for Subarea 4 in the EU annual bilateral negotiations. Article 504 of the TCA requires assessment to be carried out on the alignment of management areas. Further details on the proposed amendments to the management of this stock can be seen in section 'Realignment of TAC management areas'. Unlike turbot, brill and lemon sole, no measures are being proposed for witch in 7d as landings are low, due to the stock distribution being more northern. Further details on landings and distribution can be found within section 'Description of the fishery and stocks' and within Annex 1 Evidence Statement. Whilst the work is developing on aligning the management areas of witch, this stock should be managed in line with the principles set out in section 'Harvest Strategy'.

Dab

Dab was previously managed through the TAC framework but was removed from the TAC management system in 2017. ICES advises that the risk of having no catch limits for dab is currently considered to be low. This advice remains valid whilst dab is still largely a bycatch species of plaice and common sole fisheries and within the F_{MSY} ranges. Dab is still currently within safe biological limits; however, if this situation changes the advice will be amended by ICES and this FMP will be updated as required.

ICES considers that this stock is currently in a healthy state. We continue to promote an evidence-based approach to managing stocks. We do recognise the need to understand the discarding of this stock (89%) as the survival rates of discards are currently unknown. In the short-term we will intensify participation in scientific trails to improve data collection on discards. Once data and understanding has improved, we will investigate if there is a need to amend minimum mesh sizes to reduce bycatch.

Flounder

Flounder was previously managed through the TAC framework but was removed from the TAC management system in 2017. ICES advises that the risk of having no catch limits for flounder is currently considered to be low. This advice remains valid whilst flounder is still largely a bycatch species of plaice and common sole fisheries and within the biological proxy ranges. Flounder is still currently within safe biological limits; however, if this situation changes the advice will be amended by ICES and this FMP will be updated as required. However, flounder is a data-limited stock with the ICES classification of Category 3 for data availability. This means that there is no defined MSY, just an F_{MSY} proxy as there is no agreed analytical assessment. The advice is based on indicators of stock size and catches, instead of reference points. There is some concern over the lack of analytical assessment for this stock, and the UK government would welcome improvement to the stock assessment. This is consistent with our commitment to fisheries management approaches that are science- and evidence-based. However, at this present time there is no concern for the stock status and the UK government does not see a need to take a precautionary approach to managing this non-quota stock in the meantime.

Halibut

ICES does not currently assess and advise on Atlantic halibut in the FMP area. This stock is a northerly species in the North-East Atlantic and the FMP area is on the edge of the stock species distributional range. Given the size and value of Atlantic halibut, it can be a significant bycatch stock for fleets in the Southern North Sea, albeit infrequent due to FMP area being at the edge of the species distributional range and being considered vagrant. Therefore, no measures are proposed for this stock due to the FMP being on the edge of the distributional range.

To better understand the status of the stock, a more concerted effort is needed to collate any available information. This FMP proposes that such work could be undertaken by a relevant ICES working group to better identify stock unit in the North Atlantic, and, once identified, work could be commissioned to develop a stock assessment. A stock assessment could then be used to support management of Atlantic halibut.

Realignment of TAC management areas

The TCA (Article 504: Alignment of management areas) identifies certain stocks as requiring advice from ICES on the alignment of management areas and the assessment units used by ICES. It then specifically identifies lemon sole and witch (North Sea), and turbot and brill (North Sea) in Annex 35 as requiring advice. The UK government reaffirmed this commitment in the Written Records for the EU-UK annual agreements for 2022 and 2023.

Joint TACs are not optimal for sustainable management of either species as it allows the TAC to be set above the recommended MSY advice provided by ICES for a competent species. This means that additional fishing effort can be diverted into targeting one species and can lead to unsustainable exploitation. In addition, the TAC area for lemon sole, witch and brill does not match the ICES advice area for these species but the TACs are set using the advice for the overall ICES advice area. This means that the TAC is set at a level greater than should be allowed in the North Sea alone (Area 4) and fishing outside the TAC area but within the advice area is not capped. Both of these factors mean that the risk to the sustainability of these stocks is high. In December 2022, ICES confirmed that management of these stocks should be done using a single-species TAC covering the stock distribution area. We are presently working with the EU through the Specialised Committee for Fisheries to restructure the TACs so they are more sustainable.

Technical Measures

The following technical measures for lemon sole, turbot and brill are also included in the Channel Demersal Non-Quota Species FMP.

All management measures recognise that national benefits, social impacts, property and human rights, and equal access need to be considered. The impacts of these will be evidenced through the short- to long-term actions of the FMP. Short-term actions take steps to implement precautionary management to provide more immediate protection for the stocks and are in place. At present, the FMP is exploring the technical measures outlined below, which could contribute to sustainable harvest in the short-term, whilst a long-term strategy is being considered. Further work is needed to determine how applicable these measures are and refine the benefits.

The rationale for the below measures is to protect pre-spawn juveniles and promote recruitment. These possible measures are being explored as a precautionary step given concerns surrounding stock health. Future iterations will deem if these measures are appropriate as evidence is developed. The FMP will continue to consider the TCA and international negotiations and the impact these may have on managing the fishery and the measures being explored.

Summary of recommendations for introducing minimum conservation reference sizes (MCRS)

Introduction of MCRS measures are intended to protect juvenile fish from being landed through prohibition of landings, thereby by making it undesirable to target this size class of individuals. However, without changing mesh sizes to accommodate the introduction of a MCRS, juveniles may still be caught and discarded, raising concerns for the survivability of discards and the sustainability of fishing practices. As such, to achieve sustainability of these species, the introduction of an MCRS is being considered alongside measures to increase mesh size to 100mm. Applied in combination, these measures are intended to

prevent the juvenile fish from being caught and landed. Recommendation for these measures has primarily been driven by stakeholder concern surrounding catch of juvenile lemon sole, turbot, brill and cuttlefish, as highlighted within the section above. In addition, evidence gathered on these species suggest that brill stocks are exhibiting signs of initial overexploitation and turbot stocks (albeit in the North Sea) have recently experienced a reduction in recruitment, leading to a decrease in advised landings of 33% between 2016 and 2022.

Short-term (1-2 years)

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

MCRS for lemon sole, turbot and brill was discussed during stakeholder engagement and was highlighted as a particular concern by stakeholders. These species are highly economically valuable to the fishery, with turbot also being considered valuable to the recreational sector.

The FMP will explore the implementation a minimum size of 25cm for lemon sole and 40cm for turbot and 35cm for brill, linking to evidence on the maturity of each species. The above given MCRS have been derived from 2022 data on the size at which 50% of the population of each species are thought to be at maturity. Recognising that males for species of turbot and brill mature earlier than females, the measure has been recommended for the size of maturity for females. Fishing below this would create a selection bias potentially removing spawning females from the population and negatively impacting the stock. The ambition will be to explore the introduction of these MCRS through the FMP. Evidence would need to be gathered to understand the impact on the stock and the fishery, therefore, while this is in development, the FMP would recommend aligning to the existing IFCA MCRS for these species. Cornwall and Southern IFCAs have introduced a MCRS for lemon sole (25cm), turbot (30cm), and brill (30cm).

This was deemed a simple measure to implement and will significantly help to promote stock health and therefore fishing opportunities across each sector. This is a precautionary measure as there is insufficient evidence on the discard survivability of these species. There is a clear evidence gap to be closed in the short-term.

Risks

- Lack of survivability understanding, so unable to full quantify the benefits

Towed gear

Medium- to long-term (3+ years)

Measure

Consider gathering evidence on potential viable options for management measures for towed gears within the Eastern English Channel, in particular in relation to 0-12nm.

Purpose

To reduce fishing pressure on juvenile individuals within the Eastern English Channel. Will need to explore compatibility with MCRS for priority species. Additional time given to weigh impacts of potential measures on inshore fisheries.

Risks

Need to understand the unintended consequences of potential management measures to other towed gears. The FMP recommends considering building an evidence base to consider viable options for towed gear management measures in ICES area 7d. This is recommended for implementation in the medium- to long-term. In particular in relation to 0-12nm, which would enhance stock sustainability and deliver social and economic benefits to the whole sector.

Concerns have been raised by stakeholders on the impact of towed gears on the inshore stocks, and the impact this has on the fishers and dependent local communities. A measure to support the inshore stocks, by reducing fishing pressure within 12nm, could potentially act to mitigate environmental concerns around benthic habitat integrity. However, this would be considered in the medium- to long-term to allow for additional evidence gathering to understand the impact this might have on vessels; any benefits this measure might have on the sustainable of inshore stocks and benthic habitats; and to understand the impact of displacement on the marine environment beyond 12nm. Consideration will also need to be given to the principles outlined in the TCA when considering this measure. This could also link to the Celtic Sea measures and Lyme Bay consultation which are due to be reviewed this year and next.

A recommendation from the FMP is that further management measures for towed gears could be explored through evidence gathering to support the introduction of MCRS measures. These measures could bring potentially support long-term benefits for all species, allowing them to grow to the size of maturity before being caught, and thereby benefiting the fishery through more populous higher-value individuals.

Harvest Control Rules

For the first iteration of this FMP, no new harvest control rules are being introduced. Instead, the FMP proposes that ICES advice is followed in order to achieve MSY and, for

stocks where MSY advice is not available, recommends data gathering to enable stock assessments to be performed in the future.

Research and Development of new technology

Future research and development into new technology will be reviewed against current issues associated with monitoring and enforcing compliance of the management measures for this fishery. Where new technologies are identified that could address these issues, these will listed in further iterations of this plan.

Managing Environmental Considerations

FMPs are subject to legal and environmental obligations arising from legislation such as Habitats Regulations, Marine and Coastal Access Act, UK Marine Strategy, and the Environmental Principles policy statement for the Environment Act 2021. Defra commissioned the SNCBs to provide advice on the following; potential risk posed by flatfish fisheries to the designated features of Marine Protected Areas; potential risks posed by flatfish fisheries to UK Marine Strategy descriptors; and the extent to which these risks might affect our ability to contribute to the UK achieving Good Environmental Status (GES). The evidence and advice that has been provided by SNCBs underpins the suggested measures put forward in the sections below. Further detail on all risks and their mitigations is available in Annex 1 Evidence Statement.

Marine Protected Areas

Impacts of fisheries within MPA boundaries are assessed and managed, where necessary, by IFCAs and the MMO, as described in section ‘Marine Protected Areas’. However, there remains the potential for fishing activity occurring outside the boundaries of an MPA to have impacts on the protected features of those MPAs. This can happen when either the pressures exerted by fishing activity can impact protected features beyond the spatial footprint of the site or when the feature of an MPA is mobile and travels outside the site.

For this FMP the primary concern was the risk of bycatch of mobile species that are designated features of MPAs. Trawling has the potential to result in a bycatch of some designated fish / shellfish species. Use of static tangle nets may also risk bycatch of birds and possibly marine mammals which are designated features of MPAs.

Mitigations

Reducing bycatch is complex and requires solutions that are tailored to the different fisheries. To assist in the understanding and mitigations of the bycatch risks highlighted in the SNCB advice the following steps will be taken.

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

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

Wider Seas: Beyond MPAs

The marine environment outside of MPAs but within the spatial boundaries of this FMP also holds the potential to be negatively impacted by fishing activities. The SNCBs undertook a screening exercise to investigate the impact of the pressures associated with the fishing industry across all 11 descriptors of GES (see Annex 3). For this FMP the following four risks were identified:

- The impact of targeted fish removal on flatfish stocks. Any management brought in to meet the precautionary objective should also support the delivery of GES targets for D3 for the targeted stocks. As this issue will be covered by a separate part of the FMP, no additional mitigation was suggested
- Where demersal mobile gear is used, there is a concern around benthic disturbance and the contribution to current failure to meet targets for D6 seafloor integrity. Seabed impacts will also have associated impacts on the benthos i.e., D1 biodiversity and D4 food webs. The impacts of any demersal mobile gear on seafloor integrity, biodiversity and food webs will need to be considered by the FMP. This is considered a high-risk issue as there is a clear link between activity and failure to meet GES indicator targets
- The impact of bycatch of species on D1 biodiversity, D3 commercial stocks and D4 food webs. The risk to both commercial 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 2020 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 2020, 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. Loss of gear such as trawls and nets will add to overall levels of fishing related litter within the sea and can have unintended consequences such as ghost fishing. Consideration of how best to avoid or minimise loss and achieve sustainable end of life disposal is important. This risk is considered moderate

Mitigations

Seafloor integrity

On a national level, the UK government is committed to reducing the impact of current fishing gear on the seabed and is taking a multi-faceted approach to assess where measures can be best placed to mitigate impacts. Working with stakeholders, Defra will consider the evidence and develop further recommendations on the potential effects of fishing activities (alongside other activities) on seafloor integrity and the state of benthic habitats, including contributing to the implementation and coordination of the Benthic Impact Working Group. This work will consider the issues at a strategic level and within the context of ongoing changes in marine spatial use and environmental protection to achieve the objective of GES under the UK Marine Strategy.

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

Bycatch

On a national level, this identified risk is relevant to the ecosystem objective of the Fisheries Act 2020, which states that ‘incidental catches of sensitive marine species are minimised and, where possible, eliminated’. This includes cetaceans (whales, dolphins and porpoises), seals, elasmobranchs (sharks, skates and rays), seabirds, turtles, and some sensitive fish species, and is part of a wider effort to ensure the sustainability of our fisheries. There are also legislative drivers in the UK Marine Strategy to achieve GES which for species includes indicators on bycatch. The Marine Wildlife Bycatch Mitigation Initiative published in August 2022 sets out in more detail policy the objectives and actions that should be taken to achieve the ecosystem objective in the Fisheries Act 2020. The full details of mitigations for bycatch can be found under section ‘Managing Environmental Considerations’ of this FMP.

Marine litter

The UK is committed to lead efforts to protect the marine environment from marine litter, including abandoned, lost and otherwise discarded fishing gear, and has been taking a whole life cycle approach to prevent material from becoming a source of litter. Policies have been introduced under the following:

- OSPAR Convention established a second Regional Action Plan on Marine Litter
- The Intergovernmental Negotiating Committee (INC1) have co-sponsored a legally binding treaty to reduce plastic to sustainable levels
- Defra and Devolved Administrations are developing options under the End-Of-Life Fishing gear model
- Existing monitoring programmes assess seafloor litter, surface litter and beach litter, alongside ongoing research initiatives to support the reuse and repurpose of end-of-life fishing gear back into the fishing industry to support a circular economy and to reduce the impacts generated from fishing waste

Improved access to onshore fishing waste disposal/recycling facilities could be achieved through nationwide industry-led waste management schemes and supported by extended producer responsibility schemes to help develop a circular economy. The next iteration of this FMP will include collated and reviewed evidence from existing national policy and monitoring schemes. We will encourage the participation in initiatives which will assist in recording gear losses to better understand the levels of risk and establish baselines. In future iterations, the FMP will consider the evidence collated and assess the scale of the impact generated by flatfish fisheries.

Ongoing Environmental Data Collection

There are a range of ongoing monitoring and evidence programmes currently gathering data to inform on the risks of the fishing activity to both MPAs and the GES descriptions relevant to this FMP. The following monitoring programmes can feed into the objectives set out in this FMP:

- The Bycatch Monitoring Programme
- Clean Catch UK
- Protected site monitoring
- Monitoring undertaken through the English Seabird Conservation and Recovery Plan
- JNCC work on extent of physical damage (D1 & D6 seafloor integrity) for OSPAR and UKMS.

There is a lack of data on the direct impacts that flatfish fisheries in the Southern North Sea and Eastern Channel are having on the wider environment. Further evidence is required to understand the impacts on designated features of protected sites and the achievement of GES on the wider marine environment. In this iteration of the FMP, no mitigations on an FMP level are being explored and the FMP seeks to get data feed in from national mitigation to inform any potential mitigations in future iterations.

Climate Change

Under future climate change, modification of temperature and salinity are expected to result in shifts to distributions of marine organisms, including commercial fish species. In an analysis of 50 abundant species in the waters around the United Kingdom and Ireland, 72% of the fish species were shown to have responded to warming in the region already, by changing distribution and abundance. Specifically, warm-water species have increased in abundance while cold-water species have decreased, with these trends expected to continue in the future, predicted future distributional shifts for the FMP species (flounder was not included in this analysis) and found that waters around the UK are predicted to become more suitable in the future for common sole, brill, turbot and witch, but less suitable for dab, plaice, halibut, and lemon sole. For all FMP species, apart from halibut (with a predicted southward shift), there was a predicted northward shift in habitat suitability by 2060. Plaice and dab were some of the species with the greatest projected northward shift.

Climate change mitigation – reaching Net Zero

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

Recent analysis has shown that the total UK fishing fleet segment using demersal trawls and seines, which comprises of 402 vessels, produced approximately 30% (249kt 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.

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

Climate change mitigation – blue carbon

Healthy coastal and marine environments can provide nature-based solutions to help tackle climate change. For example, certain marine habitats that are home to these flatfish species, such as seagrasses and saltmarshes, can store carbon and therefore these are known as blue carbon habitats. If left undisturbed, these habitats can contribute to GHGe

reductions. Habitat disturbance through fishing practices may affect seabed carbon dynamics. Evidence is beginning to suggest that overfishing reduces the carbon storage potential of the ocean not only through removal of biomass, but by reducing the mean size of individuals in the population, the quantity of faecal pellets excreted and the number of large carcasses sinking to the seabed. Evidence is emerging that indicates that fisheries management could play a positive role in the marine carbon cycle through preserving the largest fish within populations, maintaining sustainable stocks beyond MSY limits and adopting ecosystem-based fisheries management.

Defra continues to develop an evidence base on blue carbon habitats in the UK, further evidence is required to understand the trade-offs and wider consequences of decisions. The Blue Carbon Evidence Partnership is working to increase the blue carbon evidence base, and as further research develops in this area, it will be considered for future iterations of the FMP.

Performance Indicators and Monitoring

Indicators for monitoring the effectiveness of the plan

Each year ICES produces stock assessments for all stocks within this FMP except for Atlantic halibut. These stock assessments will assess and provide an estimate on how the fish populations have changed over time and the effect fishing pressure is having on stocks. Key biological indicators are provided as reference points, which give indication towards their maximum sustainable yield, fishing pressure, spawning stock biomass. Annual reviews will be undertaken of the stocks to analyse how they are performing against these reference points, and any other reference points provided within the advice.

For Atlantic halibut, no ICES advice is currently produced. This stock is a northerly species in the North-East Atlantic, and the FMP area is on the edge of the stock species distributional range. Until work has been commissioned to develop a stock status understanding and assessment for this stock no biological reference points can be used to evaluate the success. Steps should be taken to establish ICES stock assessments for Atlantic halibut, which would then allow for monitoring of the sustainability of the stock over time.

These annual reviews will take place following the release of the ICES advice and in addition to the standard six-year review cycle set out in the Fisheries Act 2020 and the JFS. Further reviews may also be required if new opportunities present themselves to improve the effectiveness of the plan.

In order to further monitor the social and economic value of the fishery, we will also monitor the reports set out below. The FMP will take advantage of future social datasets to be developed as set out in section 3.2.10 of the JFS, which outlines that a range of data

and information will be gathered, including social, from sources such as fisheries-dependent sampling. The monitoring and evaluation framework for the FMP will continue to be developed and supported by the independent program evaluation of the FMP Program, which will produce a framework for evaluation of individual FMPs by the end of 2024.

Seafish Economics of the UK Fishing Fleet Annual reports: These reports present economic estimates at UK, home nation and fleet segment level for the UK fishing fleet. The estimates are calculated based on samples of fishing costs and earnings gathered by Seafish as part of periodic Fleet Economic Surveys.

Cefas Sea Angling in the UK reports: Estimates for recreational sea angling activities are currently generated annually for the whole of the UK. Two separate surveys are combined to achieve this:

- **Sea Angling Diaries:** A nationwide panel of sea anglers is recruited and use a bespoke diary app and online tool to complete a diary recording all their sea angling activities and catches during the year, from which the average catch per unit effort is calculated. Participants record data such as where they fished, the method, duration, and catches. Periodically, diarists have also provided details of what they spent on sea angling trips and angling purchases to demonstrate the economic value of the activity, and the impact of sea angling on their mental and physical health and wellbeing. Whilst this indicator may give us an estimate of recreational angling activity within the FMP area, it does not include data for all of the recreational sea anglers as the data are collected on a voluntary basis.
- **Watersports Participation Survey:** The watersports participation survey is conducted annually by leading marine bodies including British Marine, Royal Yachting Association (RYA), Maritime and Coastguard Agency (MCA), Royal National Lifeboat Institution (RNLI), British Canoeing (BC) and the Centre for Environment, Fisheries and Aquaculture Science (Cefas). It is an existing nationwide survey of UK residents that is used to estimate fishing effort in terms of how many people go recreational sea fishing, and how often they use different methods. Whilst this indicator may give us an estimate of recreational angling activity within the FMP area, it does not include data for all of the recreational sea anglers as the data are collected on a voluntary basis.

United Kingdom Marine Strategy: The UKMS provides the framework for delivering marine policy at the UK level and sets out how to achieve the vision of clean, healthy, safe, productive, and biologically diverse ocean and seas. The strategy includes several descriptors and associated indicators focussing on biodiversity, non-indigenous species, commercial fish, food webs, eutrophication, sea-floor integrity, hydrographical conditions, contaminants, contaminants in seafood, marine litter, and underwater noise. There are therefore indicators that will be relevant to the monitoring of the impact of the FMP. It is worth noting that several of the UKMS indicators are still in development and therefore may not be developed enough to use for the first monitoring report

The 25-year Environment Plan indicator framework: This provides a comprehensive set of indicators describing environmental change that relates to the 10 goals within the 25 Year Environment Plan. It describes the state of the environment and supports the strengthened framework for monitoring and reporting on environmental improvement. The indicators are split into several themes. Theme C Seas and Estuaries provides indicators most relevant to assess the FMP with including:

- C1 Clean seas: marine litter
- C2 Seabed subject to high pressure from human activity
- C3 Diverse seas: status of marine mammals and marine birds
- C4 Diverse seas: condition of seafloor habitats
- C6 Diverse seas: status of threatened and declining features
- C7 Healthy seas: fish and shellfish populations
- C8 Healthy seas: marine food webs functioning
- C9 Healthy seas: seafloor habitats functioning
- C10 Productive seas: fish and shellfish stocks fished sustainably
- C11 Productive seas: status of sensitive fish and shellfish stocks

Evaluation and review process for indicators

As set out in the Fisheries Act 2020 and the JFS, this FMP will be on a six-year review cycle as standard. Further reviews can be undertaken in between the six-year cycles if one of the above indicators identifies the need for a review or new opportunities present themselves to improve the effectiveness of the plan.

Relevant stakeholders and processes followed

Processes followed to develop and implement plan

This plan has been developed by Defra in line with the Fisheries Act 2020 and the JFS

Participation, collaboration and consultation processes

During the formulation of this FMP, Defra has engaged with a range of stakeholders with interests in this fishery through existing fisheries stakeholder forums. The overall rationale for following an approach which uses existing forums was to try and reduce the burden on stakeholders. The purpose of any engagement was to raise awareness of the development of the Southern North Sea and Eastern Channel mixed flatfish FMP and present draft proposals and content on the proposed direction of travel for the FMP

content. Then gather feedback, alternatives and any additional information that Defra should consider.

Engagement opportunities ran from early 2022 up till the consultation in July 2023. The stakeholder groups involved in the engagement process consisted of:

- Commercial fishing representatives including active fishers, fishermen associations and producer organisations
- Recreational fishers and representatives from recreational associations
- Regulators (MMO and IFCAs)
- Scientists (Cefas and scientists within other government departments and ALBs)
- Government ALBs (Natural England, JNCC and Seafish)
- Environmental groups and other NGOs
- Defra policymakers
- Representatives from the wider stakeholder industry such as buyers and sellers
- Government departments, arm's length bodies and other regulatory bodies

The forums Defra used to inform the stakeholder community on the FMP progress included meetings with UK Associations of Fish Producer Organisations (UKAFPO) representatives, Finfish Industry Advisory Group (FIAG), Fisheries Management Innovation Group, FMP programme eNGO meetings, standing Defra negotiations meeting with industry and eNGOs, amongst others, as well as bespoke meetings with individuals and groups when needed. Defra also made use of other teams within the organisations to support the development of certain aspects of the plan. This was done through the different internal teams reviewing sections of the FMP that fell into their policy area.

Defra engagement, moving forward, will continue to use these established groups to update stakeholders, test ideas and seek feedback on the overall FMP process, as well as using dedicated meetings to engage when needed. We continue to send project updates via the Defra stakeholder bulletin and maintain communication with stakeholders through our dedicated email address.

There is currently no formal stakeholder working group for the FMP. As part of the FIAG, there is potential scope for an FMP sub-group. We will seek views on future governance during the public consultation for the FMP. Engagement on the implementation of the plan will continue through existing fisheries stakeholder working groups to ensure the final FMP is effective for fishing community and wider stakeholders. See Annex 4 for a full summary of stakeholder engagement carried out.

Given the devolved nature of fisheries in the UK and the number of stocks the UK shares with other coastal States, effective management is co-dependent on both UK-wide and international solutions. Fisheries management therefore cannot be delivered in isolation, and the fisheries policy authorities will work together and with our stakeholders, other coastal States and international partners.

Provision & sharing of information

No specific provisions for the sharing of information with stakeholders are applicable for this plan. Existing channels of communication will be used to share information between administrations and stakeholders.

Review & revision of plan

The Fisheries Act 2020 requires the Southern North Sea and Eastern Channel mixed flatfish FMP for English waters to be reviewed at least every six years. This formal review will assess how the FMP has performed in terms of deliverables, and the outcomes achieved including those relevant to the Fisheries Act 2020 objectives. The findings of this review will also inform the development of subsequent iterations of the FMP. Further, the FMP will be assessed as part of the process to review the JFS. The Fisheries Act 2020 requires fisheries policy authorities to review the JFS whenever deemed appropriate, or at least within six years of publication.