Proposed Northern Shelf Ling Fisheries Management Plan

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Department for Environment, Food & Rural Affairs

DAERA
Department of Agriculture, Environment and Rural Affairs
An Roinn Talmhaíochta, Comhshaoil agus Gnóthaí Tuaithe
Depairtment o' Fairmin, Environment an' Kintra Matthers
www.daera-ni.gov.uk

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Executive Summary

The Northern Shelf ling (*Molva molva*) fisheries management plan (FMP) is one of 43 FMPs set out in the Joint Fisheries Statement (JFS). The FMP has been developed by the Scottish Government in collaboration with UK scientists, regulators, statutory nature conservation bodies (SNCBs) and stakeholders.

The FMP sets out the policies and actions to manage the Northern Shelf ling stock at sustainable levels, ensuring that it can continue to play a role in providing positive socio-economic benefits to the UK, whilst also setting out a number of actions to improve management where this is needed. The FMP applies to the sustainable management of Northern Shelf ling within UK waters in the International Council for the Exploration of the Seas (ICES) areas 2a, 4a, 5.b, and 6 (denoted here as "Northern Shelf"), and has been developed in line with the fisheries objectives of the Fisheries Act 2020 (the "2020 Act") and as required by the JFS.

The two main management areas covered by this FMP are the UK waters of the North Sea (division 4.a) and UK's western waters (subareas 6). These two areas fall within the ICES assessment for subareas 3, 4, 6–9, 12, and 14 (Northeast Atlantic and Arctic Ocean), which is a category 3 assessment. Additionally, this FMP covers the part of division 5.b which is within UK waters, and the part of division 2.a which is within UK waters. Division 5.b is subject to a separate, category 1 ICES assessment. Division 2.a falls within the ICES assessment for subareas 1 and 2 (Northeast Arctic), which is a category 3 assessment. As the UK portion of divisions 5.b and 2.a are geographically relatively small, and the quotas in these areas are minimal, the main focus of this FMP is on the fishery within UK waters of 4.a and 6.

Whilst the relevant fisheries policy authorities do not have sufficient evidence to estimate MSY reference points for the Northern Shelf ling covered by this FMP, the advice and management approach follows the ICES MSY approach under their framework for Category 3 stocks. It should also be noted that there is sufficient evidence to evaluate the likelihood of fishing below F(MSY) using a MSY proxy-based assessment.

Overall management of this fishery is shared with Coastal States partners. This international context is important to understand when considering sustainability and wider management issues. Fishing opportunities for ling are managed by total allowable catches (TACs). The setting of TACs can be an effective way of managing fishing pressure on fish stocks. TACs and other joint management measures are agreed through international negotiations which are guided by the best available scientific advice, whilst also balancing environmental, social, and economic factors. The principles followed by the UK in relation to international fisheries negotiations are laid out in the JFS under section 4.2.

The data limited nature of the Northern Shelf ling stock relevant to this FMP makes fisheries management challenging. Given the lack of available evidence, TACs for Northern Shelf ling are set on a precautionary basis as part of the UK/EU bilateral arrangements. There is an added difficulty, in that the stock is shared with Norway but not jointly managed as part of the trilateral arrangements.

Whilst the fisheries policy authorities are committed to improving the data relating to this stock, as well as considering the future management measures required to ensure the sustainable management of Northern Shelf ling, this is likely to take some time to deliver. Whilst ling forms an important component of the mixed whitefish fishery, and particularly so for the hook and longline portion of the fishing fleet, it is generally of lower commercial importance. Whilst the policies and actions within the FMP outline the importance of developing a roadmap for improving the stock's evidence base, alongside improving international management, it is not possible to prioritise these for early action at this time due to other stocks taking precedence.

Abbreviations

The 2020 Act – the Fisheries Act 2020

CO2e – Carbon Dioxide equivalent

DAERA - Department of Agriculture, Environment and Rural Affairs

DEFRA - Department for Environment, Food & Rural Affairs

EU – European Union

FMP – fisheries management plan

FMSY - Fishing Mortality Maximum Sustainable Yield

FTE - Full-Time Employees

GES – Good Environmental Status

HCR - Harvest Control Rule

ICES – International Council for the Exploration of the Sea

JFS – Joint Fisheries Statement

JNCC – Joint Nature Conservation Committee

LTMP - Long Term Management Plans

MCRS - Minimum Conservation References Size

MMO – Marine Management Organisation

MPAs - Marine Protected Areas

MSY – Maximum Sustainable Yield

PMFs – Priority Marine Features

PPT - Tonnage and price per tonne

REM – Remote Electronic Monitoring

SNCB – statutory nature conservation bodies

SSB - spawning stock biomass

SSFI - Scottish Sustainable Fishing Index

TAC – total allowable catch

UK – United Kingdom

What is an FMP?

An FMP is a document prepared and published under the 2020 Act that sets out policies designed to restore one or more stocks of sea fish to, or maintain them at, sustainable levels or contribute to the restoring or maintenance at sustainable levels and, where there is not sufficient evidence to make an assessment of a stock's MSY, steps proposed to obtain the necessary scientific evidence, in line with section 6(3)(b) of the 2020 Act. It is an evidence-based action plan that supports delivery of sustainable fisheries for current and future generations. The FMP is a long-term plan that must be reviewed and, if necessary, revised at least once every six years. It sets out both a vision for the fishery (or fisheries), together with the policies and management interventions necessary to achieve this vision.

Why an FMP for Northern Shelf ling?

Northern Shelf ling is a whitefish species caught as part of a mixed whitefish and targeted fishery within UK waters and also outwith UK waters. Ling is a species of generally lower commercial importance within UK waters, although it is a key species for the hook and longline fishing sector. In 2022, just under 5,500 tonnes of ling was landed into the UK, with a value nearing £8 million.

Stakeholder Engagement

The FMP has been informed by a range of stakeholder engagement initiatives. A working group of over 50 industry, environmental and SNCBs stakeholders was formed in 2023, and met multiple times to help inform and shape the content of this FMP. In addition, separate bilateral meetings took place over a number of months to gather additional views and input. This was part of a process known as 'pre-consultation'. As part of the process, the Scottish Government shared drafts of some of the demersal FMPs and gathered comments from stakeholders at two workshops held in February 2025 and by inviting written feedback. Stakeholder knowledge has been valuable in providing context for the FMP, and in developing meaningful actions that will support the sustainable management of Northern Shelf ling in the future.

Feedback received as part of formal public consultation will help shape the final document.

Vision

The vision for this FMP is that the Northern Shelf ling fishery in UK waters has sufficient evidence in place to allow assessment of the stock's MSY and is managed sustainably to help ensure that stocks are maintained above biomass levels capable of producing MSY.

The policies and actions set out in this FMP set out how this will be delivered in a way that is consistent with, and supportive of, the wider achievement of the fisheries

objectives set out in the 2020 Act and the policies contained within the Joint Fisheries Statement (JFS) and other legislative commitments.

Policies

The relevant fisheries policy authorities do not have sufficient evidence to estimate MSY reference points for Northern Shelf ling fishery covered by this FMP. However, there is sufficient evidence to evaluate the likelihood of fishing below F(MSY) using a MSY proxy-based assessment. The advice and management approach follows the ICES MSY approach under their framework for Category 3 stocks. Fisheries policy authorities are committed to improving the data relating to this stock, as well as considering management measures required to ensure the sustainable management of Northern Shelf ling. These steps and measures are outlined under 'FMP policies' section, although it should be noted that these actions are likely to take some time to deliver due to prioritisation of resources on other commercially important stocks.

In addition, in accordance with section 5.4 of the JFS, the design and structure of FMPs directly relate to the fisheries objectives identified in section 5.4.2 but may also address wider issues in fisheries management depending upon the specific goals or targets of each plan and may contribute to one or more of the remaining fisheries objectives.

To ensure effective ongoing management of the Northern Shelf ling fishery in UK waters, the FMP identifies six policies focussed on domestic and international management priorities. These policies are subject to the consideration of the consultation and will be prioritised appropriately to ensure realistic and measurable outputs. They were drafted to meet the requirements of section 6(3)(b) of the 2020 Act (policy 1 and 2) and policies set out in the JFS (policies 3, 4, 5, and 6).

For each policy, the plan sets out:

- a rationale;
- ongoing, short and longer term actions; and
- how the actions support delivery of the fisheries objectives.

Each policy describes the outcome that is being worked towards, and the actions are intended to support the delivery of those outcomes.

Performance indicators for the FMP are addressed towards the end of this document.

The six policies of this FMP are to:

1. Continue to manage the Northern Shelf ling stock using existing tools to maintain stock levels;
2. Improve the evidence base underpinning the stock, in order to support sustainable harvesting of the Northern Shelf ling stock, with biomass maintained above the level capable of producing MSY;
3. Address discarding issues in the Northern Shelf ling fishery and ensure that where possible all catches are counted against quotas;

4. Deliver wider sustainable management by taking steps to minimise the impact of the ling fishery on the marine ecosystem;
5. Support fishing businesses to deliver socio-economic and cultural benefits for communities;
6. Reduce the impact of fishing on climate change and support the fishing industry to adapt to the impacts of climate change.

Scope

This FMP relates to Northern Shelf ling *(Molva molva)* which consists of the Northern Shelf ling fishery in UK waters of the ICES areas 2.a, 4.a, 5.b, and 6 (Rockall and West of Scotland). It should be noted that the ICES assessment for this biological stock also includes ICES areas 3, 4, 6-9, 12 and 14.

The two main management areas covered by this FMP are the UK waters of the North Sea (division 4.a) and UK's western waters (subareas 6). These two areas fall within the ICES assessment for subareas 3, 4, 6–9, 12, and 14 (Northeast Atlantic and Arctic Ocean), which is a category 3 assessment. Additionally, this FMP covers the part of division 5.b which is within UK waters, and the part of division 2.a which is within UK waters. Division 5.b is subject to a separate, category 1 ICES assessment. Division 2.a falls within the ICES assessment for subareas 1 and 2 (Northeast Arctic), which is a category 3 assessment. As the UK portion of divisions 5.b and 2.a are geographically relatively small, and the quotas in these areas are minimal, the main focus of this FMP is on the fishery within UK waters of 4.a and 6.

The 2020 Act requires the relevant authority or authorities to prepare and publish FMPs in accordance with the list and timetable included in the JFS.[1] The relevant authorities responsible for this FMP are DAERA, Defra and the Scottish Government[2]. The plan has been prepared and published jointly by the relevant authorities for the purposes of the 2020 Act. As the coordinating authority, the Scottish Government has coordinated the preparation and management of this plan on behalf of the other relevant authorities.[3]

Background

Stock

Ling is one of the largest species in the cod family, with adults reaching up to 40 kg in weight and 2 m in length. They are widely distributed across the northeast Atlantic

[1] UK Government (2022) Joint Fisheries Statement

[2] The definition for an "authority" is given in Annex A (p. 55) of the JFS, which is: "**Authority or Authorities responsible for preparation and publication of plan**: The authority or authorities which are responsible for preparing and publishing the plan. There can be up to four fisheries policy authorities acting jointly in a plan.".

[3] The definition for a "co-ordinating authority" is given in Annex A (p. 55) of the JFS, which is:- "**Coordinating Authority**: The fisheries policy authority which will coordinate the preparation and management of the plan on behalf of the other fisheries policy authorities acting jointly".

and are typically found on hard or sandy areas of the seabed. They are commonly found at depths of 300-400 metres but can be found anywhere between 60 and 1000 metres in depth.

Fishing methods vary between countries, with the UK fleet using predominantly trawls (~70%) and hooks and lines (~25%), with some seine netting and gillnets occurring. Fishing methods vary between countries, and between fishing area. The figures within this FMP primarily focus on UK fishing vessels, as these are the vessels for which we have accurate data. This is explained further in the fishery section below.

Ling is a slow growing, relatively long-lived species (up to 30 years of age), reaching maturity at between six and eight years old (and are hence prone to recruitment overfishing).

The main spawning grounds are considered to be in the Norwegian waters of ICES areas 4 and 2.a, near Faroes (area 5) or on the banks northwest of the British Isles (between Scotland and Iceland; area 6), and spawning occurs between April and June in waters between 100-300 m deep. Ling are mainly piscivorous (feeding on fish, but they will also eat crustaceans, cephalopods (such as squid), and echinoderms (such as starfish).

Location

The biological stock is found in ICES areas 3 (Skagerrak and Kattegat), 4 (North Sea), 6 (West of Scotland and Rockall), 7 (Irish and Celtic Seas), 8 (Bay of Biscay), 9 (Iberia), 12 (central Northern Atlantic), and 14 (eastern Greenland). For management purposes, there are three separate TAC areas, denoted by ICES codes LIN/03A-C (Skagerrak), LIN/04-C (North Sea) and LIN/6X14 (Atlantic). LIN/6X14 includes the UK and international waters of ICES areas 6-9, 12 and 14.

The below figures show the location of the ICES areas, along with the known distribution of the Northern Shelf ling stock in European waters, according to the latest available survey data.

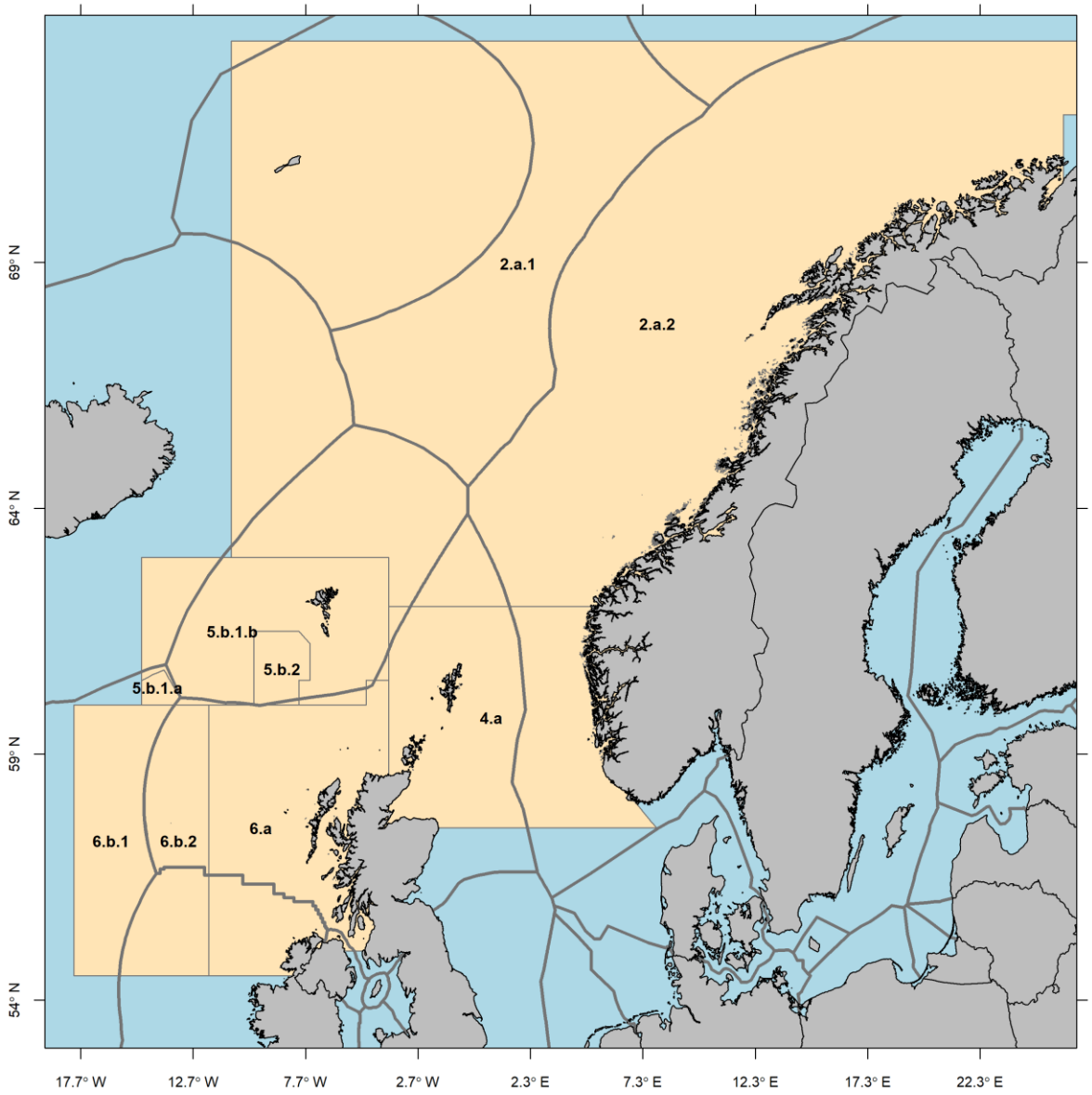

Figure 1: Map of ICES areas covered by this FMP shown in yellow. This FMP covers the Northern Shelf ling fishery in UK waters only.

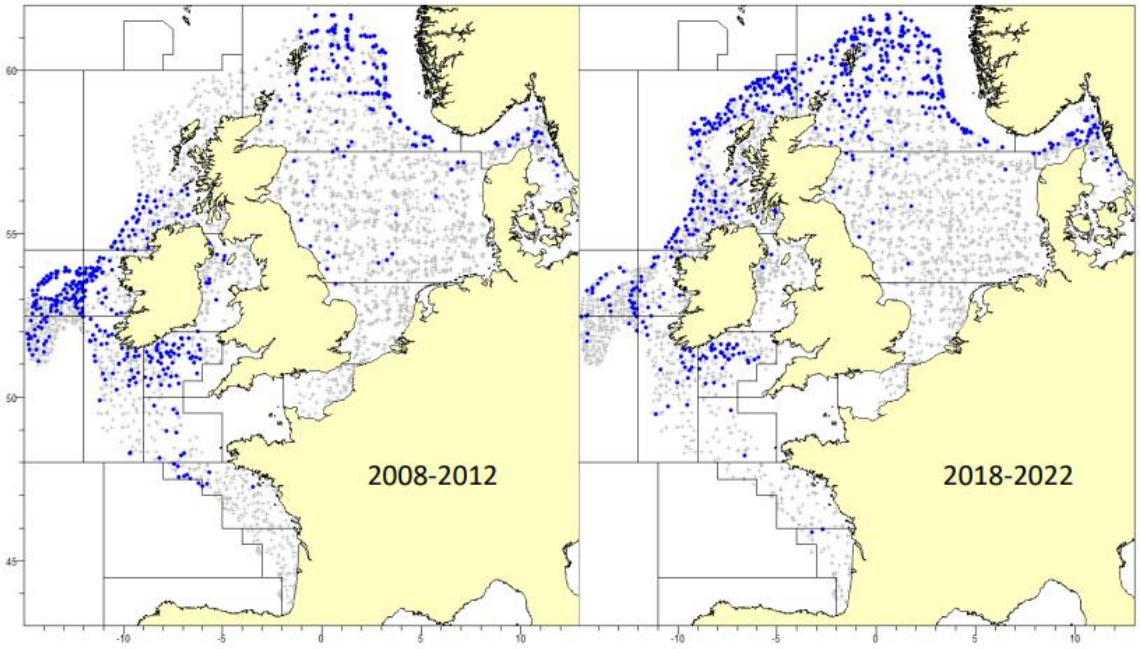

Figure 2. Occurrence of ling in surveys in European waters during 2008-2012, and 2018-2022. A blue dot signifies that ling were caught at that haul location. Source: Working Group on the Biology and Assessment of Deep-sea Fisheries Resources (WGDEEP) (figshare.com).

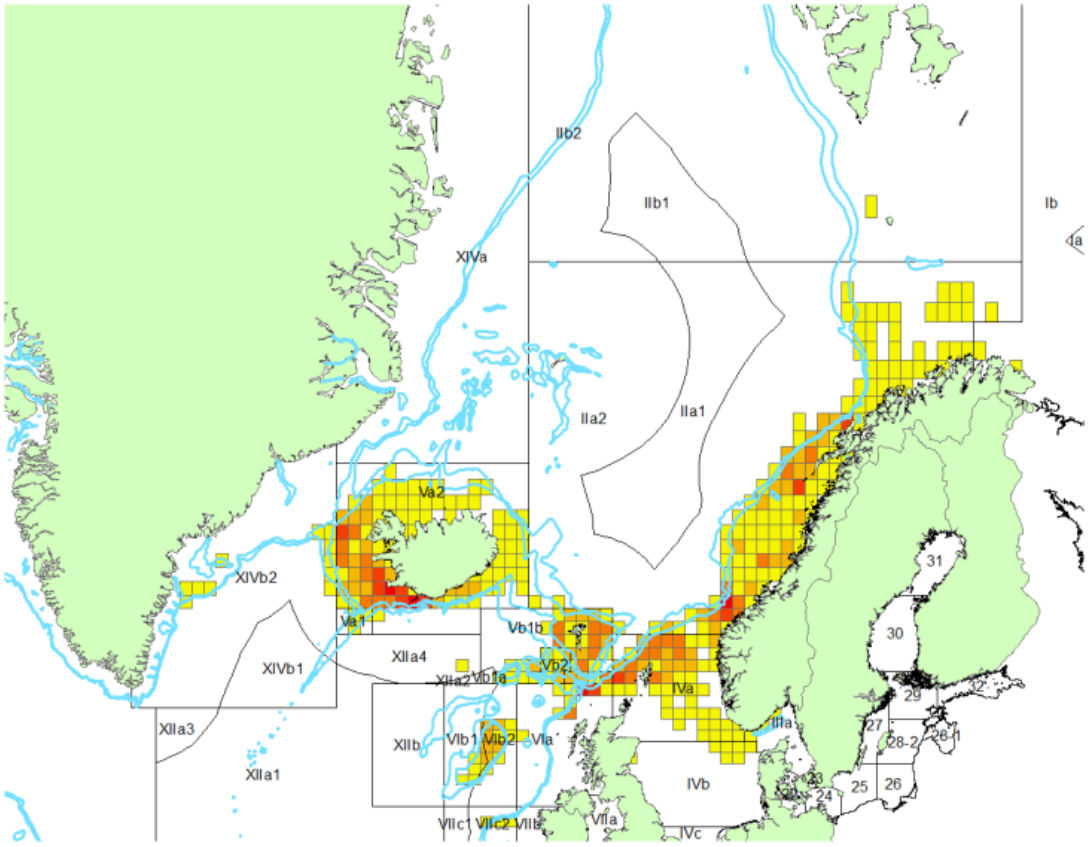

Figure 3. Distribution of reported ling catches during 2013. Source: Working Group on the Biology and Assessment of Deep-sea Fisheries Resources (WGDEEP) (figshare.com).

Fishery

Fishing for Northern Shelf ling in UK waters generally takes place as part of a mixed fishery (meaning that ling is caught alongside other fish stocks, usually other whitefish). There are many shared characteristics between whitefish stocks, and similarities in where and how they are fished. When considering management action for Northern Shelf ling as part of this FMP, and in wider management considerations such as the setting of fishing opportunities, fisheries policy authorities consider the role of ling in the wider marine ecosystem. Many of the issues that are considered as part of this FMP are applicable across demersal whitefish fisheries, and therefore the actions required are often not specific to one particular stock or fishery.

It is important to note that the figures provided in this section are based on the latest available data which is from 2022. Whilst this section provides a snapshot of the fishery at this time, it will not reflect any more recent changes in the fishery.

Northern Shelf ling is typically caught by demersal-targeting fleets who landed 96% of the catch between 2019 and 2022. The remaining 3% was caught by shellfish-targeting fleet (which was likely a result of bycatch) and 1% by mixed fisheries.

Analysis of the UK fleet shows that, between 2015 and 2022, ~60% of Northern Shelf ling was caught in ICES area 4.a, with ~38% from area 6 (predominantly in subarea 6.a). A very small amount (<2%) was caught in areas 2.a and 5.b, outwith UK waters. It is predominantly caught by the non-UK fleet, who accounted for 78% of the total catch, for areas 4, 6, and 5.b, between 2015 and 2021. Note: this includes non-UK waters, and figures for UK waters only are unavailable at this time. Within the same period, the UK accounted for 22% of the Northern Shelf ling catch. For UK landings of Northern Shelf Ling in 2022, Scottish-registered vessels represented 90% of the catch, with English vessels making up the remaining 10%. The Northern Irish fleet represented <1% of the catch.

Analysis of UK fisheries data shows that, on average between 2015 – 2022, Northern Shelf ling was typically caught by demersal trawls (~70 %). 25% was caught by hooks and lines, and 3% caught by seine nets. Gill and entangling nets made up a very small percentage of caught Northern Shelf ling (~1%).

Table – Northern Shelf Ling caught by gear type used, for the UK fleet

Gear Type	2015	2016	2017	2018	2019	2020	2021	2022
Trawls	69%	68%	73%	72%	69%	74%	73%	71%
Hooks and lines	26%	26%	23%	24%	27%	23%	24%	24%
Seine nets	2%	4%	3%	3%	3%	2%	3%	4%
Gill nets and entangling nets	2%	1%	1%	1%	1%	1%	1%	1%
Other	0%	0%	0%	0%	0%	0%	0%	0%

The landed value of the Northern Shelf ling rose from £5 million in 2015 to over £9 million in 2019. After dipping to around £7 million during Covid-19 years, 2022's landed value matches 2019's £9 million figure. Tonnage has been fairly consistent,

historically around the 4,500 – 5,500t mark, with annual fluctuations. Price per Tonne (PPT) has also stayed relatively consistently between £1,200 and £1,600. A dip below the £1,200 mark is a likely explanation for the reduction in landed value during 2020/21. The PPT in 2022 reached a period high of £1,700. The market for Ling is primarily export-driven, with France and Spain being the primary export destinations for UK-exported ling[4].

The vast majority of the Northern Shelf ling caught between 2015 and 2022 by the UK fleet was landed into the UK (97%), whilst only 3% was landed outwith the UK. Landed catches are split evenly between 3 major districts: Wick, Shetland and Peterhead, which all saw roughly 22% of the Northern Shelf ling catch between 2015 and 2022. Around 10% of tonnage was landed into Ullapool in the same period, with other North and North Eastern Scottish districts seeing the majority of the remaining tonnage. Denmark was the most notable landing destination outside of the UK, which saw 2% of the Northern Shelf ling landings. With these districts' ports, the Northern Shelf ling did not represent a significant stock with the exception of Lochinver, which saw 11% of the port's total landed value derived from the species. For other ports, the species typically represented around 5% of the total landed value, with small variations between ports.

For different fleet groups targeting the species, the Northern Shelf ling appears to only be a notable stock for the longliner fleet, for whom it represents 21% of their tonnage and 11% of their landed value. For all the larger the North Sea and West of Scotland demersal fleet groups, the species represented less than 4% of their total landed value. The longliner fleet represented 238 FTE (full time equivalent) in 2022[5], and although the Northern Shelf ling's specific contribution towards this employment is indiscernible, it is evident that it has a not-insignificant role.

Stock Assessment and MSY

Scientific Advice

The following evidence has been collated from the most recent ICES assessment working group report (ICES 2024)[6] and the associated ICES stock annex[7].

As set out in Section 3.2 of the JFS and in line with the scientific objective of the 2020 Act and the TCA, the UK takes an evidence-based approach to fisheries management, making use of the best available scientific evidence. For the purpose of stock management and TAC setting, this tends to focus on the use of advice

[4] This includes all UK caught Ling, not just Northern Shelf Ling
[5] Economics of the UK Fishing Fleet 2023 — Seafish
[6] Weblink to ICES. 2024. Working group on the biology and assessment of deep-sea fisheries resources (WGDEEP). ICES Scientific Reports. 6:56. 1156 pp. https://doi.org/10.17895/ices.pub.25964749
[7] Weblink to ICES. Stock Annex: Ling in subareas 6-9, 12, and 14, and in divisions 3.a and 4.a (Northeast Atlantic and Arctic Ocean) https://doi.org/10.17895/ices.pub.20050412.v1; Weblink to ICES. Stock Annex: Ling (Faroes grounds) https://doi.org/10.17895/ices.pub.23599662.v1 (Division 5.b stock).

produced by ICES, although other sources of information, including data from the fishing industry, may also be used.

ICES provides biennial advice for Northern Shelf ling. ICES advice is organised according to categories, ranging from 1 (the most information available) to 6 (the least). Northern Shelf ling is a Category 3 stock which means that it is considered to have no quantitative assessment but there is a reliable indicator of relative abundance. Northern Shelf ling has seen decreases in scientific advice for TAC in recent years. There is no analytical assessment of ling in subareas 3, 4, 6-9, 12 and 14. Instead, ICES use a biomass index (derived from Norwegian longline fishery catch rates in Subareas 4 and 6) as an indicator of stock development over time, under the Category 3 approach for data-limited stocks. The biomass index is combined with a ratio of observed mean length in the catch relative to the target mean length, a biomass safeguard, and a precautionary multiplier. Finally, a stability clause may be applied to ensure the advice is within -30%/+20% of the previous value. The biomass index has shown a generally increasing trend over the last 20 years. No indicator of fishing pressure is available. This approach is considered by ICES to by consistent with the MSY approach on a precautionary basis, although it is not possible to determine MSY reference points as such.

There is no current plan for an ICES benchmark for Northern Shelf ling. The evidence base needs to be significantly strengthened before a benchmark exercise can take place, in order to ensure that a sufficient level of information is available to inform the outcomes.

Benchmark exercises are a tool used by ICES to peer-review and incorporate new science or evidence into the stock assessment process. They are part of the process which ensures that ICES advice is based on the best available scientific evidence.

Assessment of evidence

As set out above, the relevant fisheries policy authorities do not have sufficient evidence to estimate MSY reference points for the Northern Shelf ling fishery covered by this FMP, although the advice and management approach follows the ICES MSY approach under their framework for Category 3 stocks. It should also be noted that there is sufficient evidence to evaluate the likelihood of fishing below F(MSY) using a MSY proxy-based assessment. Fisheries policy authorities are therefore committed to improving the data relating to this stock, as well as considering management measures required to ensure the sustainable management of Northern Shelf ling. These steps and measures are outlined under FMP policies section.

Fisheries management

Management strategy for Northern Shelf ling

In the JFS, the UK fisheries policy authorities lay out a shared ambition 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'. The JFS also states that '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'. These ambitions are managed in line with numerous domestic and international policy drivers, which oblige action to consider and mitigate for the wider adverse environmental impacts of fishing activity.

In UK waters fisheries are managed in line with UK fisheries legislation (such as the 2020 Act, UK and devolved administration secondary legislation) and licence conditions where appropriate.

The management of the Northern Shelf ling fishery in the UK is carried out within this overarching context.

Northern shelf ling is a jointly managed stock with the EU. Quota opportunities for the Northern Shelf ling TAC areas (LIN/03A-C, LIN/04-C, LIN/6X14 and LIN/6X14) are determined within the UK and EU bilateral negotiations. The approach to Coastal States negotiations follows the principles for international negotiation stated in the JFS. The TAC for ling has in recent years been set at a precautionary level, although as ling presents a specific choke risk for other fisheries in UK waters, this may be balanced in the future against socio-economic considerations.

Following the conclusion of annual negotiations with the EU, the UK's share of the TAC is determined as fishing opportunities for British boats by the Secretary of State and published in a document under section 23 of the 2020 Act.[8] Following this, the UK's quota is apportioned between the four UK Fisheries Administrations in line with the UK Quota Management Rules.[9] Each UK Fisheries Administration then allocates its share of apportioned quota to vessels/licences under their administration, in line with their quota management[10] and Section 25 of the 2020 Act. Quotas are adaptable, for example, they may be transferred between the management groups which represent UK fishing vessels, or exchanged with the EU.

Whilst we have enough information to set a TAC for ling, the UK does consider that work is needed to develop a database and assessment method leading towards a future benchmarking of the stock. A roadmap for doing this is best delivered in partnership with international partners. Once the evidence base is improved, we will consider whether TAC management arrangements for ling need to be improved.

[8] Weblink to Department for Environment, Food & Rural Affairs (2024) Fishing opportunities for British fishing boats.
[9] Weblink to Department for Environment, Food & Rural Affairs (2024) UK Quota Management Rules.
[10] Weblink to separate quota management rules as set by the Scottish Government, Defra and DAERA.

Current technical measures

All fishing activity in UK waters is managed through a range of technical measures. These technical measures were historically laid out in the form of technical conservation regulations written into the Common Fisheries Policy (CFP) legislation through various EU delegated acts, which have now been retained into UK law following the UK's exit from the EU and will be referred to as 'assimilated law'. Following the UK's exit from the EU, the UK Government and devolved administrations have various powers available to them to introduce new technical measures, for example by using licence conditions, or through secondary legislation under the 2020 Act or other relevant UK laws.

Technical measures tend to apply to specific groupings of vessels, or types of fish, and as such can be very similar. This means that the technical measures in place to support sustainable exploitation of the ling stock are likely to be similar to those in place to manage the other whitefish stocks, particularly when they are part of a mixed fishery.

Current technical measures[11] in place to ensure sustainable exploitation of the ling stock include:

- Minimum Conservation References Size (MCRS) (which prevents targeting of undersized fish by ensuring that only fish above the MCRS can be sold for human consumption),
- Minimum mesh sizes and structure of fishing nets (which set a minimum standard intended to reduce catches of fish below the MCRS and generally make fishing operations more efficient and effective),
- The Landing Obligation[12] which stipulates that all catches of quota species, which includes ling and includes all catches below MCRS must be landed and counted against quota unless exemptions apply.

Further detail regarding technical measures can be found on the UK Government's Technical Conservation and Landing Obligation rules and regulations webpage[13].

As already noted within this FMP, despite the landing obligation being in place, there remains issues with illegal discarding of fish within the Northern Shelf ling fishery. Discarding figures produced by ICES show that for all vessels taking part in the Northern shelf ling fishery (i.e. not limited to UK vessels and not just in UK waters), on a 5 year average between 2019-2023, out of a total catch of 69,999 tonnes, there was a corresponding discard tonnage of 3,047 tonnes. The discard rate ranged from 1.7 % to 8.1%. These figures relate to ICES areas 3,4, 6-9, 12, and 14 (Northeast

[11] Most technical regulations for fishing vessels are established under the Common Fisheries Policy, originally adopted by the European Parliament in 2013 and revised in 2019. These regulations were incorporated into UK law following the UK's departure from the EU. You can find details of the UK-adopted legislation via this link.

[12]The Landing Obligation is defined in Article 15 of Regulation (EU) No 1380/2013, which has been assimilated into UK law following the UK's exit from the EU. The regulation can be accessed via legislation.gov.uk. Subsequent exemptions—such as those based on *de minimis* catch levels or *high survivability*—are outlined in later UK statutory instruments.

[13] Weblink to the UK Government (2024) Technical Conservation and Landing Obligation rules and regulations from 2022 onwards.

Atlantic and Arctic Ocean). Discarding issues are not specific to UK vessels, and will also apply to other non-UK vessels that catch the stock (both within and outwith UK waters). Steps are being taken across the UK to address issues with discarding, and actions relating to this are included within the actions section. This includes consideration of additional technical measures which might support fishing vessels to be more selective and avoid catching fish they wish to avoid. In Scotland this is under the Future Catching Policy programme of work.

The Northern Shelf ling may cause ‘choke’ issues. Choke refers to a situation that may occur when the quota opportunities for one stock in a mixed fishery may limit the ability of fishing vessels to maximum catches of another stock because the available quota is limited. Fisheries policy authorities take account of potential choke problems as part of the setting of quota opportunities. Ling can sometimes be caught in large quantities by fishing vessels fishing for other whitefish species and is recognised as a choke risk for those vessels.

Monitoring, control and enforcement

Fisheries regulations serve a range of purposes, including preventing actions which adversely impact sustainability of the marine environment. Fisheries policy authorities are focused on reducing the main risks for non-compliance with those regulations, for example relating to non or inaccurate reporting, use of illegal fishing gear and fishing in areas where activity is restricted.

Fisheries enforcement authorities (the Marine Directorate of the Scottish Government, the Department of Agriculture, Environment and Rural Affairs (DAERA) and the Marine Management Organisation (MMO) in this instance) carry out enforcement that is intelligence-led, risk-based or is required by the UK’s international obligations. Enforcement of the respective regulations, domestic and international is in line with applicable guidelines for regulators. Across the UK there are a range of assets to support this, including compliance vessels, surveillance aircraft, the UK Fisheries Monitoring Centre and Marine Enforcement Officers conducting physical and office-based inspections throughout the chain of traceability.

Fishing vessels over 12 metres are required to have fully operational satellite Vessel Monitoring Systems (VMS), and electronic logbooks, enabling authorities to remotely monitor and control fishing activity and encourage higher compliance. VMS is also being rolled out across the under 12 metre fishing fleet and will form part of the monitoring and enforcement regime for all fishing vessels once this rollout is complete. Understanding and being able to monitor and control where fishing activity is taking place is an important part of fisheries management, particularly where area restrictions are in place. Accurate and robust locational data is also crucial for informing marine planning decisions. Remote Electronic Monitoring (REM) is also being rolled out in parts of the UK and for certain fishing vessels. REM can provide a higher degree of locational data, along with the use of sensors and cameras where appropriate which enable monitoring of fishing activity and can provide a richer dataset, for example, in relation to catches and bycatches. Specific actions relating to VMS and REM are contained within the actions section below.

UK fisheries authorities apply a fishing vessel licensing regime along with control measures throughout the whole chain of traceability from catching to sale. These measures include requirements to record catch details whilst at sea, the weight of catch landed, transport and takeover documents once landed and sales notes from registered buyers. This comprehensive data set enables fisheries authorities to effectively monitor fishing activity and compliance with national and local regulations.

These measures are not specific to ling fishing, but apply across the wider demersal fishing fleet. As a bilateral jointly managed stock it is important that this FMP reflects appropriate actions identified through the monitoring and control group.

Actions to enhance the current monitoring and enforcement approach are contained within 'Actions' under policy 3.

Environmental considerations

Conservation Advice

In addition to the requirements of the 2020 Act, FMPs are subject to legal duties and requirements relating to the protection of the natural environment arising from legislation such as the Habitats Regulations, the UK Marine Strategy Regulations 2010[14], and the UK Marine Policy Statement[15], the Environment Act 2021, Marine and Coastal Access Act 2009, and The Marine (Scotland) Act 2010.

Alongside these requirements, FMPs seek to support a range of other existing environmental policies that focus on, enhancing the health of our seas for future generations, restoring marine biodiversity, and tackling the causes and impacts of climate change.

To support the development of policies aimed at protecting the natural environment, Statutory Nature Conservation Bodies (SNCBs) provided conservation advice for the Scottish-led demersal FMPs. This advice was developed to cover all demersal FMPs. This approach was deemed appropriate given the similarities between the impacts associated with demersal gears used in these fisheries, but FMP specific issues are also considered in the advice. SNCBs have also provided separate conservation advice for individual demersal FMPs that cover English waters.

Conservation advice considered risks relating to Marine Protected Areas (MPAs), Priority Marine Features (PMFs) (Scottish waters only) and UK Marine Strategy descriptors of Good Environmental Status (GES). The advice provides a pragmatic steer on where the greatest concerns lie for interactions between the relevant fishing gear types and the designated features of MPAs, PMFs, and UK Marine Strategy descriptors.

[14] The Marine Strategy Regulations 2010
[15] UK marine policy statement - GOV.UK

The demersal FMP advice identified otter trawls, pair trawls, beam trawls, and demersal seines - collectively referred to as demersal trawls and seines - as well as static nets targeting monk/anglerfish and longlines targeting hake, as the most primary gear types for consideration. For the Northern Shelf ling FMP demersal trawls, seines, static nets and longlines are the most relevant gear types.

The SNCBs developed a 'risk rating' which is intended to help identify where the greatest impacts of fishing are likely to occur. A three-point scale has been used in the conservation advice: low, moderate and high risk. Activities with a moderate risk indicate that fisheries management authorities may need to take additional action to reduce the impact of fishing or, in some cases, improve the evidence base in order to more accurately assess risk in the future. For activities with a high rating it is generally suggested that action will be needed. The advice noted that more detailed information on gear types, location and fishing effort would improve the ability to assess environmental risks associated with each FMP and could alter some of the risk ratings presented.

The evidence and advice that has been provided by SNCBs underpins the proposed actions in the 'policies' section of this FMP, in particular Policy 3: Deliver wider sustainable management by taking steps to minimise the impact of ling fishery on the marine ecosystem. Policy 1 also directly supports the delivery of improvements to the UK Marine Strategy descriptors relating to stock health. It is important to note that many of the actions that sit under these policies support work already underway.

It should also be recognised that the act of fishing in general, by its very nature, impacts on marine species and the marine environment in which fishing boats operate. However, understanding and, where possible, mitigating these risks and impacts, is an important part of effective fisheries management. In particular, the need to balance environmental action with consideration of the socio-economic benefits that fishing brings, is an important component of fisheries management.

MPAs and Priority Marine Features (PMFs) (Scottish waters only)

The conservation advice identified that demersal fisheries, including fisheries for ling, have the potential to impact the designated features of MPAs and PMFs (in Scottish waters) in three ways:

- Through bycatch and entanglement of species that are designated features of MPA and PMFs (Scottish waters);
- Through removal of key prey species on which designated species depend;
- Through physical impacts on the seafloor resulting in habitat impacts.

The advice recognised that measures have already been introduced, or are in the process of being introduced, which seek to mitigate the impact of demersal fishing in MPA areas, in Scottish, Northern Irish and English waters, covering the above three impacts. These are not specific to ling, but are covered by actions relating to demersal fishing activity in general. However, potential risks remain to designated mobile species when they move outside of the protection of the MPA.

For MPAs, risk relating to bycatch of mobile species (e.g. marine mammals and seabirds) in demersal trawls and seines is deemed to be **moderate**, with some species such as the basking shark and flapper skate as well as several deep-water fish species, including elasmobranchs, potentially at a greater risk. Gathering additional evidence on bycatch will help improve the evidence base and support improved management and actions relating to this are set out under the actions section.

The risk rating for bycatch in static nets and longlines is **high**. Some fishing for ling takes place with longlines and static nets and would therefore be covered by this data requirement. This is explored further in the 'actions' section. Actions in relation to this are contained within the actions section.

Finally, there is also a **moderate** risk relating to removal of juvenile gadoids which are considered important prey species for designated species. More evidence is needed on impacts and to aid understanding.

For PMFs (Scottish waters), the risk rating for bycatch in mobile demersal gears is considered **moderate**. However, further evidence collection to better understand the issue could lower this risk in the future. A **moderate** risk rating also applies for bycatch of PMFs in longlines (this is reduced from the MPA assessment as the PMF list does not include birds). However, monitoring of commercial species bycatch, including sensitive fish and elasmobranch PMF species is currently limited and further research is needed to understand the risk to these species. This issue is considered as part of the actions section, which sets out current and planned additional evidence gathering and bycatch mitigation which includes positive actions already being undertaken by the fishing industry.

The risk rating for physical impacts to benthic and habitat PMFs from mobile demersal gears is considered **moderate**, due to the fact that these features will be offered some protection through the MPA management process. The advice notes that physical impacts from static demersal gears are likely to represent a lower risk to benthos but there may be areas where high intensity static fishing can have a moderate impact on PMF habitats and benthic features through physical disturbance.

This topic is explored further in Policy 3 'Deliver wider sustainable management by taking steps to minimise the impact of ling fishery on the marine ecosystem'. Some actions to address impacts are already underway such as the introduction of inshore VMS and increasing the frequency of VMS reporting; incentivising the use of selective fishing gear and fishing techniques that have a reduced impact on the environment; and the implementation of fisheries management measures being introduced to existing MPAs and for PMFs (Scottish waters).

UK Marine Strategy Descriptors

The UK Marine Strategy Regulations[16] require management action to be taken to achieve or maintain GES in the UK marine area. The UK Marine Strategy Part

[16] The Marine Strategy Regulations 2010

Three: UK Programme of Measures outlines the actions and initiatives that are being taken across the UK to achieve this.

The conservation advice for demersal species focussed on the most relevant descriptors (D1 biodiversity, D3 commercial fish and shellfish, D4 food webs, D6 seafloor integrity and D10 marine litter). The advice also noted that additional consideration of screened-out descriptors may be required in the future and that the status of many of the current indicators are currently 'uncertain' or 'unassessed' and as the evidence base develops, the advice pertinent to those descriptors will need to be updated.

The conservation advice identified a number of risks from demersal fishing covering activities across the Demersal FMPs (not just those risks specific to fishing for Northern Shelf ling). This included: a **moderate** risk from demersal trawls and seines to achieving GES for marine mammals and seabirds through bycatch and prey reduction; a **high** risk to seafloor integrity due to benthic disturbance caused by mobile demersal fishing activities; and a **moderate** risk relating to marine litter. There is also a **high** risk from longlining to achieving GES for seabirds due to bycatch.

This topic is explored further as part of Policy 4 'Deliver wider sustainable management by taking steps to minimise the impact of ling fishery on the marine ecosystem'. Some of the actions to address impacts are already underway such as the work to introduce specific fisheries management measures where these are needed to protect specific marine features, for example, by supporting improved accuracy of fisheries spatial data through the introduction of inshore VMS. Relevant longer term actions include collaborating across the UK to develop policy to reduce/eliminate sensitive marine species bycatch in the UK.

In relation to marine litter specifically, there is ongoing work with regard to the Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR) 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.

Climate Change

The fisheries sector is facing several critical climate change issues and there is a need to collectively address these and co-develop solutions. The evidence base has made significant progress in the last decade with much greater focus on climate change impacts, adaptation[17] and mitigation[18] both from policy and industry.

The impacts of climate change are already apparent in the marine environment. We are already seeing warm water species increasing in abundance in UK waters while

[17]**Adaptation** means "The adjustment in economic, social or natural systems in response to actual or expected climatic change, to limit harmful consequences and exploit beneficial opportunities."
[18]**Mitigation** means "Reducing greenhouse gas emissions in order to slow or stop global climate change"

some cold-water species have decreased, with these trends expected to continue in the future. For species such as ling, it is possible that habitat suitability for the species will change. The impacts in terms of biomass are not well understood, and are also dependent on other broader factors such as fishing pressure, and the trends in prey and predators for a given species.

The potential changes in species distribution will have consequences for commercial fisheries, and are likely to affect fishing behaviours, fishing quotas and will require adaptive management.

Fishing can play a positive role in addressing climate change through providing high-quality protein with a lower carbon footprint. The UK policy authorities have different targets relating to climate change and are developing plans to support the drive towards net zero.

To support delivery of the climate change objective in the 2020 Act, the fisheries policy authorities will continue to take management decisions and negotiating positions that are evidence-based, setting fishing limits that are informed by the best available scientific advice, to support the ongoing resilience of fish stocks and the fishing fleets which rely on them.

FMPs set out our approach to increasing or maintaining sustainability of fish stocks and as additional evidence is developed, this will help fisheries managers to respond to changes in the status of stocks.

As found throughout the current literature[19] the recorded changes in climate are already shifting species distribution, altering major life events such as spawning and hatching, and changing the productivity levels of marine organisms. As the distributions of commercial species shift geographically, fishing grounds increase or decrease in importance, while extreme weather events become more frequent, impact on the fishing industry is inevitable. The three UK administrations will work with the fishing industry to help them adapt to the impacts that climate change will have on commercially important species and will contribute to the collective efforts to mitigate the impacts fishing has on climate change.

Several studies have modelled large-scale and long-term future changes in fish abundance and distribution in response to climate change. However, a level of uncertainty remains, and it is currently proving difficult to produce robust forecasts. Commercial fish stocks are generally managed on a stock-by-stock basis through the yearly assessment of their exploitation and ecological status compared to reference points, such as the level of fishing pressure that corresponds to MSY. However, MSY and its associated fishing mortality rate FMSY are sensitive to both stock characteristics and climatic conditions[20]. ICES makes the assumption that climate change is implicitly incorporated into the catch advice as the stock

[19] Informing Scotland's fisheries policies to be adapted and resilient to climate change and ocean acidification.pdf – Project commissioned by the Scottish Government, used a literature review, alongside expert engagement, to discuss the predicted effects of climate change on fish stocks, the likely effects on the Scottish fishing industry and to provide recommendations to fill information deficits and inform policy

[20] Climate change adaptation in the UK (wild capture) seafood industry - watching brief 2020-21.pdf

assessments and short-term forecasts are done using the most up-to-date data in order to estimate sustainable catch levels. Therefore, the data used encompasses changes in stock abundance and/or size at age, whether or not these are climate-driven, and it is assumed that climate change impacts do not need to be explicitly accounted for.

In addition, every five years (or so) ICES provide ecosystem overviews which are aimed at fisheries managers and include a climate change section which summarises the main climate change impacts to consider, although these are currently only at a high level.

The current ICES benchmarking[21] and catch advice accounts for climate change to a limited degree, however, in the longer term the single-stock advice currently used in mixed fisheries may not be sufficient to enable managers to anticipate and respond to climate change impacts adequately. At ICES level, mixed fisheries scenarios are available, which explore fish stocks interactions and are a first step towards an ecosystem approach to fisheries.

Fisheries policy authorities are keen to understand this further as new information becomes available.

In addition to the impacts of climate change on fisheries, and the need to adapt to these changes, it is also important to consider climate change mitigation (and net zero targets) in relation to fishing. The fishing sector contributes to carbon emissions through vessel emissions and transport of exports. In addition, fishing practices that disturb the seabed (e.g., trawling) may impact on carbon stored in marine habitats (i.e., 'blue carbon').

The JFS highlights the need to protect and restore blue carbon habitats to support resilience to climate change. Marine sediments are an important blue carbon store and seabed disturbance could lead to release of carbon dioxide (CO2) back into the atmosphere.

Research is currently underway to better understand the fate of carbon disturbed through bottom contact fishing and quantify the scale of any atmospheric emissions. This work is beginning to highlight those areas of the seabed which support the highest densities of organic carbon and where the stores are most vulnerable to remineralisation and losses from disturbance. This evolving evidence could support future consideration of measures to reduce impacts of demersal fishing on blue carbon (e.g. through spatial or technical fisheries management measures).

The total emissions of the UK fishing fleet were estimated as 802 kt CO2e in 2019 which is equivalent to 0.18% of UK total territorial emissions, or 0.66% of UK domestic transport emissions[22]. The fleet segments with the highest emissions are the Pelagic trawlers over 40m, North Sea Nephrops over 300kW, and within English

[21] ICES benchmark processes are organised to evaluate (and propose improvements to) the current data and assessment methodology for selected stocks and non-fishery topics for which ICES provides recurrent advice outside the annual assessment cycle. Benchmark processes are open to experts and stakeholders and are reviewed by external experts throughout. (WKBHMB)
[22] Towards Net Zero Carbon Fisheries - MF1291

waters, the South West beamers (over 250 kW). The carbon footprint (kg CO2e / kg fish) is highest in North Sea beam trawls over 300kW, with approximately 15kg CO2e per kg of fish landed[23]

Addressing many of these challenges are beyond the scope of this FMP. Under the climate change objective in the 2020 Act and JFS, as well as national strategies such as Scotland's Fisheries Management Strategy, the fisheries policy authorities will work in partnership with stakeholders to support fisheries in the drive to net zero and consider where and how we need to adapt our approaches to take account of the impacts of climate change.

The delivery of mitigation strategies for climate change is not within scope of this first iteration of this FMP. The FMP does, however, contain an objective to explore options for adapting fishery management to challenges presented by the changing climatic conditions. This FMP will be reviewed and adapted as research into climate change develops and new methods to address challenges from climate change are available.

FMP policies

In developing the policies and actions for this FMP, the fisheries policy authorities have considered the current policy landscape including applicable international agreements and declarations, conservation advice and wider policy development already underway, in addition to considering what additional evidence, measures or policies may be needed to support both the vision of this FMP and delivery of the fisheries objectives. In most cases, individual actions within this FMP will directly link to one or more of the fisheries objectives and these links are made below. FMPs are one of the tools that support the achievement of the fisheries objectives, although they are not the only policy vehicle available to do this. The fisheries policy authorities have also considered the conservation advice received from the SNCBs and included the outputs from that work in considering where policy action may be needed.

This FMP has been developed within the wider context of the Marine Plans in place in England, Scotland and Northern Ireland. As part of developing the new national marine plan for Scotland, the relationship between marine spatial planning and FMPs will also be considered, and how these policies can work in a joined-up way to ensure more effective use of the marine space and resources. Consideration will also be given to the objectives and principles outlined in the EU-UK Trade and Cooperation Agreement when considering implementing fisheries management measures.

In Scotland, these policies will help achieve the outcomes set out in the Good Food Nation Plan, and the vision of Scotland becoming "a Good Food Nation, where people from every walk of life take pride and pleasure in, and benefit from, the food they produce, buy, cook, serve, and eat each day".

[23] Assessing greenhouse gas emissions from UK Fishing Fleet — Seafish

In most cases further policy development work will be needed for any new actions, which could include further evidence gathering or public consultation, along with the completion of appropriate impact assessments. It should also be noted that Northern Shelf ling is a jointly managed stock, and therefore overall fishing opportunities are determined through international negotiation. The stock is also subject to different management measures in different areas of the sea by individual Coastal States.

As this is a shared stock with Coastal State partners, we will endeavour to work in cooperation to jointly deliver sustainable management and catching opportunities for this stock.

The policies and actions within this FMP reflect the fact that the evidence base underpinning the Northern Shelf ling stock needs to be improved, however, they also reflect that there are no immediate plans to do this given the prioritisation of other stocks of greater commercial importance and the need to agree appropriate steps with the EU prior to committing to firm actions. This is consistent with section 6(3)(b)(ii) and (iii) of the 2020 Act, which specifies that Fisheries Policy Authorities must specify steps to improve the scientific evidence base where this is needed, or provide reasons why no steps are proposed if this is in the case (see policy 2). In the absence of a more robust evidence base, the actions also reflect the current management action that is in place to continue to manage the ling stock in such a way as to maintain stock levels (policy 1) – this also addresses the requirement under section 6(3)(b)(i) of the 2020 Act.

The first two policies set out below largely relate to stock management, and the remaining policies set out actions in relation to wider sustainable management.

Policy 1: Continue to manage the Northern Shelf ling stock using existing tools to maintain stock levels

Rationale

Given the lack of a robust evidence base for Northern Shelf ling this FMP falls under section 6(3)(b) of the 2020 Act. That section of the Act requires the Fisheries Policy Authorities to specify policies for maintaining or increasing levels of the stock, and to specify steps to improve the scientific evidence (or provide reasons why no steps are proposed).

Prior to an improved evidence base being established, the Fisheries Policy Authorities will continue to take steps to manage the Northern Shelf ling stock, and to maintain the levels of the stock. As already set out within this FMP, fisheries authorities will continue to take a precautionary approach to TAC setting, and will continue to work with the EU with the aim of ensuring that sustainable management takes place.

Actions

Ongoing actions

- Take a precautionary approach to TAC setting, following the principles set out in the JFS until sufficient evidence is in place to make a robust assessment.

- Continue to work with the EU with the aim of maintaining the sustainable harvesting of the stock through international negotiations.

Relevant Fisheries Act objectives

The relevant Fisheries Act objectives are the:

- Sustainability Objective
- Precautionary Objective

Policy 2: Improve the evidence base underpinning the stock, in order to support sustainable harvesting of the Northern Shelf ling stock, with biomass maintained above the level capable of producing MSY

Rationale

The primary aim of FMPs, where there is not sufficient evidence to enable an assessment of MSY is to specify the steps (if any) that the relevant authority or authorities propose to take to obtain the scientific evidence necessary to enable an assessment of the stocks MSY to be made or, if not doing so, state reasons. This is in line with section 6(3)(b) of the 2020 Act. As part of this, the role of fisheries managers is to help ensure stocks are harvested sustainably, in order to protect the long term viability of the stocks and the fisheries that prosecute them.

The use of TACs is a fundamental part of sustainable management and the negotiation principles followed by the UK to help to ensure that the fishing pressure in the harvesting of Northern Shelf ling is kept within sustainable levels, whilst also taking account of relevant socio-economic factors. This is consistent with the sustainability objective of the 2020 Act. The lack of a robust evidence base for ling means that a precautionary approach to TAC setting is generally followed, in line with the approach taken in ICES advice, although this may also take account of socio-economic factors such as choke issues in the future.

The health of fish stocks can change over time and is also affected by a range of different factors not only fishing activity. At the time this FMP was produced the relevant fisheries policy authorities did not have sufficient evidence to estimate MSY reference points for the Northern Shelf ling fishery covered by this FMP, although the advice followed the ICES MSY approach under their framework for Category 3 stocks. Therefore, the FMP sets out a longer term path to improve the overall management approach by considering how the evidence base can be strengthened,

with any subsequent action focussed on restoring (if required) and then maintaining the stock at sustainable levels. As stated throughout this FMP, this is likely to take some time to deliver given the precedence given to other fish stocks.

The actions also reflect that this stock is managed internationally, therefore maintaining the stocks above the levels capable of producing MSY is a result of the joint management of the stock.

Actions

Ongoing actions

- Continue to use the best available data to underpin management decisions, and refine the management approach as additional information becomes available.

- Continue to participate in international stock assessments and contribute to the international advice process.

Medium to long term actions (three to five years)

- Subject to the EU's agreement, work with the EU to develop a roadmap for improving the evidence base for ling, including how the data can be strengthened and a more robust evidence base can be established.

- Subsequent actions for stock management will be dependent on the detail and timelines associated with the roadmap's development. It is not possible to determine what those actions may be until initial discussions have taken place with the EU and the scope for a roadmap agreed.

- Consider options to improve data gaps in assessments, including through the use of REM.

Relevant Fisheries Act objectives

The relevant Fisheries Act objectives are the:

- sustainability objective;
- precautionary objective;
- scientific evidence objective; and
- ecosystem objective.

Policy 3: Address discarding issues in the Northern Shelf ling fishery and ensure that where possible all catches are counted against quotas

Rationale

This policy is in accordance with section 4.2.8 ('Reducing Bycatch and Minimising Catches of Sensitive Species') of the JFS.

Similar to other fish stocks caught as part of the UK demersal fishery, there continue to be issues around unreported and illegal discarding taking place. This is not unique to Northern Shelf ling, and is a problem across demersal fisheries in the UK and beyond.

This issue means that it is difficult to account fully for all catches of fish, which can make sustainable long-term management challenging and can undermine consumer confidence in the fishery.

There are a number of historic drivers behind discarding, including lack of quota, catching undersized fish which either cannot be sold for human consumption or for which markets are not readily available. These issues are well documented and are one of the reasons behind the introduction of the landing obligation. A key aspect of tackling discarding is the need to ensure that the right technical measures are in place to reduce catches of unwanted fish (which can include non-target species and target species under the MCRS before they are caught). There is already a wide range of selectivity and other measures in place to support this, and the fishing industry themselves are adaptive in their approach to increasing selectivity onboard vessels. Further improvements are also possible, and this is reflected in the actions below.

As discussed, there is legislative requirement to land all quota species of fish, including Northern Shelf ling, under the landing obligation, and for fishers to ensure that all catches are counted and recorded. UK fisheries policy authorities have different approaches in place or in development to improve the operation of the current technology including REM. Actions to support improved accountability and recording of catches are outlined below.

Actions

Short term actions (one to two years)

- Subject to appropriate consultation and assessment, introduce new mandatory technical measures to support a reduction in unwanted catches through increased selectivity. In Scotland this will take place as part of the Future Catching Policy programme of work.

- Deliver improvements to the current management and rules to ensure that, wherever possible, all catches are accounted for against quotas. In Scotland this will be through the Future Catching Policy work.

Long term actions (three to five years)

- Develop a roadmap for rollout of REM in priority fisheries around the UK, with clear prioritisation criteria and implementation timetable.

- Support and enable fishers to develop and use more selective types of fishing gear and innovative practices, for example through the provision of funding or permitting gear trials.

- Collaborate with Coastal States partners to agree joint action on discards and improved technical measures through the Coastal States forum.

Relevant Fisheries Act objectives

The relevant Fisheries Act objectives are the:

- bycatch objective;
- scientific evidence objective; and
- sustainability objective.

Policy 4: Deliver wider sustainable management by taking steps to minimise the impact of the ling fishery on the marine ecosystem

Rationale

This policy is in accordance with section 4 ('Delivering Sustainable Management of Fisheries') of the JFS.

All forms of fishing have an impact on the marine environment and marine ecosystems to varying degrees, whether through the removal of target fish species, incidental bycatch of non-target fish or other marine species, or seabed interaction.

Understanding and minimising these impacts is an important part of delivering an ecosystem-based approach. The fishing industry is generally aware of the impact it can have on the marine environment and has taken a number of steps over previous years to try and mitigate against this, for example by using more selective fishing gears, or trialling new tools to reduce bycatch of non-fish species and seabirds. The conservation advice that supports this FMP has identified some impacts and evidence gaps that need to be addressed in order to reduce fishing impacts on the wider marine environment. In some cases, action is already being taken on this and there are a range of policies and initiatives already in place or in development across the UK which contribute to this. Therefore, the actions contained within the FMP may not be unique or new and, in recognition of the similarities between demersal fishing techniques that target mixed whitefish, they are not specific to the Northern Shelf ling fishery.

Fishing for Northern Shelf ling often utilises bottom-trawling techniques. Conservation advice has identified that bottom-trawling can have an adverse impact on seabed integrity and benthic habitats. The actions set out below recognise the work already being undertaken to better monitor the spatial footprint of fishing, and to introduce specific fisheries management measures where these are needed to protect specific marine features.

Conservation advice also suggests that elements of demersal fishing, can present a bycatch risk to certain sensitive species, for example the use of longline fishing methods (which is used as part of the Northern Shelf ling fishery). Conservation advice has identified the need for an improved evidence base in relation to bycatch, and the actions below recognise that further evidence is required to support actions in this area, alongside continuing work that is already underway.

Actions

Short-term actions (one to two years)

- Continue existing work to deliver increased understanding of benthic disturbance and impacts, by supporting improved accuracy of fisheries spatial data through the introduction of VMS for small fishing vessels under 12m and increasing the frequency of VMS reporting for fishing vessels 12m and over in length.

- Continue to implement fisheries management measures for existing Marine Protected Areas (MPAs), where these are not already in place, as well as the most vulnerable Priority Marine Features (PMFs) in Scottish inshore waters (0-12 nautical miles). Site specific fishing restrictions are proposed to ensure conservation objectives can be achieved and to support the sustainable use of the marine environment.

- Collaborate across the UK to implement the UK Marine Strategy Programme of Measures (POM).

- Support and enable the fishing industry to explore alternative gear options that can help reduce benthic impacts and bycatch of sensitive marine species including seabirds, for example through the provision of funding or licence derogations, building on the positive work already carried out in this area.

- Introduce additional voluntary and mandatory bycatch avoidance measures where these are needed. In Scotland, this will taken forward as part of the Future Catching Policy programme of work.

Medium- to long-term actions (three to five years)

- Continue the rollout of REM to key parts of the UK fishing fleet in order to improve data and knowledge of fishing activity, for example to monitor bycatch of sensitive marine species, and to improve spatial data on locations of fishing activity, with a clear roadmap and implementation plan in place.

- Continue to collect data in priority fleets under the UK Bycatch Mitigation Initiative to improve understanding of risk and frequency of sensitive species interactions, and the effectiveness of existing mitigation and avoidance measures.

- Continue to deliver actions under the UK Bycatch Mitigation Initiative to reduce the risk, frequency and impact of fisheries on sensitive marine species including seabirds.

- Collaborate across the UK to develop policy to reduce/eliminate sensitive marine species bycatch in the UK through regular information sharing across administrations, and collaborative working on projects.

- Continue to collect data in the Scottish whitefish and prawn trawler fleets through the Scottish Demersal Observer Programme to improve understanding of risk and frequency of sensitive species interactions, and the effectiveness of existing mitigation and avoidance measures, where applicable.

- Fisheries policy authorities will continue to seek to encourage the use of selective fishing gear and fishing techniques that have a reduced impact on the environment.

- Evaluate the short term actions set out above, alongside the cumulative impacts of wider marine spatial policies such as offshore renewables, in order to determine whether additional measures may be required in the future in order to reduce benthic disturbance.

- Promote existing good practice within the fishing industry in relation to handling of sensitive marine species and returning them to the sea unharmed, where practical to do so.

Relevant Fisheries Act objectives

The relevant Fisheries Act objectives are the:

- sustainability objective;
- ecosystem objective; and
- bycatch objective.

Policy 5: Support fishing businesses to deliver socio-economic and cultural benefits for communities

Rationale

The UK Government holds an ambition to enable fisheries to continue to deliver social and economic benefit to coastal communities to benefit present and future generations. As already set out in this FMP, Northern Shelf ling is a key species for the hook and longline fishing sector and it forms a key part of the business model for some fishing businesses. In turn, these businesses collectively support jobs and underpin local communities, providing a source of economic input and output and underpinning the rich cultural heritage of the UK at both a local and national level. Fish is also a rich source of protein and forms an important component of food production within the UK.

There is an ongoing role for Governments to help create the right conditions for businesses to operate sustainably and with certainty about the future.

Actions

Short-term and ongoing actions (one to two years)

- Continue to take account of socio-economic considerations as part of international negotiations and as part of the process to determine fishing opportunities.

- Continue to gather and use evidence on economic aspects of the fishery to ensure management decisions are informed by the best available evidence.

- Encourage and support initiatives to promote the consumption and value of ling.

Medium- to long-term actions (three to five years)

- Consider enhancing social and economic data.

Relevant Fisheries Act objectives

The relevant Fisheries Act objectives are the:

- equal access objective;
- national benefit objective; and
- sustainability objective.

Policy 6: Reduce the impact of fishing on climate change and support the fishing industry to adapt to the impacts of climate change

Rationale

This policy is in accordance with section 4.1 ('Delivering Sustainable Management of Fisheries - Our approach to Fisheries Management') of the JFS.

The evidence base underpinning climate change and fisheries is developing, and more work is needed to fully understand a) how carbon emissions can be reduced in a sustainable way, and b) the likely impacts of climate change on fish stocks and fishing communities and the scale / nature of change required to adapt.

We know that there are already changes to the distribution and size composition of the Northern Shelf ling stock as a result of climate change, but the overall impacts are not yet fully understood. The actions below consider how we can build and use an improved evidence base in order to make informed decisions on management action for the future.

In comparison to other forms of food production, fishing can provide a high-protein and low carbon method of production and offers opportunities to provide food security particularly as we move towards net zero. However, we also know that fishing vessels need to reduce fuel emissions in the future although there are no ready solutions in place for fishing vessels to currently utilise.

The actions set out below will also apply to other stocks in the fishery. However, as our evidence base grows, we will understand better the specific impacts of climate change on Northern Shelf ling, and the scale of change required to support vessels fishing for Northern Shelf ling to reduce their emissions and also adapt to changes in the Northern Shelf ling stock and general fishing conditions. These actions are likely to adjust over time and will become more refined.

Possible measures which could support this are already in development and / or being delivered. The FMP will support these measures, although it is not directly introducing or delivering them.

Actions

Medium to long term actions (three to five years)

- Collaborate with partners across government, industry, and academic sectors on initiatives to reduce environmental impacts of the Northern Shelf ling fishery (including CO2 emissions).

- Collaborate across the UK and internationally on further evidence and analysis to understand the impact of climate change on ling and develop options for how the ling fishery may adapt to climate change impacts in the future.

- As additional information becomes available in relation to climate change, explore the implications for this.

Relevant Fisheries Act objectives

The relevant Fisheries Act objectives are the:

- sustainability objective; and
- climate change objective.

Implementation and Monitoring

Implementation

This FMP proposes new actions but does not implement them. The actions contained within this FMP will be taken forward following its publication. However, it is important to remember that many of the actions are already underway and part of multi-year delivery programmes.

Indicators for monitoring the effectiveness of the plan and review process

This FMP contains a number of policies and actions intended to ensure that Northern Shelf ling fisheries covered by this FMP are fished sustainably with respect to an MSY approach and also to drive improvements in the overall management approach.

There is insufficient evidence to determine MSY or a proxy for MSY for the Northern Shelf ling. This FMP sets out long-term next steps to build the evidence base for this data limited stock to support progress towards defining and measuring stock status and reporting on stock sustainability. An increase in the available evidence to define and measure stock status will be an indicator of the effectiveness of this plan for this stock.

The policies and actions within this FMP will be reviewed as part of the three year review cycle for the JFS. In addition, as set out within the 2020 Act and the JFS, this FMP will be reviewed at least every six years. An earlier review may be triggered in light of a change to relevant evidence, international obligations, or wider events. The decision to review earlier will be taken by the fisheries policy authorities. The review of the FMP will include a report on individual policies and actions and whether they have been a) implemented and b) any known interactions between the actions and health of the stock.

Glossary

CO2e - Carbon Dioxide equivalent
A metric measure used to compare the emissions from various greenhouse gases based upon their global warming potential.

ICES - The International Council for the Exploration of the Sea
Global organization that develops science and advice to support the sustainable use of the oceans.

MSY - Maximum Sustainable Yield
The maximum sustainable yield (MSY) for a given fish stock means the highest possible annual catch that can be sustained over time, by keeping the stock at the level producing maximum growth. The MSY refers to a hypothetical equilibrium state between the exploited population and the fishing activity.
When discussing “MSY”, it is essential to distinguish between 3 closely related concepts: MSY, BMSY and FMSY.

MSY Btrigger
MSY Btrigger is the parameter in the ICES MSY framework which triggers advice on a reduced fishing mortality relative to FMSY

BMSY - Biomass Maximum Sustainable Yield
MSY is supported by a stable population size known as BMSY (= “biomass MSY”). Consequently, “reaching MSY” means rebuilding fish populations to the BMSY level, in order to be able to support the level of annual catches known as MSY

FMSY- Fishing Mortality Maximum Sustainable Yield
FMSY (= “fishing mortality MSY”) is a catch rate (resulting from dividing MSY – an annual catch - by BMSY – a population size).
When the fish population is at BMSY and the fishing fleet is catching an annual amount of fish equal to MSY, then the resulting fishing mortality is FMSY.

CFP - Common Fisheries Policy
The CFP is a set of rules for managing European fishing fleets and for conserving fish stocks. Designed to manage a common resource, it gives all European fishing fleets equal access to EU waters and fishing grounds and allows fishermen to compete fairly. The CFP aims to ensure that fishing and aquaculture are environmentally, economically and socially sustainable and that they provide a source of healthy food for EU citizens. Its goal is to foster a dynamic fishing industry and ensure a fair standard of living for fishing communities.

Coastal State
Under the International Council for the Exploration of the Sea (UNCLOS), a Coastal State has responsibilities which involve joint management of fisheries resources, have an obligation to set an allowable catch and to grant other States fisheries access if (and only if) they [do] not have the capacity to harvest the entire allowable catch themselves.

A Coastal State by default controls its own Exclusive Economic Zone (EEZ) out to 200 nautical miles. Access to these waters can be traded on an annual basis. Traditionally, in return for quota where another Coastal State is authorised to catch an amount of its quota share in another Coastal State's waters. This is helpful when the stock is seasonal or migratory in nature.

Choke species
Choke refers to a situation that may occur when the quota opportunities for one stock in a mixed fishery may limit the ability of fishing vessels to maximum catches of another stock because the available quota is limited. Fisheries policy authorities take account of potential choke problems as part of the setting of quota opportunities.

Fisheries 2020 Act
Of most relevance to this consultation, we note the 2020 Act creates a legal requirement for the UK's four national fisheries policy authorities (Marine Management Organisation (MMO), Scottish Ministers, Welsh Ministers, and the Department of Agriculture, Environment and Rural Affairs of Northern Ireland) to produce a Joint Fisheries Statement (JFS) that will lay out how the objectives set out in the Act will be met.

Fisheries Policy Authorities
The Secretary of State, Scottish Ministers, Welsh Ministers and the Department of Agriculture, Environment and Rural Affairs in Northern Ireland.

Fishing quotas
Fish quotas are the amounts of fish of different species that may be legally landed by EU Member States.

The purpose of quota management arrangements in Scotland is to enable the fishing industry to make full use of the fishing opportunities which we receive every year from the EU, while ensuring that quotas are not exceeded.

FMP - Fisheries Management Plan
An FMP is a document prepared and published under the 2020 Act that sets out policies designed to restore one or more stocks of sea fish to, or maintain them at, sustainable levels or contribute to the restoring or maintenance at sustainable levels. It is an evidence-based action plan that supports delivery of sustainable fisheries for current and future generations. The FMP is a long-term plan that must be reviewed and, if necessary, revised at least once every six years. It sets out both a vision for

the fishery (or fisheries), together with the policies and management interventions necessary to achieve this vision.

FLim - Limit reference point for fishing mortality
Limit reference point for fishing mortality (mean over defined age range)

GES - Good Environmental Status
Good environmental status (GES) means the environmental status of marine waters where these provide ecologically diverse and dynamic oceans and seas which are clean, healthy and productive within their intrinsic conditions, and the use of the marine environment is at a level that is sustainable, thus safeguarding the potential for uses and activities by current and future generations.

JFS - Joint Fisheries Statement
The JFS sets out the policies of the fisheries policy authorities for achieving, or contributing to the achievement of, the Fisheries 2020 Act's eight fisheries objectives and forms part of the UK Fisheries Management and Support Framework (the Fisheries Framework). The JFS sets out the ambition of the UK to continue delivering world class, sustainable management of fisheries in line with those objectives and how it will do so. The JFS defines how the fisheries policy authorities have understood the fisheries objectives and how we will apply them to fisheries policy.

MAP - Multi Annual Plans
Multi Annual Plans (MAP) - MAPs are a tool used to manage fisheries with the goal of ensuring the sustainable exploitation of fish stocks and which aim to maintain fish populations at levels that can produce a maximum sustainable yield

MPAs - Marine Protected Areas
Marine protected areas are one of the mechanisms used to ensure protection of some of the most vulnerable species and habitats. In Scotland, the MPA netwok covers aproximately 20% of Scottish seas.
UK Marine Strategy Regulations 2010

The UK Marine Strategy Regulations 2010 require the UK to take the necessary measures to achieve or maintain Good Environmental Status (GES) through the development of a UK Marine Strategy.

OSPAR - Convention for the Protection of the Marine Environment of the North-East Atlantic
OSPAR is the mechanism by which 15 Governments & the EU cooperate to protect the marine environment of the North-East Atlantic.

PMFs - Priority Marine Features
Priority marine features (PMFs) are habitats and species that are considered to be marine nature conservation priorities in Scottish waters.

REM - Remote Electronic Monitoring
REM cameras are used for monitoring fishing activities, collecting data and assuring best practice.

Scottish (territorial) waters
Scottish waters come under the jurisdiction of Scots law, and are also used for defining the area of operation of Marine Scotland, the Scottish Environment Protection Agency, and other Scottish Government agencies and public bodies.

SSB - Spawning stock biomass
Total weight of all sexually mature fish in the stock.

SSFI - Scottish Sustainable Fishing Index
The Scottish Sustainable Fishing Indicator (SSFI) summarises the recent trends in fishing mortality for these stocks, as compared with the estimated fishing mortality rates that should lead to the maximum sustainable yield.

TACs - Total Allowable Catches
Total allowable catches (TACs) or fishing opportunities, are catch limits (expressed in tonnes or numbers) that are set for most commercial fish stocks. The Commission prepares the proposals, based on scientific advice on the stock status from advisory bodies such as ICES and Scientific, Technical and Economic Committee for Fisheries (STECF).

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Any enquiries regarding this publication should be sent to us at

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