

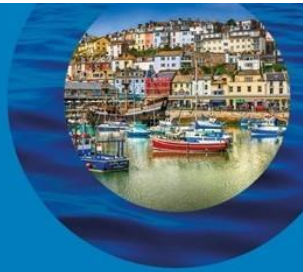


Marine  
Management  
Organisation

# Management Measures for Lyme Bay Sole Fishery

## Decision Document

September 2023



...ambitious for our seas and coasts

## Version control history

Version	Author	Date and comment
1	Ed Baker	Draft completed 20/07/23
2	Jessica Duffill Telsnig	Amendments following QA 10/08/23
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## Executive Summary

### Background

Between 2015 and 2022 quota for Dover sole (*Solea solea*) in the International Council for the Exploration of the Sea (ICES) Area 7.e roughly doubled, leading to increased fishing effort in particular in Lyme Bay. Concerns were raised by stakeholders about the effects of this increased effort on the sole population, the wider marine environment, and local communities. As a result, the Marine Management Organisation (MMO) agreed to undertake a review of the Lyme Bay sole fishery from an environmental, social and economic perspective.

This review included analysis of landings and at sea observer data, a consultation and in person workshop with stakeholders to discuss potential new management measures for the fishery.

The [consultation](#) ran from 29 March to 28 May 2023 and the workshop took place on 19 June 2023. Further information on the consultation results, workshop report, and evidence report is available [here](#).

This document summarises the management options discussed during the consultation and workshop, the outcomes from the consultation and workshop and next steps.

### Increase in minimum landing size

*Discussion:* There was wide support for an increase in minimum landing size for sole in 7.e from 24 to 28 cm. However, before this can be fully considered MMO need further information on the potential impact this change would have on the sole population, landings and financially for fishers.

*Outcome and next steps:* MMO will investigate commissioning scientific advice to provide further information and aim to present the findings and discuss next steps with industry when completed.

### **Separate catch limits for different gear types**

*Discussion:* Consultation responses highlighted concern for the potential environmental impact caused by increased effort by scallop dredges. Dredges have very limited selectivity to reduce finfish bycatch and there is evidence to suggest that some fishers are maximising sole bycatch when fishing for scallops.

MMO directly manages quota used by non-sector vessels and has obligations in the Fisheries Act 2020 to incentivise the use of selective fishing gear to reduce the environmental impact.

*Outcome and next steps:* MMO considered limiting the amount of quota available for sole when fishing with dredges in order to incentivise the use of other more selective gear types that also potentially have a reduced impact on the benthic environment.

MMO will be setting a reduced catch limit for sole in 7.e for non-sector vessels fishing with dredges for scallops. A catch limit will be set at 200 kg per month from November 2023 via a licence condition. The catch limit has been set following analysis of landings data to reflect the upper end of what would be expected for normal bycatch. This limit will be reviewed and may be amended if required.

MMO will also be discussing with Producer Organisations how they can incentivise members to reduce sole bycatch when fishing with dredges.

### **Measures to alleviate gear conflict**

#### Spatial separation

*Discussion:* Many consultation responses included reference to gear conflict between fishers. It was clear however that the majority of the commercial fishers did not want to see any form of permanent prohibition from accessing any particular area.

It was suggested beneficial to hold an annual stakeholder workshop for representative industry members to discuss the potential for separating areas of Lyme Bay.

*Outcome and next steps:* MMO will facilitate a meeting for representative industry members in early 2024 to discuss the potential for separating areas of Lyme Bay, for use by different fishing methods at different times of the year. Further communication on this event will be provided later this year.

#### Gear Marking

*Discussion:* Many consultation responses included reference to issues between fishers, often linked to difficulty in seeing the location of fixed gear and identifying the direction of travel of that gear.

*Outcome and next steps:* MMO will create a new fishing vessel licence condition that requires enhanced visibility and identification of passive gear in Lyme Bay (ICES rectangles 30E6 and 30E7). The condition will also require the east and west ends of the gear to be differentiated to easily determine the direction of travel of the gear. This condition is likely to be implemented in November 2023.

### Communications

*Discussion:* Throughout the investigation and consultation process fishers regularly told the MMO that “communication was key” and cited the importance of all fishers notifying each other of the location of each other’s gear.

*Outcome and next steps:* MMO have created an anonymous method for reporting lost gear for those that have either lost gear or accidentally come into contact with someone’s gear. The [form](#) is available on the [South West Regional Fisheries Group Website](#). The information collected will be anonymous and will be used to inform discussion on the potential for temporary separation of areas for fishing with certain gear types.

MMO suggests people wishing to fish in the Lyme bay area use forms of communication such as WhatsApp to inform others about the location of gear and to avoid gear conflict.

### **Gear modifications**

*Discussion:* MMO asked three questions relating to increases in mesh size for fixed nets, otter trawls and beam trawls and one question relating to gear modification for scallop dredges. These questions were asked following discussion with industry as potential mechanisms to reduce catches of small sole.

*Outcome and next steps:* More evidence is required to determine what benefits to the stock would be derived from specific changes of gear modifications due to the complex social, economic and environmental interactions. As a result of this, MMO will not be making any specific changes to gear requirements at this stage.

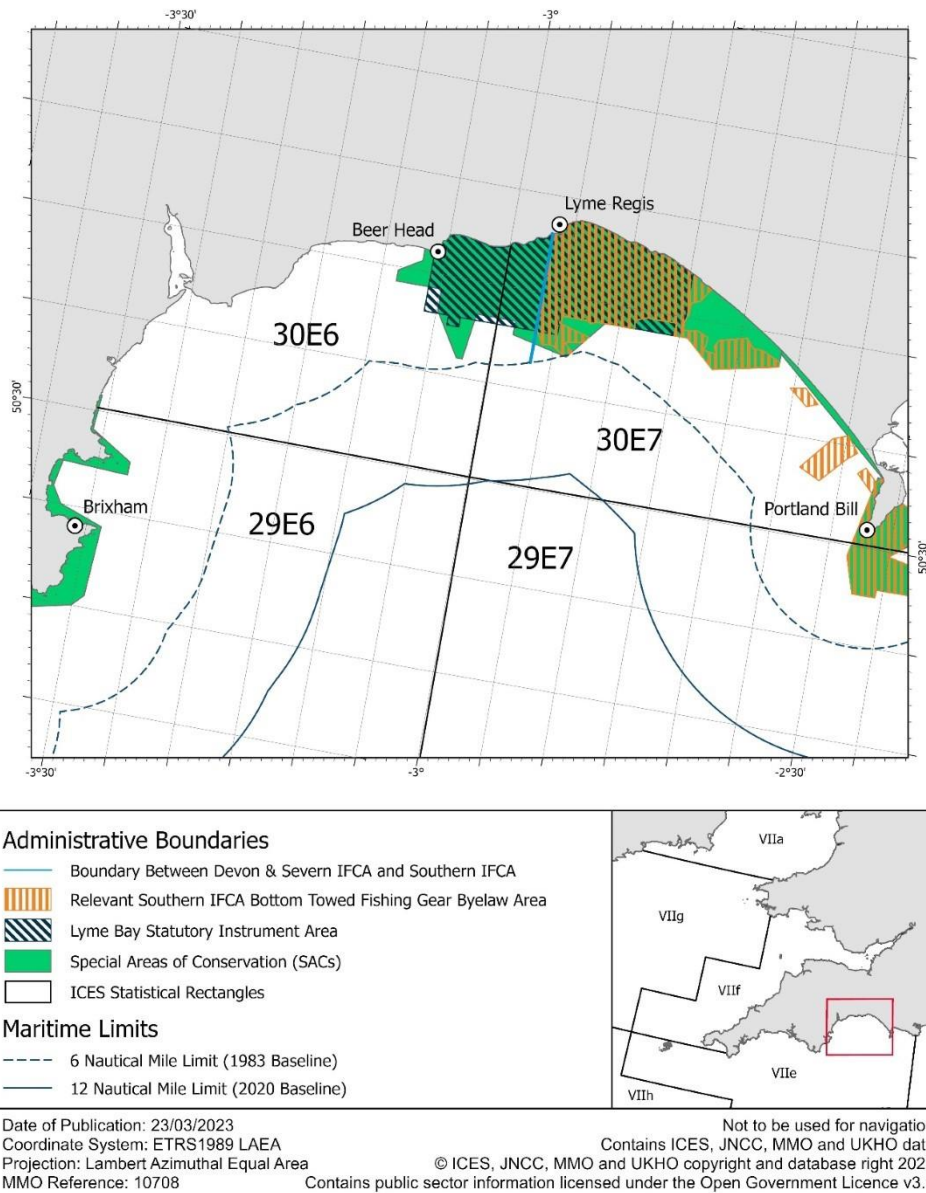
More information to inform future decisions on gear modifications will be derived from the [Channel Demersal Non-Quota Species](#) and the [Scallop Fisheries Management Plans](#).

## 1. Introduction

Lyme Bay is an area of the English south coast roughly defined as the sea area inside a line drawn from Portland in the east to Tor Bay in the west (Figure 1). Common or Dover sole (*Solea solea*) is an important commercial fish species for vessels operating in this area.

Between 2015 and 2022 quota for Dover sole (*Solea solea*) in the International Council for the Exploration of the Sea (ICES) Area 7.e roughly doubled, leading to increased fishing effort in particular in Lyme Bay. Concerns have been raised by stakeholders about the effects of increased fishing effort on the sole population, the wider marine environment, and local communities.

# Figure 1 Lyme Bay Statistical Rectangles and Existing Management Areas



The Marine Management Organisation (MMO) reviewed the Lyme Bay sole fishery from an environmental, social and economic perspective. This review included an analysis of landings, interviews and at sea observer data, with details of the report found [here](#). Further results on economic, environmental and social analysis completed can be found on the [MMO evidence register](#). These results have also been summarised in an [MMO evidence summary report](#).

MMO also ran a consultation and in person workshop with stakeholders to discuss potential new management measures for the fishery. The consultation ran from 29 March to 28 May 2023. The full results from the consultation are published [here](#). Further information on the workshop can be found [here](#).

The following sections summarise the questions asked in the consultation in relation to potential new management measures and a summary of the consultation responses. The consultation questions were developed with industry. Any relevant environmental, social and economic considerations in relation to the specific measures are also discussed and a conclusion with next steps is provided.

## 2. Relevant legislation and policy

MMO reviewed the Lyme Bay sole fishery from an environmental, social and economic perspective, in line with its obligations under the [Fisheries Act 2020](#) such as:

*“25. Distribution of fishing opportunities*

*(1) When distributing catch quotas and effort quotas for use by fishing boats, the national fisheries authorities must use criteria that—*

*(a) are transparent and objective, and*

*(b) include criteria relating to environmental, social and economic factors.”*

MMO also has an obligation under the [Joint Fisheries Statement](#) to deliver policies in line with the fisheries objectives. Of particular relevance to the Lyme Bay sole fishery are the sustainable and ecosystem objectives.

This document details the decisions made following analysis of the consultation results and discussion of that analysis at a workshop with a representative group of stakeholders on 19 June 2023. The decisions made are compliant with the following marine plan policies in the [South Marine Plan](#): Policy S-AQ-2, Policy S-BIO-1, Policy S-BIO-3, Policy S-BIO-4, Policy S-CO-1, Policy S-DIST-1, Policy S-EMP-1, Policy S-EMP-2, Policy S-FISH-1, Policy S-FISH-2, Policy S-FISH-3, Policy S-FISH-4, Policy S-MPA-1, Policy S-MPA-2, Policy S-TR-1. The remaining policies in the South Marine Plan are not applicable to this decision.

MMO also has statutory obligations under the [Equality Act 2010](#) to comply with the public sector equality duty. MMO has considered if people with any protected characteristics are likely to have different needs in relation to the decisions made within this document or if the decisions are likely to present unequal opportunity, result in discrimination or fail to foster good relations between people with different diversity characteristics. MMO has very limited data on protected characteristics of people who fish in Lyme Bay, however MMO does not consider the decisions made will discriminate or disadvantage people with protected characteristics. MMO would welcome any comments or information on this matter if required.

## 3. Changes to fisheries management

**We asked:** In your opinion are changes required to fisheries management in Lyme Bay? And if yes, would you prefer to see industry lead voluntary measures or legal measures?

### **Summary of consultation responses:**

The majority of respondents (84%) thought changes to fisheries management were required. 9% felt additional management was not needed and 4% were unsure.

Comments from those who felt changes were required varied but were generally linked to protection of the environment. Commercial fishers' views tended to vary depending on their type of fishing. Recreational anglers were concerned about overfishing and commercial activity being close to the shore. One comment suggested changes were not required because the sole stock was managed within the wider area 7.e quota.

Generally, participants felt any changes to management should include legal and voluntary measures. This was followed by respondents suggesting measures need to be statutory, due to a feeling that those who followed any voluntary measures would be at a disadvantage as not everyone respected such measures, and that in the past voluntary arrangements had not worked. There was also concern that regulators could not effectively enforce changes to management (particularly spatial).

#### **Environmental, social and economic considerations:**

There is sufficient evidence demonstrating potential negative impacts on the environment from increased fishing activity as well as negative social and economic effects for some stakeholders as described in the [MMO evidence summary report](#). Legislative measures may be required in some cases if voluntary measures undertaken to date have not been sufficiently effective.

#### **MMO conclusion:**

MMO will be implementing legislative measures, via vessel licence conditions, related to the marking of passive fishing gear and sole quota allocation when fishing with dredges. These are detailed below sections four and five. MMO is also hosting a meeting to discuss potential temporal separation of gear types in Lyme Bay, with the potential for further legislative measures to be developed in the future if required.

### **4. Increase in minimum landing size**

**We asked:** In your opinion should there be an increase in the minimum landing size (also known as minimum conservation reference size, MCRS) from 24 cm to 28 cm for sole in 7.e to match the size at which 50% of sole are considered sexually mature?

#### **Summary of consultation responses:**

The majority of respondents (81%) agreed that MCRS should be increased, with 13% disagreeing and 7% unsure. Those that agreed with this proposed measure believed that the increase would help support the sole population. Those that disagreed thought that the sole population was healthy and needed no extra support.

#### **Environmental, social and economic considerations:**

This measure cannot be implemented in isolation as an increase in MCRS would not necessarily reduce mortality without associated changes to gear configuration to increase selectivity for larger fish. Changes to MCRS and gear configuration would likely affect the quantity of sole and other species landed which would have corresponding economic impacts for fishers that have not yet been evaluated.

Increases in mesh size for demersal fisheries are being considered as part of the Fisheries Management Plans (FMP) program. The need for an increase in MCRS for sole will therefore be considered following the results of current [FMP consultations](#).

### **MMO Conclusion:**

MMO will investigate commissioning scientific advice to look into the potential effect the increase in MCRS would have on the sole population and whether it would lead to increased abundance and catches. MMO will aim to present findings and discuss next steps with industry.

## **5. Separate catch limits for different gear types**

**We asked:** Do you think there should be a separate catch limit for sole when fishing inside 30E6 and 30E7 compared to the rest of Area 7.e?

Do you think this limit should be the same or different for different sizes of vessel or for different gear types and why?

### **Summary of consultation responses:**

There were lot of overlapping themes within the responses to this question. The majority of respondents wanted equal and fair catch limits for all and some of these responses were linked to keeping things simple, with concerns around compliance and enforcement.

Those in favour of separate catch limits cited concern regarding conflict between different vessel types, the need for spatial restrictions and sustainable low impact fishing. Some responses suggested more fishing opportunities should be given to local fishers or businesses and / or smaller vessels over bigger vessels. There are several differences of opinions surrounding limiting gear and vessel size for catch limits as a mechanism to reduce the effort of towed or static gear vessels; or to increase the opportunities for static gear and some asked for no catch limit for hook and line vessels.

### **Environmental, social and economic considerations:**

There were multiple free text responses to the consultation that raised concern regarding increased fishing effort by dredge vessels and the potential impact this has on the environment.

Landings data show that some vessels, when using dredges, on occasion land more fish (in particular sole) than scallops. Sole is a high value species, and this indicates that there may be an incentive to increase dredge activity in an area that has a comparatively higher abundance of fish than scallops.

The evidence discussed below and in further detail [here](#), suggests this increased activity could lead to additional impacts on the seabed and other bycatch species.

### Environmental considerations

The following summarises evidence provided in the Natural England report, [Fisheries Impacts on Marine Protected Habitats – A Review of the Evidence](#) (Cantrell *et al* 2023).



Scallop dredges in general cause loss of biodiversity and reduce the complexity of benthic habitats by flattening substrates and removing structurally complex species such as hydroids, bryozoans, and seaweeds. Such habitats are key nursery and feeding areas for a wide range of species, including commercially important fish and shellfish.

The extent of the impact however varies considerably depending upon the habitat. More mobile sediments, such as sand, mud and to a lesser extent gravel, appear more resilient than others, particularly in areas adapted to high levels of natural disturbance. By comparison, typically stable mixed sediment beds (cobble, pebble, gravel, shell debris, sand, and mud mixtures) are particularly vulnerable to scallop dredging because they are dominated by structural organisms that provide important settlement substrates for many other species, including scallop spat.

In addition to capturing scallops, dredges capture a wide variety of non-target species such as finfish, crustaceans, echinoderms, and molluscs (bivalves, gastropods, and cephalopods). In this way, scallop dredging may significantly reduce the diversity of species, numbers of individuals and biomass of macrofauna.

[Environmental analysis](#) completed by MMO found there is insufficient evidence to specifically determine the effect of scallop dredging on the seabed and sole population in Lyme Bay. It is understood that dredging occurs in areas with both mobile (less sensitive) and more stable (sensitive) sediment types. However, as discussed above there is significant evidence in general to infer that higher dredging activity will cause more damage to the ecosystem.

### Social and Economic Considerations

[Economic analysis](#) conducted by Seafish shows vessels operating scallop dredges have had an increasing annual average operating profit since 2020 and at around £50,000, which is higher than the average for other gear types except beam trawls. MMO considers that the increased operating profit may imply that these vessels can withstand a potential slight reduction in profit if a measure to reduce sole catches by dredges is introduced.

### Governance

[The Joint Fisheries Statement](#) (JFS) outlines our national and international agreements which fisheries bodies are required to have regard to. These include the [Marine Strategy Regulations 2010](#), which require fishery bodies in the UK to take action to achieve or maintain Good Environmental Status (GES) in all UK waters and the [UK Marine Strategy](#) which is a key pillar of marine policy in the UK. The JFS also details further the fisheries objectives set out in the [Fisheries Act 2020](#) in section 2. Pertinent objectives to this scenario are the sustainable objective, which states that “*short-term socio-economic decisions should not significantly compromise the long-term health of the marine environment*”; the ecosystem objective which looks to “*minimise the impacts of fishing on the environment beyond individual stocks, such as damage to seabed habitats*”; and the precautionary objective which requires that “*the absence of sufficient scientific information is not used to justify postponing or failing to take management measures to conserve target species, associated or dependent species, non-target species or their environment.*”

Section 25 of the Fisheries Act also requires the MMO to seek to incentivise –

- a) the use of selective fishing gear
- b) the use of fishing techniques that have a reduced impact on the environment (for example that use less energy or cause less damage to habitats).

Therefore, the legislation described above suggests MMO should consider management measures to restrict the impact of dredging and help protect the sole stock and wider ecosystem.

### **MMO conclusion:**

As outlined in the consultation, one management option is to set different catch limits for different gear types. Gear types specifically designed to catch finfish have associated technical measures that make them more selective and / or less damaging to the environment. Further detail on the effect of different gear types on the environment is discussed [here](#). Therefore, by setting a reduced catch limit for sole caught using dredges there is an incentive for fishers wishing to catch sole to use other gear types that are specifically designed to catch finfish.

MMO will:

1. Set a monthly 200 kg catch limit for sole when using scallop dredges in 7.e for non-sector vessels (see below for further detail on this). This will be enacted from November 2023.
2. Work with Producer Organisations to find ways to reduce sole bycatch when fishing for scallops with dredges.

Considerations made in relation to this decision were:

- The 200 kg catch limit will be set via licence condition. A notification of the change will be sent to licence holders when the condition is put in place. The catch limit can be adjusted reactively to match appropriate to levels of bycatch.
- To ensure fisheries are managed in line with the ecosystem and sustainability objectives MMO intend to set a catch limit for the whole of 7.e and not just Lyme Bay because this is an existing management area and easier for fishers to monitor their catch. As an associated benefit it will also help protect the wider ecosystem and sole stock.
- The limit has been set following assessment of landings data. Landings by dredge in 7e from 2017-2023 were assessed where the composition of landings contained both scallops and sole. This concluded that the sole bycatch from the majority of dredged landings were well below 200 kg. Therefore, a 200 kg monthly catch limit would have little impact on the majority of vessels with small amounts of sole bycatch but would impact vessels who may be targeting sole with dredges.
- Natural England have been consulted and support the use of these measures which they say will “incentivise the use of more selective and lower impact gears”.
- By setting a catch limit instead of a percentage bycatch, fishers still have the opportunity to lease additional quota to cover any incidental catches made over the catch limit. The cost of the lease serves to maintain the incentive to avoid any incidental catches.

- The catch limit will apply to non-sector vessels (i.e. vessels which are not part of a producer organisation). This is because MMO manages quota for non-sector vessels, whilst producer organisations are responsible for allocating quota between members.
- MMO will discuss with producer organisations ways for their members to reduce sole bycatch. This aims to reduce that potential negative effects of dredges on the environment, in line with the sustainability and ecosystem objectives as discussed above.

## 6. Measures to alleviate gear conflict

**We asked:** Do you think that there should be some form of separation between the use of certain gear types in certain areas at certain times inside 30E6 and 30E7? And if so, which gear types and when?

Also, do you think there should be enhanced visibility requirements for fixed net markers in Lyme Bay e.g., the use of flags or specifically coloured marker buoys when fishing for sole inside 30E6 and 30E7?

### Summary of consultation responses:

#### Separation of gear types

Responses had conflicting opinions on which gear types should be restricted, largely based on how they impact the individual responding. There was a lot of support for separating gear types, but it was not always clear in the answers as to whether they should operate at different times or in different areas. There were several responses requesting either just fixed nets, just bottom towed gear, or a prohibition on all commercial gear close to shore, with suggested distances varying from 500 yards to 12 nm.

#### Gear Marking

70% of respondents believed there should be some form of enhanced gear marking in Lyme Bay and they cited the need to help prevent gear conflict. Those that did not think enhanced gear marking was necessary expressed concerns about safety when using flags to mark fixed gear.

### Environmental, social and economic considerations:

It is evident from the consultation responses and discussion at the workshop as well as incidental information reported to MMO that gear conflict primarily resulting in the loss of fixed gear is an issue in Lyme Bay. There are also concerns from recreational anglers that they are unable to fish due to the presence of commercial vessels and gear close to shore.

The loss of fishing gear has environmental implications in terms of increased bycatch and plastic pollution. Fishers also suffer a financial loss as well as a loss of time which is felt by vessels that lose the gear as well as vessels that accidentally entangle or tow the gear away.

It is reported by some fishers that these social and financial implications are leading to a reduction in fishing activity and are a barrier to new entrants. Both effects have associated social and economic impacts.

Current voluntary measures regarding the marking of passive gear are not adhered to by all vessels. The consultation responses indicated that most fishers are in favour of the use of some mandatory measures where necessary to ensure all those affected are affected equally.

Therefore MMO considers enhanced marking of fishing gear being a necessary legal measure to help prevent gear being lost and therefore reduce the environmental, social and economic effects that are otherwise a result of lost gear.

### **MMO conclusion:**

#### Separation of Gear Types

MMO will facilitate a meeting for representative industry members to discuss the potential for separating areas of Lyme Bay (ICES Rectangles 30E6 and 30E7) out to 12 nm, for use by different fishing methods at different times.

This concept was discussed at the workshop on 19 June. It was acknowledged at the workshop and evident in the consultation responses that fishers did not want to be permanently excluded from particular areas but there is a willingness to consider temporary exclusion and rotation between areas in order to limit gear conflict.

It was agreed at the workshop that the meeting would be held in early 2024. MMO will facilitate the meeting and provide the secretariat, but the conversation will be industry led. Attendees at this meeting will represent all gear types used in Lyme Bay including recreational anglers.

The output of the meeting may result in fishing vessel licence conditions prohibiting certain gear types from accessing certain areas of 30E6 and 30E7 at certain times during 2024.

These meetings will continue on a yearly basis to discuss the effectiveness of any measures brought in in the previous year and to discuss changes for future years.

#### Gear Marking

MMO will create a new fishing vessel licence condition that requires enhanced visibility and identification of passive gear inside ICES Rectangles 30E6 and 30E7 out to 12 nm. The condition will also require the east and west ends of the gear to be differentiated to easily determine the direction of travel of the gear.

The wording of the licence condition will be similar and complementary to that which is required for all gear set outside 12 nm. It will also sit alongside and be complementary to any Inshore Fisheries and Conservation Authority legislation regarding gear marking. The licence condition will be in force from November 2023.

MMO considers it best practice that markers for passive gear are buoys, flags or dahns specifically designed for the purpose of marking fishing gear,

The licence condition may be worded as follows:

- The master or their representative must ensure that two end markers (markers include buoys, flags or dahns) are fixed to each passive gear used for fishing and are deployed in accordance with the provisions of this Section.

- Each marker must display the external registration letters and numbers displayed on the hull of the fishing vessel to which they belong to.
- Markers must be in a colour contrasting with the surface on which they are displayed; and
- the letters and numbers displayed shall not be removed, altered or allowed to become illegible.
- Markers shall be deployed so that each end of the gear may be determined at any time as follows:
  - the marker in the western sector (meaning the half compass circle from south through west to and including north) must display either the letter W or two striped luminous bands.
  - the marker in the eastern sector (meaning the half compass circle from north through east to and including the south) must display either the letter E one striped luminous band.
- striped luminous bands shall be neither red nor green and must be at least six centimetres broad.

### Communications

MMO has created an anonymous method for reporting lost gear for those that have either lost gear or accidentally come into contact with someone else's gear. The [form](#) is available on the [South West Regional Fisheries Group Website](#). The information collected will be anonymous and will be used to inform discussion on the potential for temporary separation of areas for fishing with certain gear types as discussed above. It will not be used for enforcement purposes.

MMO also suggests people wishing to fish in the Lyme bay area use forms of communication such as WhatsApp to inform others about the location of gear and to avoid gear conflict.

## 7. Gear Modifications

We asked four questions relating to potential changes in gear specification for fixed nets, otter trawls, beam trawls and dredges:

### Fixed nets

**We asked:** For fixed nets do you think the minimum mesh size should be increased to 5" (127 mm) when fishing for sole inside 30E6 and 30E7?

### **Summary of consultation responses:**

There was significant support for an increase in mesh size for fixed nets but there were some fixed net users who responded to the consultation and did not think this was measure was needed, their reasoning being that they believed the sole population was healthy and did not need any extra management measures. Contrary to this, all those present at the workshop to discuss the consultation results, who represented fixed net fishers were in favour of the increase.

### **Environmental, social and economic considerations:**

[Economic analysis](#) shows that the fixed net fleet have a declining annual operating profit in comparison to all other gear types whose profits appear to be increasing.

Analysis of Catch App data and observations made by IFCA/MMO patrols show that approximately 75 % of the fixed net fleet already use a mesh size greater than required by legislation.

Analysis of catch and landings data by [Cefas](#) shows that the mean size of sole caught in set nets is 37cm and 99% of catch is greater than 28cm which is the size at which 50% are considered mature. Mean size of fish caught in bottom towed gear varied between 31cm and 33cm and 77% to 88% are greater than 28cm. In principle, increases in mesh size should lead to a reduction in catches of smaller sole but the quantitative benefit this would have on the sole population has not been assessed.

### **MMO conclusion:**

On balance it is considered that the potential economic loss felt by vessels not already using a larger mesh size would be greater than the environmental benefit derived from the implementation of this measure. MMO considers that if measures to increase selectivity would have to be brought in for trawls as well if this measure was to be fair from an economic perspective and derive sufficient environmental benefit.

MMO will consider this further in combination with additional scientific advice MMO aims to commission regarding the potential benefit to the stock of an increase in MCRS and associated mesh size changes for all gear types.

### Otter and beam trawls

**We asked:** For otter and beam trawls do you think the minimum mesh size should be increased above 80 mm when fishing for sole inside 30E6 and 30E7?

### **Summary of consultation responses:**

There was a clear split in answers between those who used trawls and those that used other gears. Fishers who wanted an increase in minimum mesh size fished with gears other than trawls, whilst those who fished with trawls did not want an increase in mesh size. From some of those who wanted an increase in mesh size, they also used the free text responses to suggest that an increased mesh size for these gear types may help reduce pressure on the stock and environment.

### **Environmental, social and economic considerations:**

The social, economic and environmental interactions are complex and more evidence is required to determine what benefit to the stock would be derived from specific changes. More information to aid understanding of the potential impact of increasing minimum mesh size for trawls will be derived from ongoing development of the [Channel Demersal Non-Quota Species Fisheries Management Plan](#).

### **MMO conclusion:**

MMO will consider this further in combination with additional scientific advice MMO aims to commission regarding the potential benefit to the stock of an increase in MCRS and associated mesh size changes for all gear types.

### Scallop dredges

**We asked:** For scallop dredges do you think there should be increased selectivity requirements e.g. an escape mechanism for fish when fishing inside 30E6 and 30E7?

**Summary of consultation responses:**

Nearly 70% of the consultation respondents believed there should be some form of modification to scallop dredges 7% said there should not be any modification. Those that disagreed operated bottom towed gears and from the free text responses, tended to believe there were no problems in Lyme Bay and no management measures needed.

**Environmental, social and economic considerations:**

In principle, selectivity of dredges could be increased to have a more positive environmental effect but some consultation responses suggested selectivity should not be increased as this may incentivise fishing for sole with dredges, which would also have a negative environmental impact. There may also be economic effects caused by increased selectivity that would depend on how selective the dredges were. There is however significant evidence to show that increased selectivity and reduction of pressure from dredges would be beneficial for the environment in terms of reduced impact on the seabed and reduced by-catch. Further information on this is provided [here](#).

**MMO conclusion:**

Changes to scallop dredge design requires scientific input into the design and testing of prototypes. MMO is aware of work to investigate increased selectivity of dredges and will monitor progress with this via the [UK Gear Forum](#).

MMO is introducing a reduced catch limit for sole when fishing with dredges as described in section 3.

## 8. Next steps, review and monitoring

MMO will be issuing new licence conditions for the gear marking (section 4) and sole bycatch (section 3) in the near future. The meeting to discuss spatial separation referred to in section 4 will also be used to update stakeholders on progress with actions to collect more scientific advice for the potential implementation of measures regarding MCRS (section 2) and future gear modifications (section 5).

MMO's evidence team will be overseeing two types of evaluation in relation to this project. The evaluations will be carried out by organisations independent from the MMO:

1. A process evaluation to determine the effectiveness of stakeholder engagement in this project that will consider the initiatives/processes used to support a collaborative approach and to co-design management outputs going forwards
2. An evaluation of the effectiveness of the new management measures. The results of this evaluation will be presented to industry and existing management measures reviewed and adapted accordingly in partnership with industry.

To inform the review and evaluation the sole fishery in Lyme Bay will continue to be monitored by MMO. Data will be collected and analysed from all relevant sources including landings data, observer data, logbooks, catch app and VMS and IVMS as appropriate. Environmental, social and economic analysis will also be continued and developed. This information will then be discussed with industry before any further changes are made.

## 9. Conclusion

MMO would like to thank all those involved with this project, associated government bodies but in particular the fisheries stakeholders and the fishers themselves who have dedicated the time to working with us to highlight the issues, collect the necessary information and evaluate the data.

MMO is committed to developing a collaborative approach to fisheries management and this project is an example of how that can be a success. This is however just the beginning, the effectiveness of the new measures and those under development will be monitored and evaluated and the results shared and discussed with industry in order to ensure the sole fishery in Lyme Bay and wider are managed in the most environmentally, socially and sustainably way possible.