

Annex B: Fisheries Prioritisation Evidence Review

Contents

Contents	1
Summary	2
Objectives	2
Methodology	2
How fisheries were defined.....	3
Gear types.....	3
Vessel sizes	4
Locations.....	4
How questions were answered and assessed.....	5
Policy questions	6
Practical questions	6
Outputs	7
Proposed priority fisheries.....	7
Fishery A – Pelagic trawls all English Waters	10
Fishery B – Demersal seines English waters of the Southern North Sea and English Channel (ICES areas 4c, 7d and 7e).....	10
Fishery C – Demersal trawls using mesh sizes up to 120mm, English waters of the North Sea (ICES area 4b)	11
Fishery D – Fixed and drift nets (gill and trammel) English waters of the Celtic Sea and English Channel (ICES areas 7e-j)	12
Fishery E – Demersal trawls, including beam trawls, English waters of the Celtic Sea and English Channel (ICES areas 7e-j).....	13
Complete list of fisheries considered.....	13

Summary

As part of the process of developing the proposals set out in the consultation on the expansion of remote electronic monitoring in English waters Defra conducted an evidence review. The objective of this work was to identify priority fisheries for remote electronic monitoring as part of taking a targeted, fishery by fishery, approach.

The review was a tool for Defra to support evidence-led decisions. It was designed as a system to bring together experts and the best available information across a range of factors, building a robust evidence base, to inform the selection of the priority fisheries that are proposed in the consultation. It involved input from fishing industry representatives and non-governmental organisations (NGOs) as well as the Centre for Environment, Fisheries and Aquaculture Science (Cefas), the Marine Management Organisation (MMO) and Natural England.

The methodology of the review involved a qualitative assessment of fisheries across English waters on their data needs, and the suitability of remote electronic monitoring as a tool to address these needs, as well as the relative achievability of setting up initial programmes.

As a result of the review, we identified five initial priority fisheries. These are proposed in the consultation and are outlined below in [Table 3](#).

This annex explains our objectives, methodology, and how fisheries were defined. It also provides information on both the proposed priority fisheries and the fisheries that have not been selected at this stage. The consultation seeks feedback on the priority fisheries, and we may revisit the evidence review depending on that feedback.

Objectives

The objectives for the evidence review were:

- To determine which fisheries should be prioritised for remote electronic monitoring
- To identify which policy priorities should be the focus for each priority fishery
- To identify which fisheries could be grouped together into one programme
- To signal trade-offs between programmes, as well as potential challenges

Methodology

A wide range of information was considered as part of the review process. In line with the objectives for the review, the methodology involved the assessment and comparison of fisheries in English waters across important [policy](#) and [practical questions](#) to enable the selection of priorities for remote electronic monitoring.

At the start of the process, the list of fisheries (65 in total) was generated, and stakeholder feedback was sought to ensure that fisheries were not absent from the list. The decision

was made to exclude fisheries where it was clear from the outset that remote electronic monitoring technology would not be viable, such as handwork fisheries.

With the list confirmed, a series of important policy and practical questions were drafted and revised in line with stakeholder feedback. The feedback we received emphasised the importance of reflecting a wide range of potential applications for remote electronic monitoring; that fisheries selected as priorities should deliver data for science as well as fisheries management.

How fisheries were defined

Fisheries were defined following an approach developed together with Cefas that groups fisheries by the specific gear type they use, the size of the vessel (whether over 10 or under 10 metres (m) in length) the location they are active in, and the main species they catch. Some fisheries that target a particular species, such as demersal trawl fisheries that target prawns (*Nephrops norvegicus*) or Brown Shrimp (*Crangon crangon*), were considered as distinct fisheries. A [complete list of the fisheries considered](#) in the review is set out below.

These definitions are imperfect: many fishers use several gear types and fish across several locations. However, this approach ensured that we could successfully review the evidence and identify distinct fisheries for remote electronic monitoring. After the review was complete, the definition of the priority fisheries was further refined to ensure that the intended application within the fishery was proportionate and targeted to the activity. We welcome feedback in the consultation on how the fisheries are defined.

Each of the grouping factors are explained in more detail in the following sections.

Gear types

A wide range of gear types were considered representing the majority of English fisheries as shown in the [Table 1](#) below and the [complete list of fisheries considered](#). Gears were grouped based on similar fishing operations that target specific groupings of species, using a specific gear.

Table 1: Gear types

Gear type	Further information
Dredges	Towed dredges
Pots and traps	n/a
Longlines and hooks	Set longlines, longlines, hooks and lines, handlines
Demersal seines	n/a
Demersal trawls	Otter trawls, twin-rig, pair trawls

Gear type	Further information
Beam trawls	n/a
Midwater trawls	Pair trawls, single trawls
Purse seines	n/a
Gillnets and trammel nets	Drift and fixed nets
Miscellaneous	Hand-working

Vessel sizes

Under-10m and over-10m vessels were considered as separate fisheries. In some cases, an over or under-10m fishery could not be identified. For the fisheries identified as proposed priorities we further considered whether the vessel size should be refined to focus on those vessels undertaking the majority of activity within the fishery. This was the case for the pelagic fishery, where the majority of landings are made by pelagic vessels over-24m in length.

We welcome feedback in the consultation on our approach to vessel sizes and will continue to consider feedback as to whether the cut-off needs to be refined for other fisheries.

Locations

The fisheries were attributed to four distinct areas within English waters.

Table 2: Fisheries locations within English waters only

Location	ICES Areas
Celtic Sea and English Channel	7e-j
Northern North Sea	4b
Southern North Sea and English Channel	4c and 7d
Irish Sea	7a

Fisheries, and fisheries monitoring, is largely devolved so only English waters fisheries were assessed as part of the review. The limitations of this approach are acknowledged. Many vessels fish across areas and jurisdictions, some fish stocks are widely dispersed and others straddle administrative boundaries. A role for the proposed steering groups for priority fisheries will be to consider the risks and mitigations where remote electronic monitoring requirements vary across jurisdictions.

For fisheries identified as likely priorities we further assessed whether areas could be grouped together. This was considered to be appropriate for the pelagic trawl fisheries and

so we grouped together all English waters rather than keeping each location as a separate fishery.

We welcome feedback in the consultation on how the fisheries are defined, including location.

How questions were answered and assessed

As a qualitative assessment that aimed to consider the information in the round, the [policy](#) and [practical questions](#) asked of each fishery highlighted potential focus areas for remote electronic monitoring and do not necessarily demonstrate anything specific or exemplary about any of the fisheries when viewed in isolation.

There was a varied availability of data to answer each question and gaps were acknowledged in the process. In some cases, gaps contributed to a raise in priority level if the absence of information was considered to show a consistent data gap, as opposed to a lack of held evidence. Because of the number of fisheries to assess, the policy questions were used to reduce the list of fisheries down to a viable number (26 in total) where the data suggested the greatest benefits and opportunities for remote electronic monitoring.

We then asked the practical questions of the remaining 26 fisheries to further reduce the list. It was at this stage, supported by evidence of the practical considerations of remote electronic monitoring implementation, that under 10-metre fisheries were excluded (leaving 15 fisheries in total).

The decision to focus on vessels over 10-metres in length at this stage reflects the need for the expansion of remote electronic monitoring in English waters to be proportionate, achievable and pragmatic. It was based on three main considerations:

Firstly, the aim for the implementation of remote electronic monitoring in the priority fisheries to be proportionate to the level of activity, potential for impact, and data objectives.

Secondly, under 10-metre vessels in some fisheries make up the majority of the fleet. This would likely present a challenge where we need to take time to build our capacity for making use of the data that remote electronic monitoring collects, risking successful implementation.

Finally, there are additional practical considerations with vessels under-10 metres, which may lack the space on board for remote electronic monitoring equipment, and for whom the cost of remote electronic monitoring would be disproportionate to their potential for profit.

For the remaining 15 over 10-metre fisheries we then assessed the benefits and opportunities for remote electronic monitoring alongside the practical considerations. Five priority fisheries emerged where there are significant opportunities for remote electronic monitoring and/or where implementation is proportionate and achievable.

Policy questions

The policy questions (asked of all 65 fisheries) involved four groups of questions and sub-questions:

1. Data gaps
 - a. Fishing mortality
 - b. Sensitive species interactions
 - c. ICES stock assessment data availability
 - d. Non-quota stocks
2. Risks to the sustainability of the fishery
 - a. Risk of discarding¹
 - b. Relevant ICES advice
 - c. Risk of displacement impacting fishery resilience
3. Risks to environmental sustainability
 - a. Risk of sensitive species bycatch
 - b. Risk to Good Environmental Status
4. Existing fisheries management measures and policy (regulatory opportunities and burdens)

Sources of information were identified with the support of Cefas and the MMO, compared across all chosen fisheries.

In some cases, the information gathered indicated where remote electronic monitoring should be prioritised. In other cases, the information highlighted where remote electronic monitoring may not currently be the right monitoring tool for the fishery, in the context of other factors.

Practical questions

The practical questions (asked of 26 fisheries) looked at the relative achievability and impact of implementing remote electronic monitoring in the fisheries prioritised. The information in this part of the evidence review broadly included:

1. Scope and impact
 - a. UK and non-UK landings and number of vessels
 - b. Main species covered
 - c. Accredited fisheries
 - d. Technical requirements
 - e. Financial implications (for government and participating vessels)
2. Upcoming management or trials in specific areas, or for specific species
 - a. England-led Fisheries Management Plans (FMPs)
 - b. Marine Protected Areas (MPAs) and Highly Protected Marine Areas (HPMAs)
3. Historic experience gained from trialling remote electronic monitoring

¹ Informed by the Sustainability Risk Research conducted by Cefas in 2022

4. Historic compliance risk

The information gathered informed a rounded assessment of the above factors, resulting in the selection of five priority fisheries.

Outputs

A main objective of the review was to select priority fisheries for remote electronic monitoring. That a specific fishery is not included in the reduced list, or wasn't selected as a priority, does not mean that there isn't potential application or need for remote electronic monitoring. On the contrary, the review demonstrates clear opportunities for data collection with benefits for stakeholders and fisheries management across the large majority of commercial fishing activity, in many different forms. For example, fisheries such as scallop dredge fisheries, and demersal trawl fisheries in locations other than the Celtic Sea indicate clear opportunities for remote electronic monitoring.

In the final stages however, it was necessary to prioritise between closely competing fisheries. These decisions were informed by the process set out at the beginning of this annex to assess fisheries on their data needs, and the relative achievability of setting up initial projects.

The fisheries that have not been selected as priorities in this instance were assessed to be of lower relative policy priority and achievability for the first stages of fishery-wide remote electronic monitoring implementation.

The priority fisheries will remain flexible and part of an ongoing discussion with stakeholders, rather than being chosen by Defra in isolation. The consultation is the final stage of the evidence review, to test the priority fisheries with all stakeholders and gather any evidence and feedback that has not been captured in the review process. The following priorities, identified as the output of this review, remain subject to review as part of this ongoing conversation.

Proposed priority fisheries

The proposed priority fisheries identified by the evidence review are as follows:

Table 3: Proposed priority fisheries

Priority Fishery	Vessel size (m)	Gear type	Fishing location (See Annex C of the consultation for charts)
Fishery A	Over 24m	Pelagic trawls	All English waters
Fishery B	Over 10m	Demersal seines (flyseines)	English waters of the Southern North Sea and English Channel (ICES areas 4c, 7d and 7e)

Fishery C	Over 10m	Demersal trawls using mesh sizes up to 120mm	English waters of the North Sea (ICES area 4b)
Fishery D	Over 10m	Fixed and drift nets (gill and trammel)	English waters of the Celtic Sea and English Channel (ICES areas 7e-j)
Fishery E	Over 10m	Demersal trawls including beam trawls	English waters of the Celtic Sea and English Channel (ICES areas 7e-j)

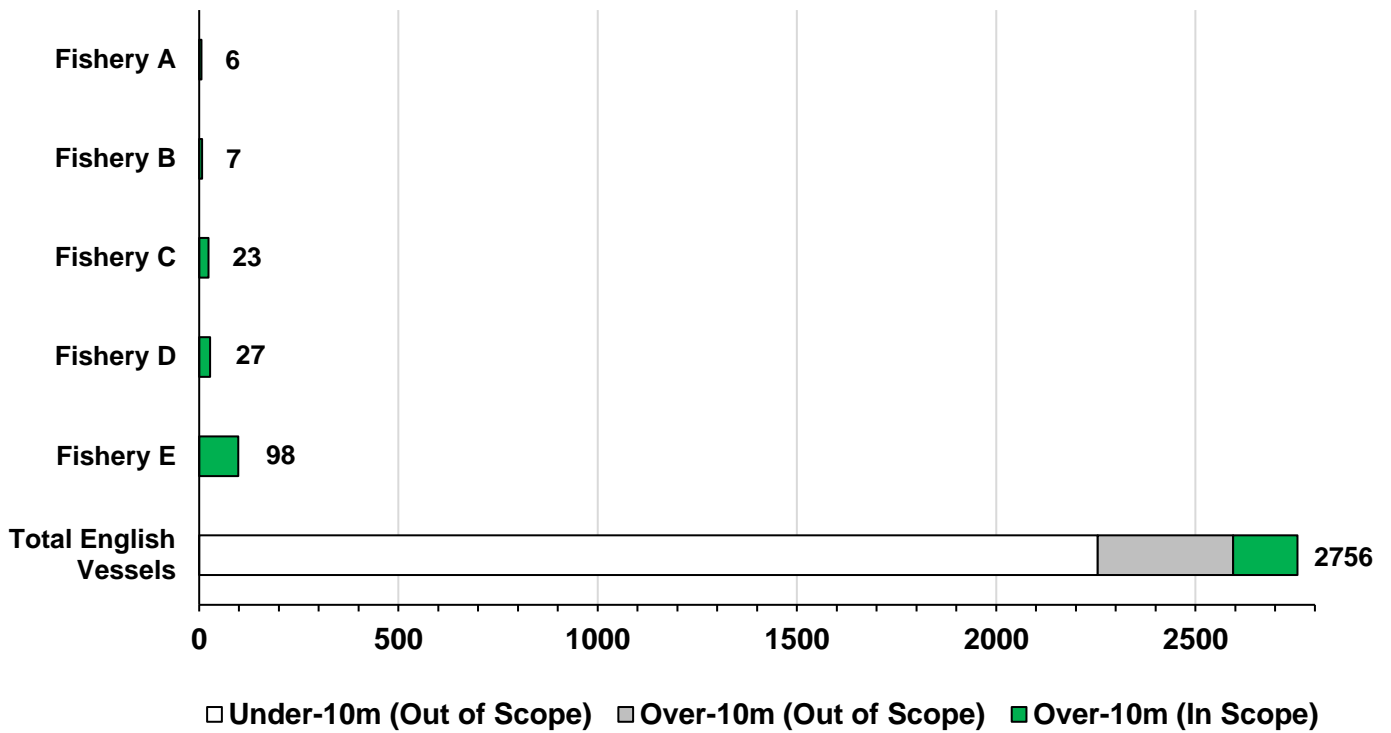
The scope of the proposed priority fisheries is shown in Figure 1 below. In total 161 over-10m vessels are currently in scope of our proposal, out of a total of 2756 English vessels (~5.8%), based on 2021 MMO fleet statistics.²

Of these, 2255 are under-10m vessels and out of scope, with 340 over-10m vessels also currently excluded. Looking at the specific fisheries and how many vessels are in scope from the total over-10m fleet, Fishery A equates to ~1.2%, Fishery B to ~1.4%, Fishery C to ~4.6%, Fishery D to ~5.4% and Fishery E to ~19.6% of the over-10m fleet.³

² The 2021 year class was used because the evidence review was undertaken during 2022, when 2021 was the most recent complete set for landings statistics and fleet information. It is acknowledged that vessel landings and fishing operations fluctuate from year to year. The use of this information and one year only, is intended to demonstrate a snapshot of these fisheries in time, rather than presenting an exact figure.

³ [UK sea fisheries annual statistics report 2021 - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/100222/sea-fisheries-annual-statistics-report-2021.pdf) – Section 1 Fleet

Figure 1: Number of English vessels in each proposed priority fishery when compared to the number of under-10 metre and over-10 metre vessels in the English fleet that are in and out of scope of this proposal, as per 2021 MMO fleet statistics.⁴



⁴ [UK sea fisheries annual statistics report 2021 - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/101422/sea-fisheries-annual-statistics-report-2021.pdf) – Section 1 Fleet

Fishery A – Pelagic trawls all English Waters

Evidence Review Summary

Number of English Vessels	6
Main Quota Species	Blue whiting, boarfish, hake, herring, horse mackerel, mackerel, sprat.
Main Non-Quota Species	Albacore, pilchards.
Remote Electronic Monitoring Benefits and Opportunities	The key benefits identified that remote electronic monitoring could provide in this fishery include full catch composition information and verification, alongside information on sensitive species interactions to aid filling existing scientific data gaps. This fishery was also considered to be sufficiently economically resilient to support the implementation of remote electronic monitoring, the low number of vessels and advanced technology already used in the fishery were also achievability opportunities identified.
Fisheries Management Plans	Celtic Sea and Western Channel Pelagic
Comment	The definition of the fishery was further revised after the review was completed, to over 24m vessels to reflect the majority of activity undertaken. As a result fewer vessels than those noted above are anticipated in this fishery. Due to the nature of the activity fishing across all areas, this fishery was grouped from across all locations into the one fishery.

Fishery B – Demersal seines English waters of the Southern North Sea and English Channel (ICES areas 4c, 7d and 7e)

Evidence Review Summary

Number of English Vessels	7
Main Quota Species	Plaice, skates and rays, whiting.
Main Non-Quota Species	Dab, gurnards, surmullet, cuttlefish, pouting, squid, starry smoothhound.

Remote Electronic Monitoring Benefits and Opportunities	The key benefits identified that remote electronic monitoring could provide in this fishery includes better catch composition information and verification to inform management through improved scientific data and monitoring capacity and improved data on non-quota species. There is a significant opportunity to fill scientific data gaps which has been considered in the context of the level of existing management in place for this fishery.
Fisheries Management Plans	Southern North Sea and Eastern Channel Mixed Flatfish; Southern North Sea and Channel Skates and Rays
Comment	The definition of this fishery location was further refined after the review was completed to include ICES area 7e following feedback on the location of the same demersal seine activity across these areas.

Fishery C – Demersal trawls using mesh sizes up to 120mm, English waters of the North Sea (ICES area 4b)

Evidence Review Summary

Number of English Vessels	23
Main Quota Species	Nephrops norvegicus (prawn), whiting.
Main Non-Quota Species	N/A
Remote Electronic Monitoring Benefits and Opportunities	The key benefits identified that remote electronic monitoring could provide in this fishery include improved information on discards to inform management through improved scientific data and monitoring capacity. Previous and ongoing involvement with remote electronic monitoring trials means this fishery provides an opportunity to utilise existing knowledge and experience to inform formal implementation. These benefits were weighed against potential displacement risks and existing marine activities and/or management that overlaps with this fishery.
Fisheries Management Plans	N/A

Comment	The definition of this fishery was refined to include specific gear information to demonstrate that the fishery referred to is the crustacean (prawn, <i>Nephrops norvegicus</i>) fishery. Prawn fisheries were considered as separate fisheries from other demersal trawl activity targeting different species in the evidence review.
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Fishery D – Fixed and drift nets (gill and trammel) English waters of the Celtic Sea and English Channel (ICES areas 7e-j)

Evidence Review Summary

Number of English Vessels	27
Main Quota Species	Skates and rays, cod, haddock, hake, ling, mackerel, anglerfish, pollock, saithe, whiting, blonde ray, spurdog
Main Non-Quota Species	Anchovy, brown crab, crawfish, lesser spotted dogfish, pilchards, smoothhound, spider crabs, starry smoothhound, turbot
Remote Electronic Monitoring Benefits and Opportunities	The key benefits identified that remote electronic monitoring could provide in this fishery include improved catch and discards information to inform management through improved scientific data and monitoring capacity, improved data on non-quota species and data on interactions with sensitive species. This fishery has significant potential to provide information to help fill a wide range of existing scientific data gaps. This fishery was also considered to have some, limited, economic resilience to support achieving remote electronic monitoring implementation. These factors have been considered in the context of the level of existing management in place for this fishery.
Fisheries Management Plans	Celtic Sea and Western Channel Demersal; Celtic Sea and Western Channel Pelagic

Fishery E – Demersal trawls, including beam trawls, English waters of the Celtic Sea and English Channel (ICES areas 7e-j)

Evidence Review Summary

Number of English Vessels	98
Main Quota Species	Haddock, cod, hake, ling, megrim, anglerfish, nephrops (Nephrops norvegicus), plaice, sole, whiting, pollock, skates and rays
Main Non-Quota Species	Bass, bluemouth redfish, brill, conger eels, brown crab, cuttlefish, dogfish, gurnards, lemon sole, john dory, pouting, scallops, smoothhound, common octopus, surmullet, turbot, witch, dab, squid, sand sole, skates and rays
Remote Electronic Monitoring Benefits and Opportunities	The key benefits identified that remote electronic monitoring could provide in this fishery includes improved catch and discards information to inform management through improved scientific data and monitoring capacity, as well as improved data on non-quota species, and mixed species fisheries. There is a significant opportunity to fill scientific data gaps in this fishery alongside previous experience of trialling remote electronic monitoring, providing opportunities to link with, and learn from, existing scientific remote electronic monitoring work. This fishery was also considered as having some, limited, economic resilience to support achieving remote electronic monitoring implementation.
Fisheries Management Plans	Celtic Sea and Western Channel Demersal
Comment	The over 10m demersal trawl and beam trawl fisheries considered separately in the assessment have been grouped together in the definition of this fishery, reflecting the priority level across both fleets and their similarities in target species, gear type and activity.

Complete list of fisheries considered

Those highlighted in **yellow** below indicate the fisheries that were asked both policy and practical questions.

Location	Gear types	Vessel size (metres)
Celtic Sea	Otter trawl – demersal	Over 10
Celtic Sea	Otter trawl – demersal	Under 10
Celtic Sea	Beam trawl – demersal	Over 10
Celtic Sea	Beam trawl – demersal	Under 10
Celtic Sea	Fixed and/or drift nets	Over 10
Celtic Sea	Fixed and/or drift nets	Under 10
Celtic Sea	Dredges	Over 10
Celtic Sea	Dredges	Under 10
Celtic Sea	Hook and line	Over 10
Celtic Sea	Hook and line	Under 10
Celtic Sea	Demersal seines	Over 10
Celtic Sea	Demersal seines	Under 10
Celtic Sea	Pots and traps	Over 10
Celtic Sea	Pots and traps	Under 10
Celtic Sea	Trawl – midwater	Over 10
Celtic Sea	Trawl – midwater	Under 10
Celtic Sea	Purse seines – midwater	Over 10
Celtic Sea	Purse seines – midwater	Under 10
Celtic Sea	Otter trawl (<i>nephrops</i>)	Over 10
Celtic Sea	Otter trawl (<i>nephrops</i>)	Under 10
Northern North Sea	Otter trawl – demersal	Over 10
Northern North Sea	Otter trawl – demersal	Under 10
Northern North Sea	Beam trawl – demersal	Over 10
Northern North Sea	Beam trawl – demersal	Under 10
Northern North Sea	Fixed and/or drift nets	Over 10
Northern North Sea	Fixed and/or drift nets	Under 10
Northern North Sea	Dredges	Over 10
Northern North Sea	Dredges	Under 10
Northern North Sea	Otter trawl (<i>nephrops</i>)	Over 10

Location	Gear types	Vessel size (metres)
Northern North Sea	Otter trawl (<i>nephrops</i>)	Under 10
Northern North Sea	Demersal seines	Over 10
Northern North Sea	Pots and traps	Over 10
Northern North Sea	Pots and traps	Under 10
Northern North Sea	Hook and line	Over 10
Northern North Sea	Hook and line	Under 10
Northern North Sea	Trawl – midwater	Over 10
Southern North Sea	Otter trawl – demersal	Over 10
Southern North Sea	Otter trawl – demersal	Under 10
Southern North Sea	Beam trawl – demersal	Over 10
Southern North Sea	Beam trawl – demersal	Under 10
Southern North Sea	Fixed and/or drift nets	Over 10
Southern North Sea	Fixed and/or drift nets	Under 10
Southern North Sea	Dredges	Over 10
Southern North Sea	Dredges	Under 10
Southern North Sea	Hook and line	Over 10
Southern North Sea	Hook and line	Under 10
Southern North Sea	Demersal seines	Over 10
Southern North Sea	Pots and traps	Over 10
Southern North Sea	Pots and traps	Under 10
Southern North Sea	Trawl – midwater	Over 10
Southern North Sea	Trawl – midwater	Under 10
Southern North Sea	Beam trawl – demersal (brown shrimp)	Over 10
Southern North Sea	Beam trawl – demersal (brown shrimp)	Under 10
Irish Sea	Otter trawl (<i>nephrops</i>)	Over 10
Irish Sea	Otter trawl (<i>nephrops</i>)	Under 10
Irish Sea	Otter trawl – demersal	Over 10
Irish Sea	Otter trawl – demersal	Under 10
Irish Sea	Fixed and/or drift nets	Under 10

Location	Gear types	Vessel size (metres)
Irish Sea	Dredges	Over 10
Irish Sea	Dredges	Under 10
Irish Sea	Hook and line	Under 10
Irish Sea	Pots and traps	Over 10
Irish Sea	Pots and traps	Under 10
Irish Sea	Beam trawl – demersal	Over 10
Irish Sea	Beam trawl – demersal	Under 10

17th July 2023