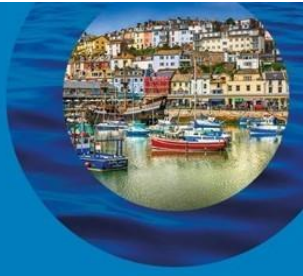
Marine Management Organisation

Department for Environment, Food & Rural Affairs



Southwest brown crab trial group: options paper

May 2025

...ambitious for our seas and coasts

Contents

1. Introduction 3

1.1. Structure of this document 3

2. What is the scope of this trial? 4

3. Legislative considerations 4

4. Management options for the trial 5

Harmonisation of brown crab MLS 5

Pot counting 7

200 t limit at 6 nm boundary 9

Gear specific areas 11

5. Other options considered 13

Days at Sea (DAS) 13

Vessel size/power approach 13

ICES rectangle approach 13

Pot limits 14

Closures based on sex and season 14

6. Next steps 15

7. Stay in touch 15

Annex 1. Legislative considerations 17

Annex 2. FMP background 18

Annex 3. Crab trial area 19

Annex 4. Existing management measures 20

Annex 5. Landings data 22

Annex 6. Pot number options 24

1. Introduction

In this paper the Marine Management Organisation (MMO) and Department of Environment, Food and Rural Affairs (Defra) outline brown crab trial options for the southwest region of England. These options are considered effective at addressing stakeholder concerns and are likely feasible from a regulatory perspective. They have also been considered against necessary legislative and policy requirements (please see Annex 1).

This work is to deliver against proposal 3 of the crab and lobster Fisheries Management Plan (FMP) – to pilot (trial) finer scale management for brown crab and lobster in selected fishery units. Further information of the FMP is available in Annex 2 of this document and on the GOV.UK website in the hyperlink above.

This paper provides background information for the Southwest crab trial group, who will consider management options and feedback at future meetings. There may be some desirable management options that are not listed, please include those in the feedback. MMO and Defra want to ensure that a wide range of trial options have been explored, and the final option(s) have been delivered collaboratively with stakeholders.

Feedback on this paper from the Southwest crab trial group will help inform measures that will be shared during wider stakeholder engagement events/quayside visits. The outcomes from engagement will allow MMO and Defra to shortlist a final option(s), progress through to implementation and test to ensure all relevant legislation and policy requirements are met.

After the engagement events MMO and Defra will be required to consider what further engagement is needed. This will depend on the specific measure(s) preferred and the level of stakeholder support during engagement.

1.1. Structure of this document

Section 2 sets out the scope of the trial such as the geographic area and objectives.

Section 3 includes background to the legislative and policy considerations.

Section 4 outlines the options that MMO and Defra think are feasible for the southwest crab trial.

Section 5 contains some options that have been considered, but MMO and Defra feel are unsuitable at this point of time.

Section 6 describes MMO's and Defra's intended next steps for trial engagement.

Section 7 provides details on how to stay in touch and further information.

The annexes provide further information to support your review of this paper and contain the following:

- Annex 1: legislative considerations
- Annex 2: FMP background
- Annex 3: crab fishery unit/trial area map
- Annex 4: summary of existing management measures
- Annex 5: landings data
- Annex 6: pot counting options (remote electronic monitoring 'REM' projects).

2. What is the scope of this trial?

The Western English Channel crab fishery unit 'CFU', also referred to as the Southwest brown crab CFU, mainly sits within ICES sub area 7e, extending eastward including the eastern section of ICES sub area 7d (Annex 3, figure 2). This CFU was highlighted in the FMP for priority management due to the stock size being considered near maximum sustainable yield (MSY) and exploitation rates being moderate. Therefore, this CFU is the area under consideration for the Southwest crab trial and this paper.

The Southwest crab trial aims to ensure brown crab is managed at a sustainable level, implementing specific regional management measures. The key objectives are:

- to gather evidence for developing sustainable fishing management measures suitable for other English brown crab fisheries
- to improve data on stocks, enforcement, and fishing effort for long-term management, and
- to develop with stakeholders, evaluate on a regional basis and consider existing management interactions.

The trial could be one single management measure or a suite of measures.
If more than one measure is favoured by stakeholders, consideration will be given to the interaction and compatibility of multiple measures and whether outcomes can be monitored. The trial may apply to all vessels within an area depending on the extent and specific measure selected and may sit wholly or partially in the Western channel CFU. The ambitions are that the trial takes place over 1 to 2 years (subject to the option being trialled and feedback from stakeholders).

Current and planned management from the MMO and Inshore Fisheries and Conservation Authorities (IFCA) (listed in Annex 4) will be considered. Cumulative and unintended impacts, such as displacement will need to be considered and monitored during implementation.

3. Legislative considerations

The trial must comply with various pieces of legislation and policy. This includes but is not limited to the Fisheries Act 2020, the Joint Fisheries Statement (JFS), and the Trade and Cooperation Agreement (TCA). These legislative frameworks set out

objectives and policies for sustainable fisheries management. Further details of these legislative considerations are outlined in Annex 1.

4. Management options for the trial

MMO has reviewed management options and had meetings with other regulatory bodies to help produce this paper. MMO has also worked with Defra to consider these options against legislative and policy requirements. MMO and Defra believe that the options presented in section 4 are operationally feasible and could help address current issues in the fishery. The options considered in this section are outlined in Figure 1 below.

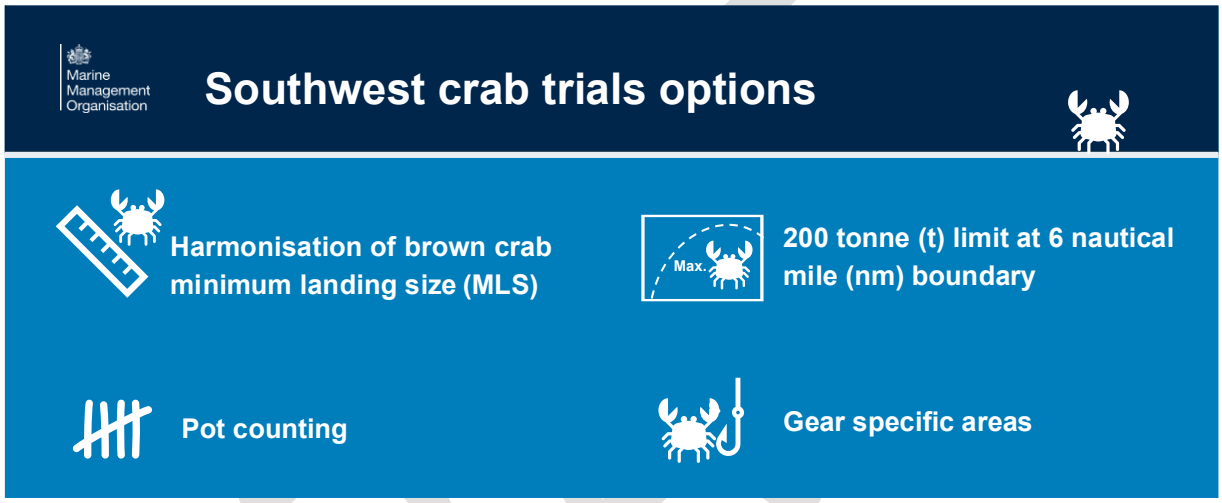


Figure 1. Different management options for the Southwest crab trial(s).

Indicative timescales, administrative mechanisms, opportunities and risks have been provided for each option. The options and their parameters will be further developed using your feedback (the Southwest crab trial group) and stakeholder events. To help with engagement with wider stakeholders and to ensure full consideration of the presented options questions are included below each option. We would greatly appreciate if you could consider these when reviewing the options.

Harmonisation of brown crab MLS

This option aims to standardise the minimum conservation reference size (MCRS) sometimes referred to as MLS by stakeholders, reducing administrative and boundary complexities. The proposed measure would be to increase the national MCRS of 140 millimetres (mm) to align with the Cornwall IFCA and Devon and Severn IFCA MLS of 160 mm for male brown crabs, and 150 mm for females.

MLS management is currently used in many English fisheries, including shellfish fisheries. This means that it has an established administrative/regulatory framework that is familiar to stakeholders and regulatory bodies. The measure aligns with one aspect of the 3-Ss (sex, size and season) approach suggested in the FMP, and fulfils an objective of the FMP. The 3-S approach is where area-specific biology and fishing patterns determine measures that limit catch by size, sex and/or season.

If trialled, it would be a mandatory measure applied to all vessels (including UK ‘United Kingdom’ and EU ‘European Union’) fishing in a specified geographic area out of the English exclusive economic zone (EEZ). The measure could be administered through a variation of fishing vessel licences which would require a minimum 45-day notification period to the EU.

Internal costs associated with this measure would be for resourcing existing MMO teams for introducing, administering and monitoring new measures. Table 1 below provides a summary of possible opportunities, risks, timescales and mechanisms for implementation of this option.

Table 1. Summary of possible opportunities, risks, timescales and mechanisms for implementation.

Opportunities:	**Risks:**
• Potential to increase spawning potential of stock and test current scientific theory regarding brown crab size. • Simplify compliance, legislative burden and associated costs. • Increase assurance for supply chain. • Test current regional MLS regulation and opportunity to evidence the regional variance. • Increase sustainable criteria of fishery. • Gather data to inform future management consideration. • Create a comparison to measure other management options. • Quick to implement as existing mechanism.	• Financial impact assessment needed to understand the implication on the fleet and supply chain. • Spatial displacement impacts of vessels moving into areas where the MLS remains at national level. • A differing MLS across a boundary (for example, the Welsh border and eastern channel) could lead to regulatory complexity and non-compliance (misreporting of catch area).
Indicative timescale:	**Mechanism:**
Introduction in 2025 and monitored for 2 years.	Mandatory during trial period, using a licence condition for UK and EU vessels.
Assurance:	**FMP objectives:**
MLS has an established administrative/regulatory framework that is already used by stakeholders and regulatory bodies.	MLS meets FMP objectives outlined above. A regional approach harmonising with existing management. It provides opportunities for more sustainable fisheries management that could be considered in other English brown crab fisheries.

Questions we would welcome input on:

1. How long would you need to adjust to the MLS increase and how long should the measure be trialled for if chosen?
2. What impact would the harmonisation of MLS have on you and your business?
3. Is the supply chain demand sufficient for brown crabs at the increased MLS and above?
4. Would a boundary at the Welsh border/Eastern channel create additional impacts for your business and further complicate regulatory/compliance burdens?
5. If MLS harmonisation was used in the trial what would be the indicators of a successful trial?
6. Do you have any other thoughts about increasing MLS for brown crab?

Pot counting

This option relates to running a pot tagging or counting programme. The FMP suggested that a locally appropriate measure could be a '*pot limit'* and that '*pot numbers could be determined relative to a vessel's size, location, capacity or crew number and could be marked for identification*'.

MMO believe that it would be challenging to introduce a pot limit at this time, due in part to the lack of verified pot numbers across all fleets. However, the trial could look to improve our understanding of pot numbers (and therefore current effort), particularly outside of 6 nautical miles 'nm' (where data is the most limited). The trial could help test new processes for confirming pots. There are various options available for this. Please see Annex 6 for more information on these different pot counting projects.

All pot counting options are for discussion with the Southwest crab trial group and wider stakeholders. MMO's current preference after review of available information is for a minimal remote electronic monitoring (REM) system (as outlined further below).

All pot counting options incur additional external costs. If pot counting is selected, the extent and scope of the trial will need to be proportional to available funding. If all vessels were included in the programme this would be a mandatory measure. The measure would be voluntary if a smaller scale programme was undertaken for the data poor fleet sectors, or a sentinel fleet that would be representative of the overall fishery.

<u>Minimal REM example:</u>

- This system includes sensors and vessel positioning hardware. An example of such a system is the SIFIDS (Scottish inshore fisheries information and data system) project provided by St Andrews University.
- SIFIDS hardware consists of a positional tracker, several Bluetooth and radio frequency identification (RFID) transmitters and a supporting software catch application. The system uses machine learning (artificial intelligence 'AI') to count pots being deployed and hauled.

- MMO are enquiring with the provider to see if the SIFIDS system could be adapted to existing vessel monitoring system (VMS) and inshore vessel monitoring system (IVMS).
- SIFIDS outputs will yield pot numbers for each vessel that will allow calculations of total pot numbers in the fleet in the trial, referred to as a "global pot number", allowing Catch per Unit Effort (CPUE) calculations and modelling to inform future decisions regarding a pot limit.
- A minimal system such as SIFIDS reduces the risk of hardware malfunction or tampering.
- The additional work associated with the outputs of the SIFIDS project is minimised due to machine learning.
- Additional data outputs include soak time and catch per unit effort (CPUE). This would allow current effort levels to be modelled.
- SIFIDS is just one proven working example of a minimal electronic monitoring program. There may be other similar systems and there may need to be a tender process before project commencement.
- Please see Annex 6 for further information on this system and other systems explored for this option.

Table 2. Summary of possible opportunities, risks, timescales and mechanisms for implementation.

Opportunities	Risk
• Provide a mechanism for improved pot number data within the trial area improving our knowledge of the brown crab fishery and current effort. • Allow further investigation of innovative technology solutions including RFID, AI used in conjunction with REM, on board camera systems, and VMS or iVMS. • Improves assurance for inshore and offshore regulatory bodies. • May support future IFCA consideration of pot limits (within 6 nm) and harmonised effort management across administrative boundaries. • Improve sustainable criteria of fishery. • Better data available to the fishing fleet may improve efficiency. • May reduce spatial conflicts. • Partnership working between IFCA and MMO on future pot number data projects and offshore patrol work. • Measure administrative cost and connected processes at a local scale.	• Electronic monitoring has high initial costs. logistics, and administrative time implication for fishers and regulator. • Currently unknown if there is any FaSS funding available for this work. • Ongoing data costs burden, exact amounts will vary according to system.

• Evidence a harvest strategy and associated harvest rate.	
Indicative timescale:	**Mechanism:**
Introduction would take longer than other options presented in this paper but would likely only need to be trialled (counting pots) for 1 year.	Voluntary or mandatory (licence condition). This depends on the level of funding available and level of support from industry.
Assurance:	**FMP objectives:**
Pot counting improves assurance for inshore and offshore regulatory bodies if mandatory assurance is feasible.	This option meets FMP objectives outlined above. It will gather data to improve data on fishing effort.

Questions we would welcome input on

1. If a pot counting programme was a voluntary measure, would you be interested in taking part?
2. How long would industry need to adjust to the new measure?
3. Have you previously been involved in/know of any electronic monitoring programs?
4. Would you be prepared to have REM/RFID on your vessel that would be in place to count and verify pot numbers?
5. Would you be interested in using the extra data that a minimal REM program can yield to optimise your fishing activity?
6. Should the trial be a test and comparison of all available technologies such as full camera systems?
7. If a pot counting programme was used in the trial what would be the indicators of a successful trial?
8. Do you have any other thoughts about pot counting for the brown crab fishery?

200 t limit at 6 nm boundary

This option is to trial an approach already implemented by a Devolved Authority (in their waters). In May 2024 Marine Directorate Scotland introduced interim measures due to increased concerns about the health of crab and lobster stocks in Scottish waters. One of the interim measures is the prohibition of vessels over 12 metres (m) that have caught more than 200 tonne (t) of crab and/or lobster during any 12-month period from 2020 onwards from accessing Scottish inshore waters (6 nm). Further information regarding the interim measures can be found here.

If this measure was extended into English waters, it would likely affect approximately 20 English vessels nationwide (from review of 2023 MMO landing data). MMO believe that many are already excluded from fishing inside of 6 nm by existing IFCA management. However, this measure would offer further protection to inshore brown crab stocks by excluding the sometimes most capable vessels from working inside the 6nm limit.

The harmonisation of the 200 t limit from Scottish waters to English waters could simplify regulation and may also reduce potential displacement of vessels from Scottish waters. This measure would likely be mandatory and as it relates to the 6nm boundary would be applicable to all UK vessels working within the specified trial area.

Internal costs associated with this measure would be for resourcing existing MMO teams for introducing, administering and monitoring new measures. Table 3 provides a summary of possible opportunities, risks, timescales and mechanisms for implementation of this option.

Table 3. Summary of possible opportunities, risks, timescales and mechanisms for implementation.

Opportunities:	**Risks:**
• May reduce impacts to brown crab stocks within specific areas and support the continuation of fishing. • Easily administered and has small regulatory associated costs. • Reduce the risk of displacement from Scottish fishing grounds. • Offers an overall protection to inshore waters regardless of current regional maximum vessel size limits. • Notification process could be explored to inform fishers when they are close to the 200 t.	• Displacement of larger vessels into new grounds could cause conflict and increased effort on establish grounds outside the 6 nm limit. • Cumulative impacts from new and existing measures would have to be accounted for.
Indicative timescale:	**Mechanism:**
Time would be needed for industry to adjust to the new measures. Probable introduction in 2025, to run for two years.	Mandatory. A licence condition would be a sufficient to deliver this measure to all UK vessels.
Assurance:	**FMP objectives:**
There are existing mechanisms in place could be used.	This meets FMP objectives outlined above. It is a regional approach that looks to improve fishing effort distribution. It provides opportunities for more sustainable fisheries management that could be considered in other English brown crab fisheries.

Questions we would welcome input on

1. How would a spatial restriction impact you and your business?
2. What other measures would you consider managing effort of the inshore fishing grounds?

3. Is the vessel size a robust marker of vessel capability or should other vessel parameters be considered?
4. Does the 200 t measure work on a regional scale or should it be considered a national measure? (for example, does it introduce further regulatory/compliance burdens and perhaps would be better trialled directly in areas that directly boundary Scottish waters?).
5. Would there be cumulative impacts from the introduction of this measure when considered with current/proposed measures?
6. How long would industry need to adjust to the new measure?
7. If a 200 t programme was used in the trial what would be the indicators of a successful trial?
8. Do you have any other thoughts about the 200 t restriction at the 6 nm boundary for the brown crab fishery?

Gear specific areas

This option relates to gear trials within a specified area and has resulted from reviewing management used by Jersey. Using stakeholder feedback MMO could seek to establish areas where only specific types or specifications of gear could be used.

This could be an opportunity to test new technologies such as degradable panels, restricting areas to specific gear types and/or the prohibition of new gears such as multiple parlour boxes which are locally known as “coffin” pots.

This measure could be used in sensitive areas and reduce the need for a wider closure, whilst promoting more sustainable practices in the fishery, potentially moving the fishery towards a sustainable accreditation.

The Jersey fishery has created non parlour pot zones. Their model could help frame and reference any impacts of this measure. Non parlour pots are less efficient than the most used parlour pots and must be attended more frequently.

This measure could be mandatory or a voluntary trial to gather data, check feasibility and economic impacts.

Internal costs associated with this measure would be for resourcing existing MMO teams for introducing, administering and monitoring new measures. Existing processes within the MMO can assure the project.

Table 4 provides a summary of possible opportunities, risks, timescales and mechanisms for implementation of this option.

Table 4. Summary of possible opportunities, risks, timescales and mechanisms for implementation.

Opportunities:	Risks:
• Design areas of lower effort with stakeholders. • Fulfil FMP research and development objectives. • To support the continuation of fishing in sensitive areas without imposing further management. • Promote the catch as a more sustainable, promote better practice, offering sustainable credentials. • Evidence project to identify suitable and needed non parlour pot zones	• Displacement of vessels into new grounds and the risk of mis recording the catch area • Costs and time associated with supporting evidence projects. • Cost and time would be needed to develop the Catch App/electronic logbook 'Elog' to record pot type.
Indicative timescale:	**Mechanism for implementation:**
Time would be needed gather information on the most suitable/needed area. Need to create an advisory group Work would start in 2025, further research through evidence teams could be tasked for this year, depending on scope and resource.	If mandatory. A licence condition would be a sufficient and can easily be delivered to all vessels.
Assurance:	**FMP objectives:**
There are existing mechanisms in place could be used for assurance.	This meets FMP objectives outlined above. It is a regional approach, changing current fishing effort that provides opportunities for more sustainable fisheries management that could be considered in other English brown crab fisheries.

Questions we would welcome input on

1. Do you currently use non parlour pots and/or coffin pots?
2. Would you be interested in changing your fishing practice and using non-parlour pot fishing to increase the sustainability criteria or would you just avoid the gear restricted area?
3. Would you be interested in taking part in a voluntary no parlour pot measure?
4. Do you think that this measure would cause displacement into non restricted areas?
5. Does this measure add to complexity of the regulatory landscape when considered with existing measures?
6. Do you think that biodegradable panel is an effective mechanism for reducing the risk of ghost fishing?
7. What other measures could be introduced to work towards sustainable credentials and accreditation?
8. How long would industry need to adjust to the new measure?
9. What impact would gear trials have on you fishing practice/business?

10. If gear trials were used in the trial, what would be the indicators of a successful trial?
11. Do you have any other thoughts about gear trials for the brown crab fishery?

5. Other options considered

It should be noted that some options have been considered as unsuitable for the trial at this point of time. This includes measures where MMO currently do not have sufficient data to make a robust decision, and/or do not believe it meets legislative tests. Please see further below in this section for a list of those measures. This does not mean that they cannot be discussed during the Southwest crab trial group meetings, wider stakeholder engagement roadshow or that they will not be considered further in future.

Days at Sea (DAS)

The existing Western waters effort legislation that is in place for the over 15 m fleet in ICES area 7 has already shaped the fleet dynamic in the trial area. The introduction of an additional scheme will add an additional layer of complexity for the industry and regulators.

Any effort scheme introduced to the brown crab fishery in the trial period will impact other shellfish fisheries. DAS effort should be used in conjunction with other measures to reduce risk of increased fishing effort through increased pot numbers.

Vessel size/power approach

Landing data has shown that there is considerable effort in the fishery in the area between the 6nm and 12nm limit. This proposal and the following proposal (ICES rectangle approach) were considered as possible options for addressing the effort concerns outside the 6nm limit.

There are various options to look at effort between 6 nm to 12 nm, such as access being staggered proportionally according to vessel size/power. However, there are risks of restrictions based on vessel power and vessel size (for example, size is not always a good indicator of capacity and vessel power measurement/administration can be challenging). Using vessel size and/or power alone will not likely address concerns from industry regarding effort outside of 6nm.

ICES rectangle approach

MMO data from the western English Channel indicates that 66% of all brown crab landings come from 3 ICES rectangles (please see Annex 5 for landings data and a map of ICES area 7e). These are established brown crab grounds but due to the level of activity there are concerns that the number of removals may be unsustainable.

An option considered was whether an annual catch amount could be attributed to an ICES rectangle. Once a pre-determined trigger point was reached (most likely a removal amount) the ICES rectangle could then be closed for a defined period.

This option carries several risks to the fishery including business continuity (through uncertain fishing/poor supply chain) and the risk of ghost fishing/pot left at sea if the area was closed.

With these two options (ICES rectangle and vessel size/power) and the problem of effort in mind we would appreciate if you could consider the following questions.

1. Do you feel that the effort within 6 to 12nm or ICES areas (Annex 5) is too high?
2. Do you have any suggestions for reducing effort in areas of high exploitation?
3. Do you have any other option suggestions to address this concern?

Pot limits

Pot limits are an effective measure to control effort in the fishery when applied to all fleet sectors. The trial is an opportunity to improve data to move towards this measure. As noted above for the pot counting option - MMO does not have good quality data regarding pot usage and a global pot number. Accurate pot usage and a global pot number would offer the opportunity to model fishing effort and to evaluate what a sustainable pot number could be. Electronic monitoring options need to be explored for cost effective solutions before any statutory program could be introduced.

Closures based on sex and season

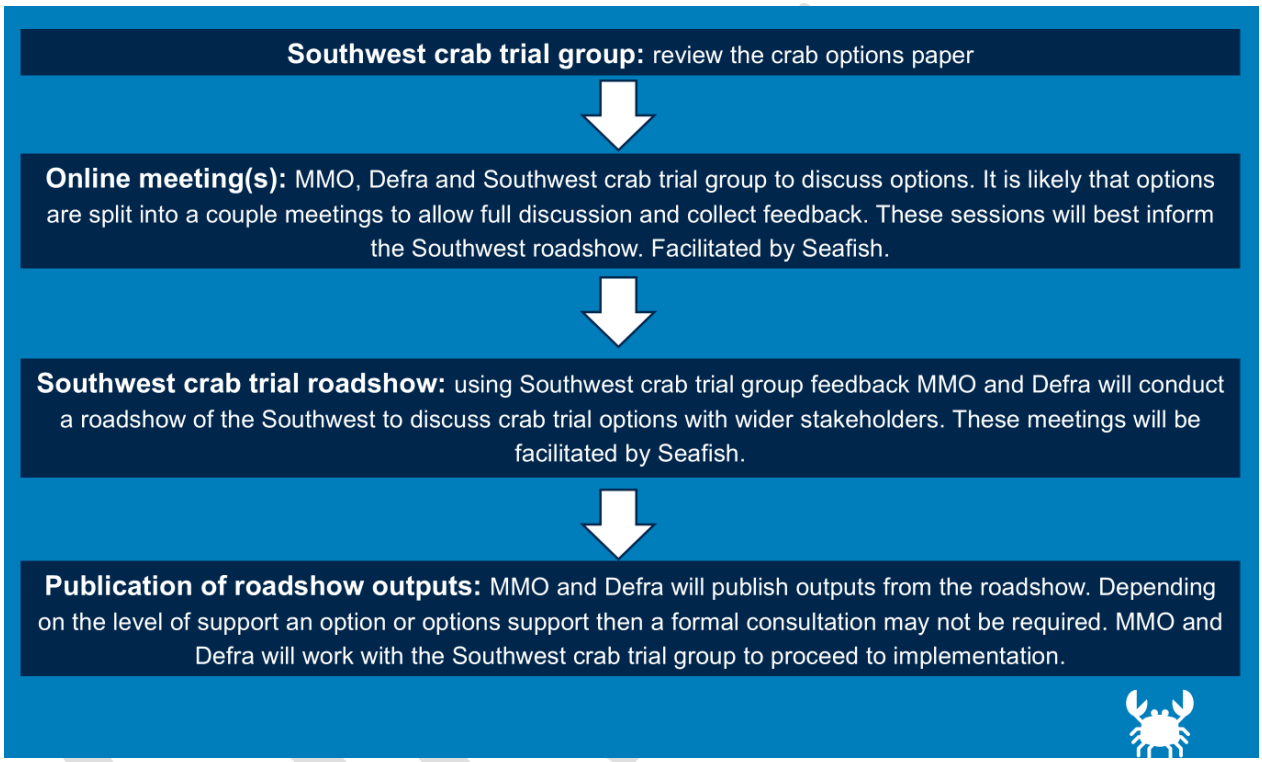
This option relates to closures based on the other aspects of the 3-Ss (sex, and season) approach. For future management measures to be based on sex and season further data and scientific evidence is needed to be able to make safe decisions and assess effectiveness for management options based on sex and season.

- Measures would be triggered by a researched data point that would create a partial temporal/spatial prohibition on landing species according to a condition of size/sex or season (for example, it could be a prohibition of landing brown crabs over a certain size or a seasonal closure based around spawning times).
- This would require a training and education period for fishers and regulators to identify and record all species at a greater depth, such as size and sex, and assure inspections.
- MMO would require more size and sex data, which could be tasked to IFCA (Monthly shellfish return forms (MSRF) or the Catch App and logbook).
- Catch App would need funding for development and only extends to the 10m and under fleet.

- Small areas of closure can be monitored but they are difficult regarding compliance. It could encourage mis-recording of area information and require extensive and timely checks.

6. Next steps

The flow chart below indicates the next steps following receipt of this paper by the Southwest crab trial group. Dates are being finalised and will be communicated as soon as possible.



7. Stay in touch

Southwest crab trials:

Please contact MMO's Fisheries Management Team using the email address provided if you have any specific questions regarding the Southwest crab trials:

FMP@marinemanagement.org.uk

Please contact Seafish using the email address below regarding the Southwest crab trial group: lewis.tattersall@seafish.co.uk

Crab and lobster implementation group:

The Southwest crab trial group will feed updates into the wider crab and lobster implementation group. This group oversees the wider crab and lobster FMP measures.

Please contact Seafish using the email address above if you would like to know more about the crab and lobster implementation group.

General FMP updates:

FMP updates are available on the Defra blog, this can be found here:

Fisheries Management Plans – News and updates from Defra's FMP programme

Regional Fisheries Group (RFG):

MMO's RFG network provides a formal method of engagement to help further develop collaborative working relationships between policy makers, scientists, regulators, and predominantly the inshore fishing sector.

Regional level meetings are a great way to hear about any issues and updates in your area. Your area will have a dedicated fisheries manager for you to contact.

The latest RFG news can be found using the website linked here: **Regional Fisheries Groups - GOV.UK**

Contact email is here: **regionalfisheriesgroups@marinemanagement.org.uk**

Annex 1. Legislative considerations

The Southwest crab trial is being progressed due to the stock size being considered near MSY and exploitation rates being moderate. Therefore, actions are needed now to ensure protection of the CFU and ensure the government meets commitments outlined in the FMP and other legislation as outlined below.

The final trial measure(s) will need to comply with relevant legislation and policy, including the Fisheries Act 2020, Joint Fisheries Statement (JFS) and Trade and Cooperation Agreement (TCA). In drafting this paper MMO has worked with Defra to present options (section 4) that we feel can be implemented in accordance with these. Defra and MMO will need to continually test against these aspects as they are evolving.

The assessment requirements for compliance under these highlighted pieces of legislation/policy are outlined below:

The Fisheries Act, 2020 and Joint Fisheries Statement (JFS)

The Fisheries Act 2020 (the Act) sets out eight fisheries objectives that provide the basis against which the fisheries policy authorities will manage their fisheries.

The JFS (published November 2022) sets out the policies needed for the fisheries policy authorities to achieve, or contribute to the achievement of, the fisheries objectives. As a national fishery authority, MMO are obliged to exercise our functions in accordance with the policies in the JFS, in line with section 10 of the Act.

Trade and Cooperation Agreement (TCA)

The TCA (dated 30 December 2020) is an agreement between the United Kingdom (UK) and European Union (EU) following the UK's exit from the EU. Amongst other things it sets out arrangements for trade and fisheries. TCA requires the following considerations are made if a statutory measure is trialled:

- which objective in Article 494(1) the measure pursues and explain why/how the measure is in pursuit of one or both of those objectives
- what the scientific advice the measure is based on, why this is the best available and how the measure is based on that advice
- the limitations of any scientific advice and why the measure/approach is being used in the absence of sufficient or adequate scientific advice
- demonstrate that the measure is being applied to UK vessels as well as EU vessels (Article 496(1)), and
- the impact on EU vessels relative to UK vessels and consider whether there are any alternative options with similar benefits but fewer costs.

Annex 2. FMP background

In 2019, the shellfish industry recognised that action was needed to better manage crab and lobster stocks. Crab and lobster were prioritised for an FMP due to the stocks' vulnerability to over-exploitation, the economic value of these fisheries, and a need to better manage harvesting the crab and lobster stocks. The FMP proposed initial management intervention through trialling of finer scale management for brown crab and lobster in selected fishery units.

The Western English Channel crab fishery unit 'CFU' or Southwest brown crab (Figure 2; Annex 2) was identified by the FMP for potential priority management. This was due to the stock size being considered near maximum sustainable yield (MSY) and exploitation rates being moderate.

The FMP noted that current management is fragmented and there is a wide range of management measures already in place. This level of complexity makes it more difficult for fishers to abide by regulations, for regulators to effectively enforce regulations, and increases business costs. The FMP provides options for locally appropriate measures (listed below), with context of how they could be implemented:

- pot limits – pot numbers could be determined relative to vessel's size, location, capacity or crew number and could be marked for identification
- days at sea limit – could be determined relative to vessel's size, capacity or crew number
- catch limits – could be set on a precautionary basis (for example, based on track record of historical catches), and adjusted according to stock assessment outputs, and
- the '3-S' approach – where area-specific biology and fishing patterns will determine measures that limit catch by size, sex and season.

Annex 3. Crab trial area

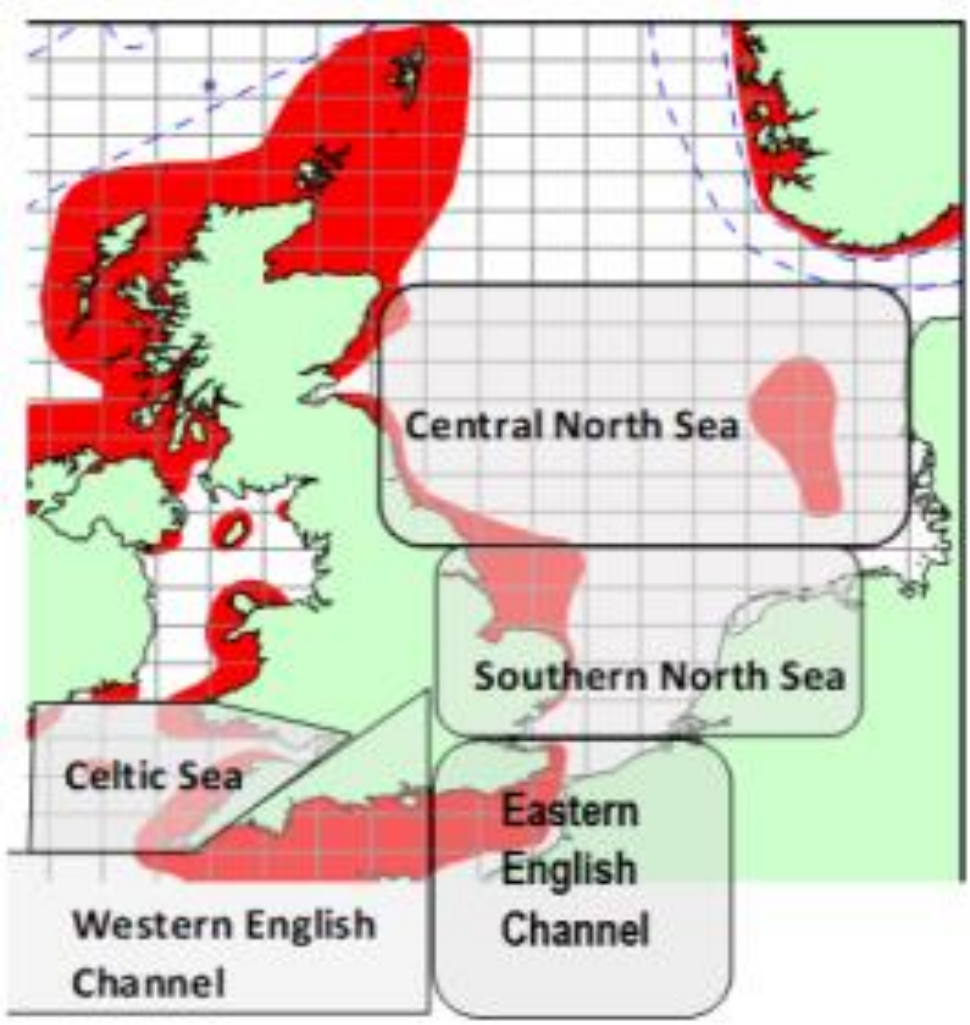


Figure 2. Brown crab fisheries units – this figure and the units are as in the Cefas stock assessment process and resulting stock assessment report.

Annex 4. Existing management measures

The FMP highlights the need to harmonise regulation across the administrative boundaries. Below is a summary of the current regulation in place for the crab and lobster fisheries in the proposed management areas.

National measures for crab and lobster

National measures have been carried from the common fisheries policy. Technical Conservation regulation lays out national measures on MLS also referred to as MCRS. The devolved administrations also have regulatory Orders offering further protection for shellfish that are summarised in Table 5. National measures are administered by the MMO, Welsh Government (WG) and Marine Directorate Scotland (MDS) and apply from the 0 nm to the 200 nm limit or the extent of the EEZ.

Table 5. A summary of national measures administered by the MMO, WG and MDS.

Measure	Administered by	Detail
Technical Conservation - measures	MMO	MLS 140 mm – brown crab
Undersized edible crab order 2000	MMO	Male crabs MLS 160mm in Devon and Cornwall and IoS waters
Shellfish entitlement	MMO/WG/MDS	On the vessel licence, allow for unlimited catches of shellfish.
Western Waters Effort	MMO/WG/MDS	Limits Days at Sea for 15m + vessels working in ICES sub-areas 5, 6 and 7 in the crab fishery
Technical Conservation measures – the landing of crab parts	MMO	Max limit for crab legs = 1% of shellfish landings or 75 kilograms (kg) of mixed landing
Specified Crustacean Order 2017	MDS	MLS 150 mm – brown crab (except Shetland 140 mm)
Amended Specified Crustacean Order 2017	MDS	Prohibition on landing berried brown crab and lobster. Any potting vessel 12m + having landed 200 t in any 12 months from 2020 to 2023 prohibited from fishing in Scottish 0 to 6 nm.
Specified Crustacean Order 2016	WG	MCRS – 140mm – brown crab Prohibition on landing parts of crab & lobster and berried/ mutilated/v notched lobster

The Welsh government are hoping to publish a crustacean FMP in 2026. The Scottish government are hoping to publish a crustacean FMP in the future.

Alongside national measures administered by governments, there are management measures that apply within IFCA districts that are either species or district specific.

Crab management in ICES sub area 7e

Table 6. Summary of IFCA byelaws in the Western Channel CFU area

Management measure	Southern IFCA	Devon & Severn IFCA	Cornwall IFCA	Isle of Scilly IFCA
Shellfish permits	Yes	Yes	Yes	Yes
Minimum Conservation reference size	National	150mm females 160 mm males	150mm females 160mm males	140mm females 160mm males
Maximum pot limits	No	No	No	No
Escape gaps	No	Yes	Yes	No
Max vessel length	12m	14.99m	16.46m*	11m
Towed gear restrictions	No	Within some MPAs in district	No	no
Prohibits the use of edible crab for bait	No	Yes - permit holders fishing for CRE, LBE &CRW	No	No
Prohibits the removal of parts of crabs	No	Yes	Yes	No

*CIFCA byelaw regarding maximum vessel size currently in review process.

In addition to the IFCA regulations detailed above Cornwall IFCA held a consultation in July 2024. The consultation for the management of vessels fishing for crustaceans within the Cornwall IFCA district presented a proposal to develop a new byelaw to limit the size and capacity of vessels fishing for crustacean shellfish.

The consultation explores implementing maximum vessel size restrictions for Mono hull, multi hull and Vivier vessels within the Cornall IFCA district. The CIFCA response to consultation document summarises that the volume of responses and the detail which they contain provides sufficient evidence to support the development of a new byelaw.

Devon &Severn IFCA have consulted on a prohibition of vessels with an integral tank size of 2m^3 from working within their district. The consultation ends on 23 May 2025. The consultation responses will be considered by the Byelaw and Permitting sub-committee at a meeting on 26 June 2025. The committee will decide whether this measure is included in a permit condition and the final integral tank volume.

Annex 5. Landings data

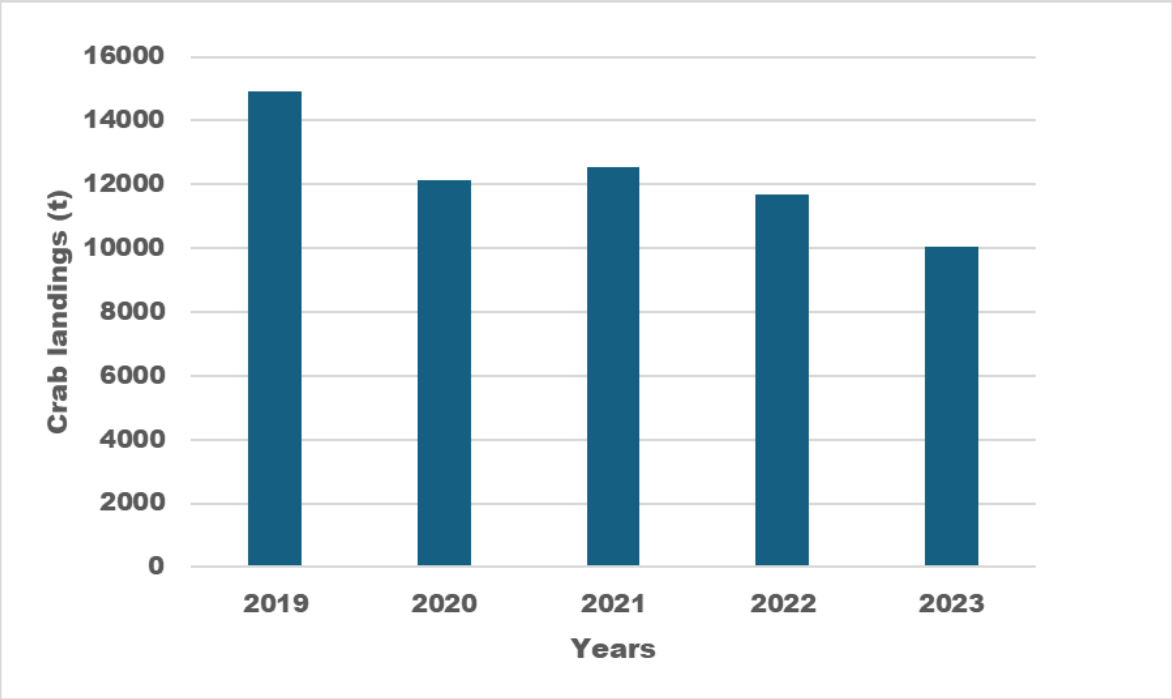


Figure 3. All brown crab landings into English ports from 2019 to 2023.

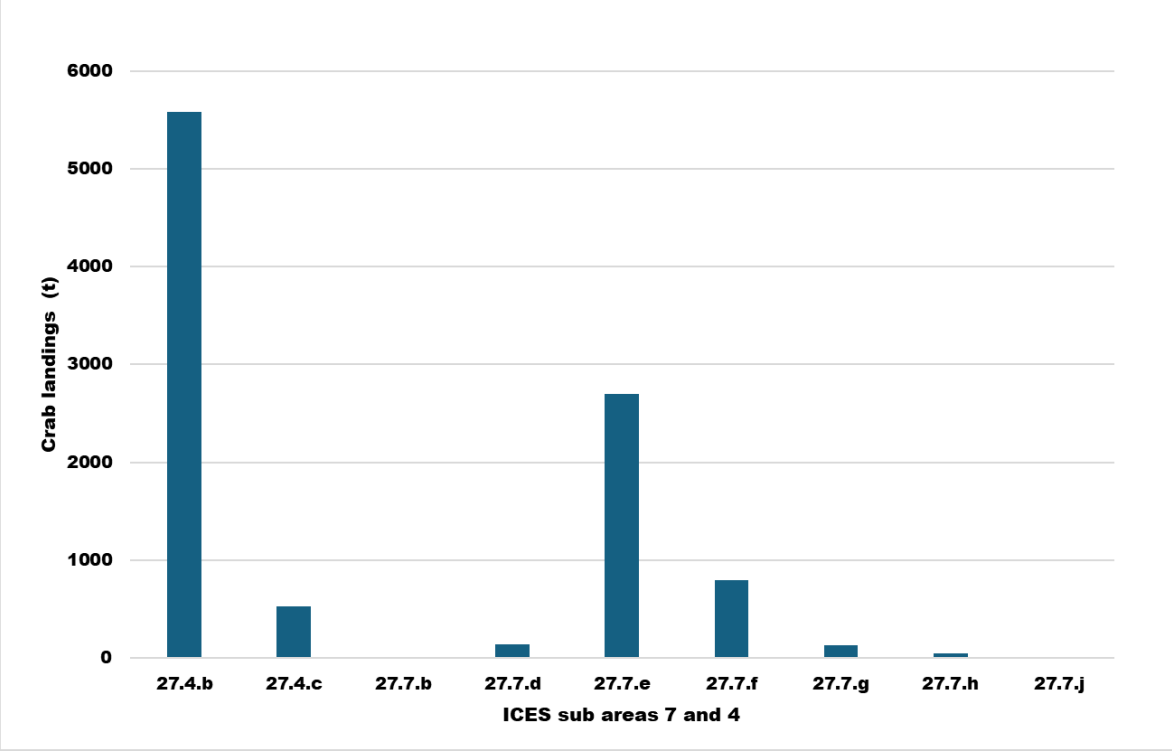


Figure 4. 2023, all brown crab landings into English ports apportioned by area of capture, referenced to ICES sub areas 7 and 4.

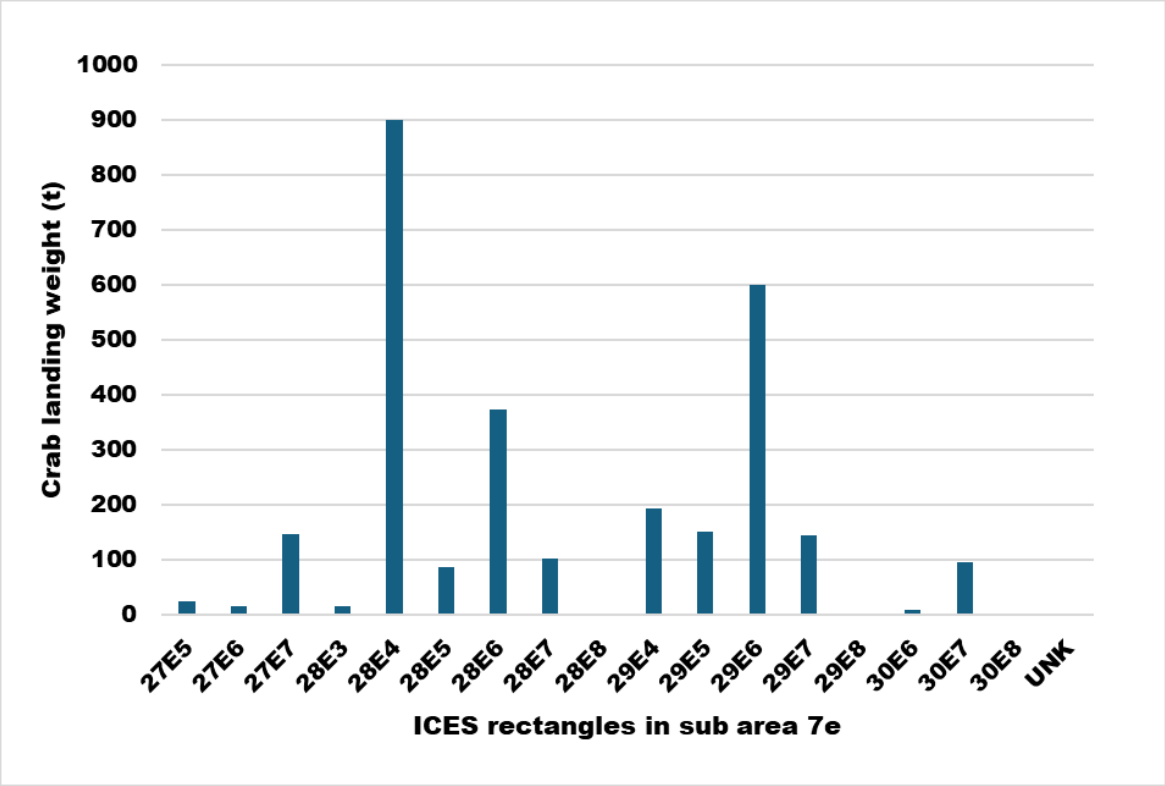


Figure 5. 2023, ICES sub area 7e brown crab landings, referenced to area of capture.

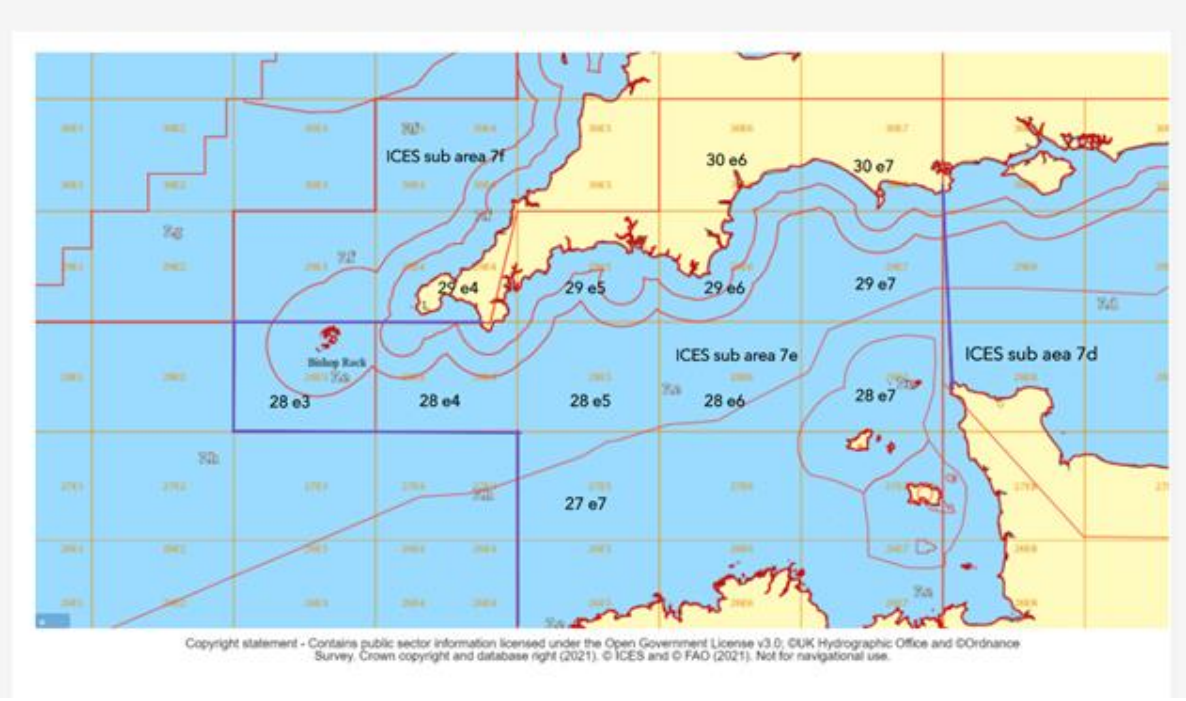


Figure 6. ICES sub area 7e with the 6 nm, 12 nm and UK/French median lines marked in red. ICES area 7e boundary is the purple line.

Annex 6. Pot number options

Pot tagging

Traditional pot tagging was considered for the trial. Traditional pot tagging is administratively heavy with additional costs being needed to extract the data. The programme would be difficult to assure.

Previous REM projects

MMO Catch Quota trial and the Fully documented fishery

In 2011 MMO started the Catch Quota Trials - the aim of the project was to test the operational management and enforceability of REM and closed-circuit television (CCTV) as a means of verifying catch records, monitoring discards and check compliance with the Landing Obligation. 15 vessels were enrolled in the project which uses a full camera system, sensors on deck, equipment and vessel positional data. The programme started with 12 vessels in the North Sea looking at cod catches and 3 vessels in the western channel looking at sole.

The Fully Documented Fishery (FDF) was a full camera, sensor and positional REM system, deployed onto 12 vessels that worked out of Peterhead and one Nephrops vessels that worked from North Sheilds. The aim of the project was to compare the catch composition and discard data of vessels in the same fishery. It showed vessels that were not in the FDF fishery had a different landing catch composition indicating that the landing obligation was only being obliged by discarding and high grading.

Considerations for brown crab trials:

- The systems were administratively heavy with the survey and review work being carried out by MMO's Future Fisheries team.
- The hardware would not be available as it has current systems are now reached the end of the working life span and the project has been currently suspended.
- There are no costings available for the project associated with this project however, there was a similar REM project undertaken by the Devon & Severn IFCA which could be used for the purpose of costing a full camera project.

Devon and Severn IFCA REM project.

The project looks like a traditional REM set up that has several cameras and equipment sensors, coupled with global positioning that record vessel position with relationship to gear position and then activity can be checked and then associated catch can be attached via logbook data.

The objectives and aims of the trial were to:

- Evaluate the robustness and effectiveness of new technologies in different fisheries.
- Optimise management and access to the fisheries through enhanced monitoring of fishing activities,
- Demonstrates how much good quality data can be generated, equally useful for fishers and regulators.
- Explore the cost and monitoring effectiveness of new technologies.
- Improve industry knowledge and support of the systems
- Identify barriers to rollout (for example limitations of devices, feedback from fishers).

Considerations for brown crab trials:

A full REM camera system will generate additional data that could be used to verify pot usage, pot numbers, area fished and catch.

The trail could be an opportunity to test and compare different technologies.

The additional data would have to be analysed, incurring additional resource.

Scottish inshore fisheries information data system (SIFIDS) project

The pilot commenced on the 5 November 2020. This pilot project was a product of the wider SIFIDS project that was a European Maritime Fisheries Fund (EMFF) funded project looking to develop robust fisheries data with new technologies.

The Outer Hebrides Inshore Fisheries Pilot highlighted how locally led fisheries improvement projects can work in practice. The Outer Hebrides project was chosen due to risks in the shellfish fishery in the region – for example it was identified that landings per unit effort had fallen and there was little protection for inshore waters and continued rise in effort.

An initial pot allocation was created according to vessel length - 800 pots for vessels under 8 m up to 1800 for the over 12 m, with a maximum soak time and the usage of a vessel positional tracking device. 40 fishing vessels working within the pilot area were equipped a tracking system, several Bluetooth/RFID sensors and a specific app for recording catch, the tracking device provides high resolution temporal and spatial data on fishing activity and estimated creel counts.

Data collected during the project would be used to improve automatically generated estimates of gear soak time for tracked vessels. High resolution positional poling combined with machine learning enabled the system to effectively count the number of pots hauled and deployed. The system report includes all counting summaries and alerting protocols, please see below for a copy of a typical SIFIDS report.
Along with pot counting, data is available for regarding soak times, Catch per unit effort and landings per unit effort, and discards. The data was available to the project owner and the individual vessels, allowing fishers to make better decisions about their own fishing practices and potential efficiencies.

The Catch App has been developed and made available for fishers to log daily catch to feed into highly spatially resolved assessment of landing per unit effort (LPUE), but also a method to support fishers promptly and accurately submitting landings data. This is the only part of the system that can overlap/could it work with Catch app/alongside or instead of.

Considerations for brown crab trials:

- Fishers in the Outer Hebrides have continued to express strong support for the project and are reporting positive impacts on their fishing businesses.
- Compliance with the conditions of the project was reported as good with no reports of breaches recorded in 2021.
- St Andrews University has a team of engineers for installation and support, installation take approx. an hour.
- This project will produce additional data such as soak times and catch per unit effort that are useful for future management measures and reviewing fishery performance.
- The system is unobtrusive and there are no privacy issues.
- Fishers have full access to their data and can use it to make efficiencies in their fishing activity.
- This is a proven technology specific to the requirement for the FMP
- Posthumous reviewing and survey work created by the technology is minimised due to machine learning, below is a typical SIFIDS report, auto generated by the software.

Table 7. Example of a typical SIFID data report.

Month	Total No. Positional Records	Total No. of Positional Records for Hauling	Estimated Total No of Creels	Total Number of Vessels	Total No of Trips	Average Estimated No of Creels Hauled Per Trip Per Vessel
01/01/2021	64675	39994	43234	22	140	330
01/02/2021	26016	14201	15159	16	54	303
01/03/2021	112490	67453	71731	23	232	345
01/04/2021	121265	66336	76920	21	257	334
01/05/2021	125001	64871	78301	23	248	359
01/06/2021	136622	75652	90444	26	254	371
01/07/2021	135557	69790	111502	26	367	324
01/08/2021	200852	119358	129017	26	381	355
01/09/2021	59856	31155	36150	23	113	341
01/10/2021	39433	21173	36135	23	152	260
01/11/2021	56726	34005	45866	22	166	288
01/12/2021	76488	43823	65527	22	226	306