

# **Consultation on New Controls in the Queen Scallop Fishery in ICES Divisions VIa and VIIa**

**October 2016**

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# 1. Introduction

## 1.1 Executive summary

This consultation seeks views on the introduction of new management measures in the queen scallop fishery in ICES divisions VIa (north coast of Northern Ireland and western Scotland) and VIIa (Irish Sea).

The UK queen scallop fishery is worth approximately £6 million per year and helps to sustain jobs in many coastal communities where other forms of employment may not be readily available.

However, there are concerns over the health of the queen scallop stock and recent levels of fishing activity. The queen scallop fishery around the Isle of Man had its Marine Stewardship Council (MSC) sustainability certification suspended in 2014, primarily in response to stock assessments in the territorial sea that showed reduced biomass. There are also concerns over the level of fishing effort in the wider fishery.

As a result of correspondence from some queen scallop fishermen and processors about the fishery, a working group was formed which included fishermen, processors, fisheries administrations and scientists. Its aim was to assess the current status of the fishery and, if appropriate, develop management measures and reduce long-term risk.

Following significant discussion, the working group considered that in the short term the following management measures should be introduced to help ensure the sustainability of the stock and these form the basis of this consultation:

- Increase the minimum conservation reference size (MCRS) of queen scallops
- Introduce a voluntary closed season
- Introduce limits on the number of vessels able to prosecute the fishery, specifically via entry restrictions.

To inform longer-term management options, views are sought on additional management measures which were also considered by the working group, but which were either not supported in the short-term, or required the development of more specific proposals. It is not intended that any of these additional measures be introduced as a direct result of this consultation. However, responses will help inform future considerations for the fishery.

These are:

- Effort reduction measures (restricting time that vessels can fish)
- Catch quotas
- Closed areas
- Gear-specific management

## 1.2 Responding to this Consultation

This consultation is being conducted on behalf of the five<sup>1</sup> UK and Isle of Man Fisheries Administrations.

The purpose of this consultation is to seek the views of those with an interest in queen scallop fishing, in order to inform policy decisions regarding the future management of the fishery. The consultation will last for 12 weeks, commencing on 11 October 2016 with a deadline of 3 January 2017 for responses.

Please respond to this consultation using the Scottish Government's consultation platform, Citizen Space. You can view and respond to this consultation online at <https://consult.scotland.gov.uk/marine-scotland/queen-scallop-consultation>. You can save and return to your responses while the consultation is still open. Please ensure that consultation responses are submitted before the above closing date.

If you are unable to respond online, please complete and send the Respondent Information Form (see "Handling your Response" below) to:

Queen Scallop Consultation  
Area 1B South  
Victoria Quay  
Edinburgh  
EH6 6QQ

## 1.3 Handling Your Response

If you respond using Citizen Space (<http://consult.scotland.gov.uk>), you will be directed to the Respondent Information Form. Please indicate how you wish your response to be handled and, in particular, whether you are happy for your response to be published.

If you are unable to respond via Citizen Space, please complete and return the Respondent Information Form included in this document (Annex A). If you ask for your response not to be published, we will regard it as confidential, and we will treat it accordingly.

All respondents should be aware that the Scottish Government is subject to the provisions of the Freedom of Information (Scotland) Act 2002 and would therefore have to consider any request made to it under the Act for information relating to responses made to this consultation exercise.

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<sup>1</sup> The five fisheries administrations are: Marine Scotland, DEFRA (Department for Environment, Food and Rural Affairs), DAERA (Department of Agriculture Environment and Rural Affairs - Northern Ireland), Welsh Government and DEFA (Department of Environment, Food and Agriculture - Isle of Man).

## 1.4 Next Steps in the process

Where respondents have given permission for their response to be made public, and after we have checked that they contain no potentially defamatory material, responses will be made available to the public at <http://consult.scotland.gov.uk>. If you use Citizen Space to respond, you will receive a copy of your response via email.

Following the closing date, all responses will be analysed and considered along with any other available evidence to help us. Responses will be published where we have been given permission to do so.

## 1.5 Comments and Complaints

If you have any queries about this consultation, or comments about how this consultation exercise has been conducted, please contact the Inshore Fisheries Management and Coastal Communities Team on 0131 244 4421 or [queen\\_scallop@gov.scot](mailto:queen_scallop@gov.scot).

## 1.6 Scottish Government Consultation Process

Consultation is an essential part of the policy-making process. It gives us the opportunity to consider your opinion and expertise on a proposed area of work.

You can find all our consultations online: <http://consult.scotland.gov.uk>. Each consultation details the issues under consideration, as well as a way for you to give us your views, either online, by email or by post.

Consultations may involve seeking views in a number of different ways, such as public meetings, focus groups, or other online methods such as Dialogue (<https://www.ideas.gov.scot>).

Responses will be analysed and used as part of the decision making process, along with a range of other available information and evidence. We will publish a report of this analysis for every consultation. Depending on the nature of the consultation exercise the responses received may:

- indicate the need for policy development or review
- inform the development of a particular policy
- help decisions to be made between alternative policy proposals
- be used to finalise legislation before it is implemented

While details of particular circumstances described in a response to a consultation exercise may usefully inform the policy process, consultation exercises cannot address individual concerns and comments, which should be directed to the relevant public body.



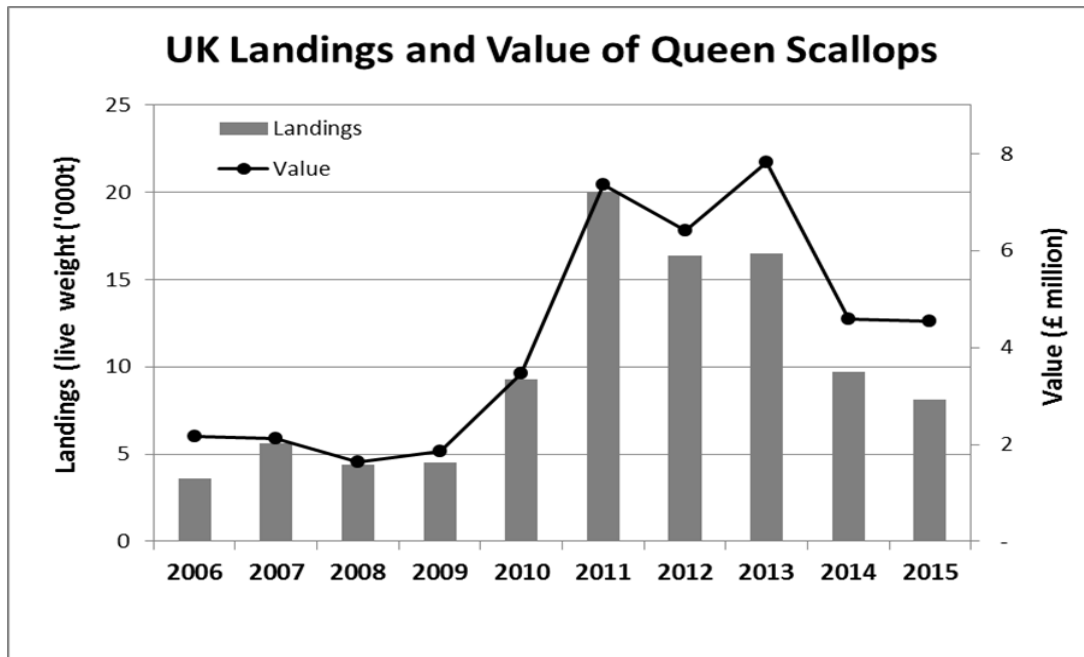


Figure 2 UK landings and value of queen scallops between 2006 and 2015 (all areas) (Source: MMO)

### 3. A Joint Management Approach to Queen Scallops and the Queen Scallop Working Group

In 2013 the Fisheries Administrations of the UK and the IoM were approached by representatives of the queen scallop fishing industry requesting greater controls and scientific investigation for the fishery. This was a consequence of perceived reductions in catches and catch per unit effort (i.e. catch for time spent fishing).

As a result, a process was established, which included the Fisheries Administrations and fisheries scientists, to investigate the need for the introduction of new management controls. This process began in 2014, and included the collation and assessment of available fisheries science data followed by an initial consideration of potential measures and mechanisms to protect the fishery.

Subsequently, the conclusions were presented to representatives of the UK and IoM queen scallop fleet, and a queen scallop working group was established to consider the need for additional management in the fishery. The working group included representatives from the fishing industry, fisheries management authorities and fisheries science organisations<sup>2</sup>.

Over a series of meetings in 2015, the evidence and options were discussed in detail, leading to the development of the management options presented in this consultation document.

<sup>2</sup> Full details of the representatives on the working group can be found in Annex B



It is important to note that these new management measures would apply to British fishing vessels<sup>3</sup> only. Article 46 of EC 850/98 and Article 19 of the Common Fisheries Policy Regulation 1380/2013 allows for member states to introduce management measures for the conservation and management of stocks which can be applied solely to the fishermen of the Member State concerned.

## 4. Development of the Fishery

### 4.1 Recent Trends in Landings in the Queen Scallop Fishery

The queen scallop fishery has historically provided fairly consistent annual landings of around 10-15,000 tonnes from all fishing areas (Figure 3). However, from 2009 landings rose rapidly reaching almost 60,000 tonnes by 2012. This trend was shown in several fishing areas, but particularly in divisions VIa and VIIa, and represents a significant expansion of the fishery. Although probably linked to a major recruitment event and natural expansion of the stock, the long-term implications of this increase in fishing effort are unknown.

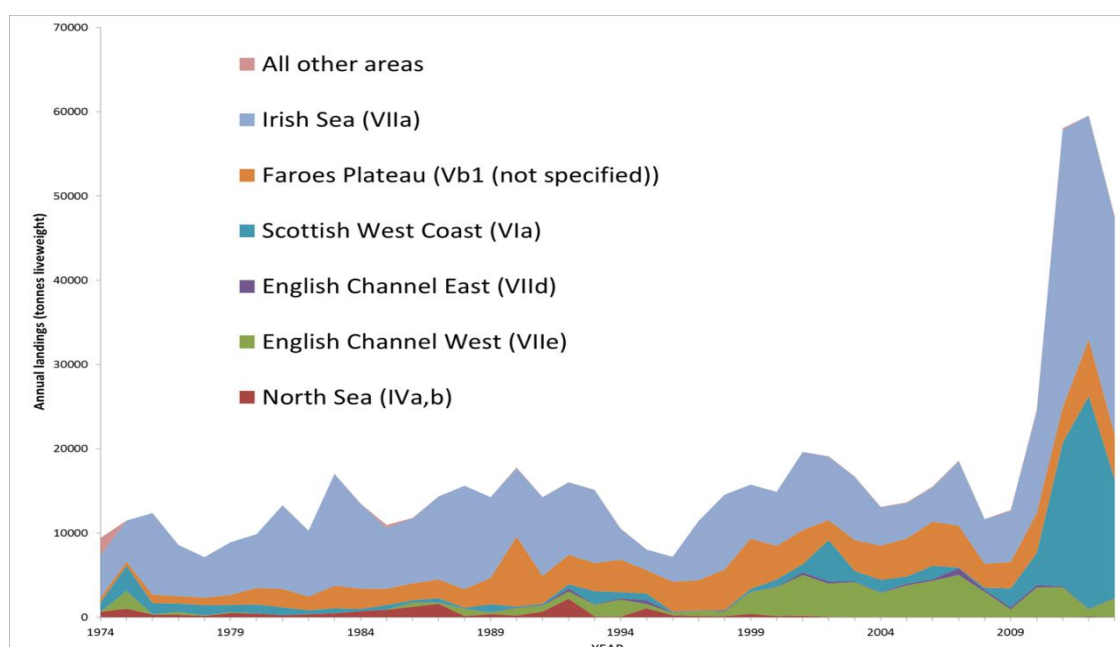


Figure 3 Annual landings of queen scallops (tonnes live weight) from European waters between 1974 and 2013. Landings are shown from major fishing statistical divisions (see also Figure 1) (Source: ICES).

### 4.2 Recent Trends in Effort in the Queen Scallop Fishery

As stock abundance increased and market conditions improved, increasing numbers of fishing vessels have entered the fishery (Figure 4) responding to recent high stock levels, unrestricted entry and limited management controls.

<sup>3</sup> "British fishing vessel" means a fishing vessel which is registered in the UK or the Isle of Man under the Merchant Shipping (Registration of Fishing Vessels) Regulations 2011 or the Channel Islands under equivalent legislation, and which hold a valid UK commercial fishing licence.

In addition, there are significantly more vessels which are eligible to fish for queen scallops should they choose to do so, and this 'latent capacity' is also a potential problem for the long-term management of the fishery.

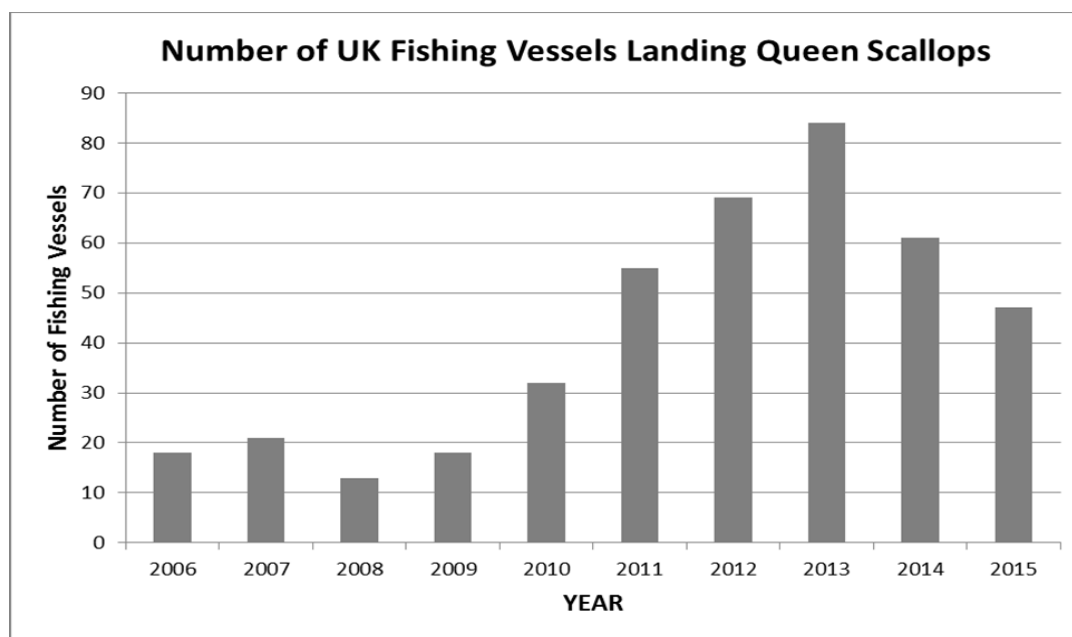


Figure 4 Number of UK fishing vessels recording landings of queen scallops into UK ports between 2006 and 2015 (from all fishing areas) (Source: MMO).

## 5. Current Management Measures in the Queen Scallop Fishery

In comparison to other fisheries in UK waters, there are relatively few controls for queen scallops. Currently the fishery is subject to:

- An EU minimum landing size of 40 mm,
- Some control of fishing effort for vessels over 15 metres in length via the EU Western Waters management regime.<sup>4</sup>

However, unlike other fisheries:

- There are no entry restrictions into the fishery,
- It is not covered by an EU Total Allowable Catch (quota),
- There are no limits to catching periods or fishing time (seasonal closures or curfews).

## 6. Current Management within the Isle of Man Territorial Sea

In contrast to UK waters, a series of management controls have been introduced within the Isle of Man territorial sea since 2010 in an attempt to protect stock levels and contribute to more stable fishery production and value. These management measures helped the Isle of Man queen scallop trawl fishery achieve sustainability certification by the Marine Stewardship Council, although they did not prevent the major stock decline observed since 2011. This has subsequently resulted in even more stringent controls and a severely diminished fishery.

<sup>4</sup> <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52010DC0661>

Management measures currently in place within Isle of Man territorial waters include:

- An annual total allowable catch quota and weekly individual vessel quotas,
- A minimum landing size of 55 mm,
- An effective fishery closure between (approximately) November and June each year (statutory closed season between 1<sup>st</sup> April and 31<sup>st</sup> May, no trawl fishery between November and April, and a very limited dredge fishery around October),
- A series of closed areas to protect reproductive stock,
- Temporal fishing restrictions (daily and weekly),
- Significant restrictions on dredge fishing for this species<sup>5</sup>.

## 7. Health of Queen Scallop Stocks

A significant impediment to the development of appropriate management for the fishery is the lack of detailed information on catches (other than quantity landed) or stock assessments relating to the whole stock area. Information which is typically used to underpin and inform management measures.

However, there are various sources of information that are indicative of the status and trends of queen scallop stocks and fisheries. These are summarised below:

- **UK data:** National fisheries administrations collect and collate fisheries data, including vessel numbers, target species and landings by weight and value. These have been used to produce Figures 2 and 3 that indicates the long-term historical trend in European queen scallop fisheries, and the unprecedented level of landings in the period 2011 to 2013.
- **Isle of Man data:** the Isle of Man Government and its associated scientific advisors (University of Liverpool, up to 2006, and Bangor University, 2007 - present) have conducted stock surveys and assessments for queen scallops in Manx territorial waters for many years providing a long-term data set to enable comparison of annual stock abundance. Since 2012, stock assessments have been conducted which have resulted in scientifically-advised annual quotas.

These indicate an unusually high recruitment event between 2007 and 2009, associated with increased catches, but followed by precipitous stock and recruitment declines since 2010<sup>6</sup>. Unfortunately, fishing effort and landings did not decline concurrently, resulting in significant overfishing and stock collapse. The trends in vessel numbers and landings also appear to be replicated in data from outside the Manx territorial sea area (Figures 2, 3 and 4) and, although stock status has not been assessed, available evidence would suggest stock declines have occurred.

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<sup>5</sup> Full details on current queen scallop fishery management measures for the Isle of Man can be found at <https://www.gov.im/fishing/conditions>, and historically at <http://www.tynwald.org.im/links/tls/SD/Pages/default.aspx?&s=SD&k=scallop&r>

<sup>6</sup> See: <http://fisheries-conservation.bangor.ac.uk/iom/documents/58.pdf> for full details.

- **AFBI (Agri-Food and Biosciences Institute):** The increasing importance of queen scallops to Northern Ireland over recent years resulted in the start of annual surveys from 2013, as well as detailed analysis of existing UK and Isle of Man fisheries data across the species' distribution. Survey results conducted in UK waters (Divisions VIa and VIIa) are in broad agreement with Isle of Man assessments.

Importantly, two independent assessments of Catch Per Unit Effort (CPUE) trends derived from UK (Figure 5) and Irish vessels<sup>7</sup> show variation over the time series and a declining trend since 2011-2012, indicating reducing numbers of queen scallops caught per unit of fishing effort over time.

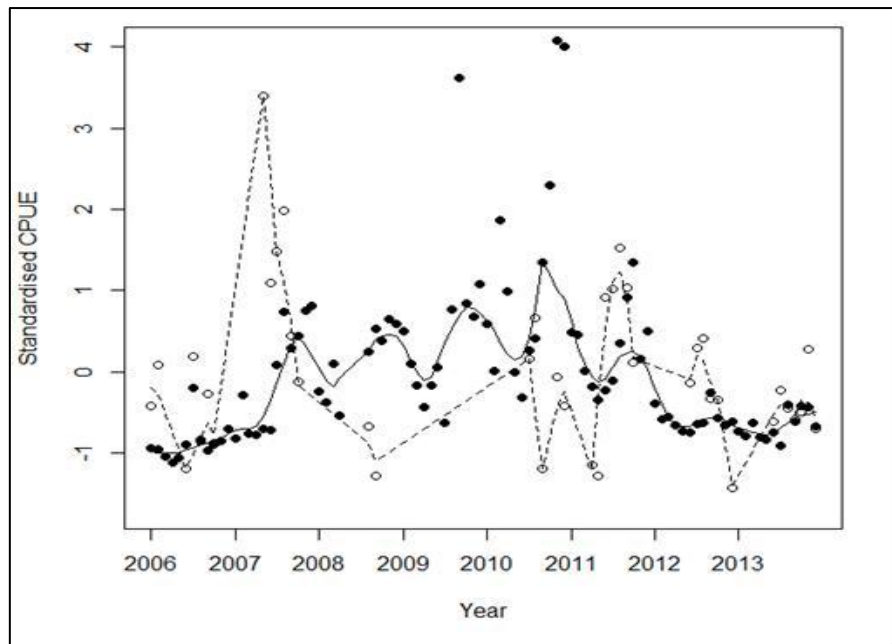


Figure 5 Mean standardised CPUE trend for Division VIIa with smoother fitted showing general decline. Solid symbols are for dredges and open circles are for otter trawls. NOTE: some catch data missing, so CPUE values likely to be lower than expected (Source: AFBI).

- **Industry information:** anecdotal industry-derived information on declining stock status instigated the management working group initiative. Throughout the process general concern about stock levels, increasing and unrestricted levels of fishing effort and lack of comprehensive scientific data were voiced. Improved management has been specifically requested by two of the main scallop fishing representative organisations (UK Scallop Association and the Scottish Fishermen's Federation), and industry working group representatives have supported the conclusions and outcomes of the process, all of which may be considered indicative of industry concerns about the health of queen scallop stocks.

<sup>7</sup> Quigley, D.T.G., MacGabhann, D., 2015. Queen scallops (*Aequipecten opercularis*) in Irish waters: spatial and temporal landing patterns, fleet characteristics and estimated CPUE (2003\_2014). Book of Abstracts: 20th International Pectinid Workshop, Galway, Ireland, 22-28, April 2015, pp. 132. (<http://ipw2015.com/wp-content/uploads/2015/05/IPW2015-Book-of-Abstracts.pdf>)

In summary, the reasons for pursuing the introduction and development of longer-term management measures in the queen scallop fishery are as follows:

- Evidence of uncontrolled and increasing vessel numbers, fishing effort and high landings of the species; recently at record levels,
- Strong scientific evidence of subsequent stock and recruitment declines and decreasing CPUE in major parts of the fishery area,
- Lack of management measures in the queen scallop fishery, with the exception of the Isle of Man,
- Reports and concerns about declining stock status expressed by industry,
- Potential long-term economic and sustainability benefits of developing more effective and consistent management measures across the multi-jurisdictional distribution of the species,
- Potential to improve control of fishing effort across shellfish fisheries,
- The need to address European Union Marine Strategy Framework Directive requirements to manage key commercial species around sustainable limits.

## **8. Consultation Proposals**

The management proposals contained in this document are informed by a joint working group comprising Fisheries Administrations, catching and processing industry representatives and fisheries scientists. The working group considered numerous options and developed these proposals during a series of meetings with a view to seeking agreement on their introduction and further information for potential future development.

There was a consensus from the Working Group that the following management measures should be introduced as soon as possible:

- An increase in the minimum landing size of queen scallops,
- A voluntary closed season for the fishery,
- Entry restrictions to limit the number of vessels able to participate.

These three management measures are explored below in **Part 1 - Management Measures Advocated by the Working Group.**

**Part 2 - Additional Management Options for Consideration in the Medium to Long Term** contains additional management options that were considered but not supported by the working group for immediate introduction. However, in order to inform longer-term management of the fishery, Fisheries Administrations are seeking views on these additional measures.

## 9. PART 1 - Management Measures Advocated by the Working Group

### 9.1 Proposal 1 - Increasing the Minimum Conservation Reference Size<sup>8</sup> (MCRS) of Queen Scallops

The current EU MCRS for queen scallop is 40 mm and it applies in all UK waters, although in Isle of Man territorial sea the MCRS is 55 mm.

MCRS is a commonly used fishery management tool that helps ensure that a proportion of animals are reproductively mature and have spawned before being harvested. This helps ensure that recruitment of juveniles is maintained and that the population remains healthy.

For queen scallops, scientific information indicates that size at maturity is between 22-45 mm and varies according to area, due to different growth rates<sup>9</sup>. Therefore, with a MCRS of 40 mm it is likely that the majority of animals caught have matured, but it may not ensure that most animals have spawned at least once in all areas. Additionally, it has been shown that smaller scallops, e.g. those in their first spawning years, have a lower reproductive output which may be of lower quality. Larger animals produce more larvae of better quality, and have had more opportunity to spawn (multiple years), so protecting scallops until they are larger is likely to be beneficial to the recruitment process.

The potential benefits to recruitment of increasing MCRS need to be considered in relation to the potential effect on fishermen's income, both short and longer term.

Surveys of queen scallop populations over 6 years (2008-2014) by Bangor University, using commercial fishing gear within the Manx territorial sea, indicates that **97%** of the queen scallops sampled are greater than 40 mm, while **91.5%** are greater than 50 mm, **81%** are greater than 54 mm and **65%** are greater than 59 mm<sup>10</sup>. Therefore, in simple terms, and without consideration of relative catchability of different sized scallops, or size variability between areas, the potential reduction in number of scallops landed could be as follows:

- **No change to MCRS = no change to landings**
- **Increase to 50 mm = landings quantity decrease of 5.5% (i.e. 97-91.5%)**
- **Increase to 55 mm = landings quantity decrease of 16% (i.e. 97-81%)**
- **Increase to 60 mm = landings quantity decrease of 32% (i.e. 97-65%)**

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<sup>8</sup> Formerly known as Minimum Landing Size (MLS)

<sup>9</sup> Aravindakshan, I., 1955. Studies on the biology of the queen scallop, *Chlamys opercularis* (L.). PhD. Thesis. University of Liverpool.

Vause, B. J., *et al.*, 2006 Age composition and growth rates of queen scallops *Aequipecten opercularis* (L.) around the Isle of Man. Journal of Shellfish Research 25: 310-312.

<sup>10</sup> Bangor University, unpublished data.

It should also be noted that price paid for catch varies with size, and so the percentage decrease in landings quantity **does not equate** to an equivalent reduction in value.

There are some additional points to note in relation to this proposal;

- Historically, relatively few queen scallops less than 50 mm were landed since processing them by hand was uneconomic. However, developments in technology has made processing smaller scallops possible. Fishing vessels are also thought to have landed greater numbers of smaller scallops in order to maintain income.
- Because prices paid to fishermen vary with scallop meat yield, the potential reduction in income by increasing MCRS should be temporary, as the same animal caught later would realise a higher value.
- Potential costs associated with increasing the size selectivity of fishing gear for larger scallops: although this factor will vary between individual vessels and may not be significant.

**Question 1 - Do you support increasing the MCRS of queen scallops in ICES divisions VIa and VIIa?**

- a) YES
- b) NO

**Question 2 - If YES, what size should the MCRS be increased to?**

- a) 50 mm
- b) 55 mm
- c) 60 mm

**Question 3 - What impacts would increasing the MCRS of queen scallops have on your business? What would the likely costs be?**

## **9.2 Proposal 2 - Introduction of a Closed Season for Queen Scallops**

At present queen scallops may be fished throughout the year in UK waters. There is a statutory seasonal closure for fishing queen scallops in Isle of Man waters between the 1<sup>st</sup> April and 31<sup>st</sup> May.

The purpose of a closed season is to protect scallops during the main spawning season and to allow animals to spawn before they are caught. Many marine animals broadly synchronise spawning to the period when water temperatures are increasing and food availability is high, thereby maximising the chances of larval survival. Scientific evidence indicates that queen scallops typically spawn in the spring (March - May), although secondary spawnings can occur later in the year (Autumn), and also periodically throughout the summer<sup>11,12</sup>. The spring spawning is considered to be the most

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<sup>11</sup> Jenkins, S.R., Lart, W., Vause, B.J., Brand, A.R., 2003. Seasonal swimming behaviour in the queen scallop (*Aequipecten opercularis*) and its effect on dredge fisheries. J. Exp. Mar. Bio. Ecol. 289, 163-179.

significant for settlement of juveniles<sup>11</sup>, although in some years the later spawnings may be important.

The extended spawning pattern is also commercially important because a valuable part of the queen scallop product is the mature reproductive organs, or roe, and so the presence of this component, to at least some extent throughout the year, means that any closure over the main spawning period should not excessively affect the economic value of the industry. Nevertheless, the timing of any closure needs to be considered as a balance between maximising reproductive output and maintaining the meat and roe-on product availability.

### 9.2.1 Timing of Seasonal closures (economic considerations)

The following processing data have been provided for queen scallops caught primarily in division VIIa, with some catch from division VIa. The trends are considered to be similar in both areas.

Table 1 provides a description of typical monthly variation in observed roe and meat condition, reflecting spawning and other condition cycles in the scallops. Of note are the low yields (the proportion of useable product weight to overall weight of the scallop) of roe following spawning in April and May, and the relatively poor condition of the meat in the early part of the year due to low feed levels.

By contrast, following feeding and recovery over summer there are good yields of meat and roe from July onwards. Finally, although an October spawning is typically recorded, effectively reducing yield, the meat quality is high at the end of the summer, and so overall yield remains good.

Month	Comments
January	Roe starts to develop
February	Good roe and reasonable yields.
March	As above.
April	Heavy spawning occurs producing <b>very low yields of both roe and meat.</b>
May	As above.
June	As above. Meat starts to recover to be good by end of June.
July	Full meat, good roe, <b>producing maximum yields of both.</b>
August	As above
September	As above
October	Spawning occurs. Good yields for meat only.
November	As above.
December	As above.

Figure 6 Qualitative assessment of variation in monthly yield, roe and meat condition for queen scallops landed for processing from Area VIIa (2010-2015).

<sup>12</sup> Brand, A.R., 2006. The European scallop fisheries for *Pecten maximus*, *Aequipecten opercularis* and *Mimachlamys varia*. In: Shumway, S.E., Parsons, G.J. (Eds.), *Scallops: Biology, Ecology and Aquaculture*, Second Ed. Elsevier, Amsterdam, pp. 991-1058.



Figure 6 shows the relative monthly trend in average yield over a 6-year period (2010-2015), which is again lower between January and June compared with July to December. Low yields are particularly marked between April and May, making machine processing for meat-only production unviable, although hand processing of specific catches may still provide reasonable yield from **reduced quantities** of high-quality scallops. Selective harvest from certain areas (e.g. deeper or hydrographically different) may allow maintenance of roe-on yield from reduced landings.

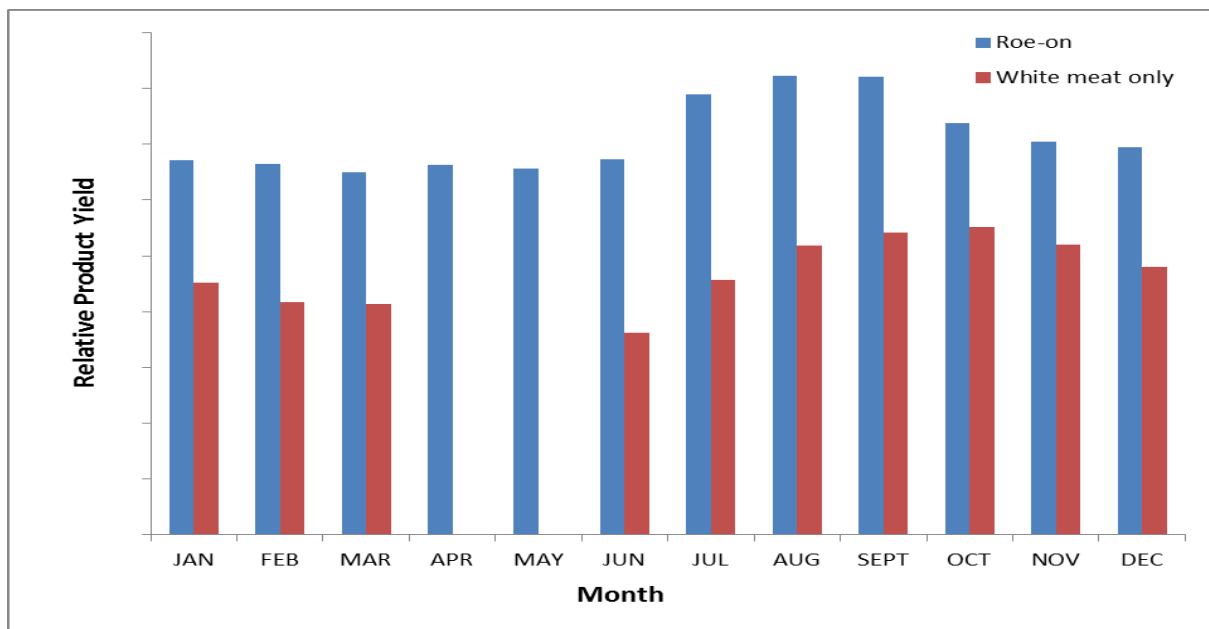


Figure 7 Variation in average monthly yield (roe-on and meat only) from queen scallops landed for processing from Area VIIa (2010-2015). Includes both dredge and trawl caught queen scallop. Note: values are for yield only, and do not indicate relative quantity.

Therefore, from both economic and biological perspectives, the most appropriate period for an annual fishery closure for Irish Sea queen scallops would be from April-May or April-June, depending on the desired duration.

While there is some regional and annual variation in spawning timing, a practical approach would be to define a general period of closure coinciding with the typical spring spawning period.

There was a clear preference from the working group for any seasonal closure to be introduced, at least initially, on a voluntary basis with some flexibility as to when the closure would be brought into effect, depending on biological and economic considerations. This was primarily due to the difficulties in predicting the possible impacts of such a closure. It was also considered desirable that if a closure were introduced, then the timing would again, initially, be reviewed annually with respect to biological and economic considerations.

A voluntary closure was thought necessary in order to fully understand the potential impacts on businesses and other stocks (e.g. fishers may move to targeting other species) before proceeding on a more formal basis.

**Question 4 - Do you support an annual spawning closure for queen scallops in ICES divisions VIa and VIIa?**

- a) YES
- b) NO

**Question 5 - If YES, which of the following closure options is preferred? Note: all of the following have a valid scientific basis, but differ primarily in their extended biological (positive effect) and economic effects (negative effect) (option b), or complexity of implementation (option c).**

- a) One annual closure between 1st April and 31st May (i.e. same as statutory Isle of Man Closure).
- b) One annual closure between 1st April and 30th June.
- c) One annual flexible closure between March and June, with specific timing determined by the fisheries management agencies, in consultation with industry representatives, and with reference to biological and commercial considerations.

**Question 6 - Should fishery closures be implemented on a voluntary or compulsory basis (statute or licence condition)?**

- a) Voluntary
- b) Compulsory

### **9.3 Proposal 3 - Entry Restrictions for the Queen Scallop Fishery**

The UK queen scallop fishery is an open access one, meaning that it is open to any vessel with a commercial fishing licence. In contrast there are limits on which vessels can fish for queen scallops within the Isle of Man territorial sea. In 2015, the Isle of Man Government limited access to the queen scallop fishery to those vessels with a track record of fishing activity. This resulted in a reduction of fishing entitlements for queen scallops from approximately 130 licenced vessels to 48.<sup>13</sup>

As indicated in Figure 4, 47 UK vessels landed queen scallops in 2015, but over the previous decade, in any one year, as few as 13 and as many as 84 reported landings from around the UK. An additional 26 vessels (as at 2015) from the Isle of Man typically fish for queen scallops.

Limiting the total number of active fishing vessels is an important fishery management option as annual changes in stock levels, due to fishing or natural factors, can result in significant annual variability in fishing effort. This makes long-term sustainable management and maintaining stock levels within safe biological limits very difficult to achieve.

Although during the working group process representatives of the queen scallop industry strongly supported entry restrictions, no agreement on the specific basis for restricting entry was reached. Various options are presented below to seek information and views.

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<sup>13</sup> <https://www.gov.im/ConsultationDetail.gov?id=481>

Restrictions on prosecuting fisheries are already applied through the licensing system on other key UK shellfish species (scallop entitlement, the Scottish razor permit, shellfish entitlement) which limit the number of vessels able to prosecute these species. New licence conditions or a new entitlement could be added to licences to restrict the number of vessels permitted to land queen scallops.

**Question 7 - Do you support the introduction of entry restrictions to the UK queen scallop fishery?**

- a) YES
- b) NO

During the working group process there was also support for greater data collection by industry members as a condition of receiving a queen scallop entitlement. This data could include a greater level of detail of area fished / fishing effort and could help to inform longer-term management.

**Question 8 - Do you support the introduction of additional data collection as a condition of receiving a queen scallop entitlement?**

- a) YES
- b) NO

### **9.3.1 Entry Restriction Options - Qualifying Period**

A number of criteria have been used to restrict entry into fisheries. These are intended to differentiate between consistent and irregular activity and, by inference, the importance of the fishery to the entitlement holder.

Available data indicate that 140 vessels recorded fishing activity for queen scallops in areas VIa and VIIa between 2010 and 2015 (source: MMO). Figure 4 shows the number of vessels participating in the fishery since 2006, indicating that any reference period including 2013 (the peak of vessel numbers) would probably tend to maintain current effort levels if track record was the only criterion.

When applying fishing track record to differentiate between eligible and non-eligible vessels generally a period of 3 years is used, the specific choice determining whether the number of vessels participating remains at current levels, or is actually reduced.

**Question 9 - What is the preferred 3-year reference period for determining eligibility for the fishery in future? (see Figure 4)**

- a) 2013-2015 - would tend to maintain current vessel numbers
- b) 2012-2014 - would tend to maintain current vessel numbers
- c) 2011-2013 - would tend to maintain current vessel numbers
- d) 2010-2012 - would tend to reduce current vessel numbers

### 9.3.2 Options for Entry Requirements

In addition to a reference period, specific activity criteria could be used singly or in combination; these may take the form of a specified landings quantity, a specific number of landings or the number of days spent fishing.

#### **Option 1 - Use of 'reported landings quantity' within the 3-year reference period to differentiate between eligible and non-eligible vessels.**

This would be similar to current UK shellfish entitlements, with the ability to prosecute the fishery being limited to those with recorded landings of the species.

**Question 10 - What is the preferred reference point for 'reported landings quantity' during the 3-year reference period?**

- a) Up to one tonne landed during the 3 years would qualify.
- b) Minimum of one tonne landed during the 3 years would qualify.
- c) Minimum of 5 tonnes landed during the 3 years would qualify.
- d) Minimum of 10 tonnes landed during the 3 years would qualify.
- e) NONE - prefer use of Option 2 or 3.

#### **Option 2 - Use of queen scallop 'landings frequency' within the 3-year reference period to differentiate between eligible and non-eligible vessels.**

The importance of queen scallop as a target species varies between boats, with some fishing year round, whereas others only when the opportunity arises. Minimising the impact of restrictions on those who most depend on queen scallops could be achieved by using the number of landings of queen scallops as an indication of targeted activity, and therefore future eligibility. Similarly, small fishing boats may land frequently, but only small amounts, therefore activity, rather than amount, may be fairer for smaller-capacity boats.

**Question 11 - What is the preferred reference point for 'landing frequency' during the 3-year reference period?**

- a) Any recorded landing during the 3 years would qualify.
- b) Between 10 and 20 landings over the 3-year period would qualify.
- c) Between 20 and 30 landings over the 3-year period would qualify.
- d) Between 30 and 50 landings over the 3-year period would qualify.
- e) More than 50 landings over the 3-year period required to qualify.
- f) NONE - prefer use of Option 1 or 3.

#### **Option 3 - Use of 'number of days at sea' of fishing activity within the 3-year reference period to differentiate between eligible and non-eligible vessels.**

The number of days spent fishing for queen scallops over the reference period may provide another alternative criteria. This would also be indicative of the relative importance of the species to an individual vessel's normal fishing activity. This was the criteria used to control entry into the Isle of Man queen scallop fishery.

**Question 12 - What is the preferred reference point for 'number of days at sea' of targeted fishing activity during the 3-year reference?**

- a) Any recorded days at sea during the 3 years would qualify.
- b) Between 10 and 20 days at sea during the 3 years would qualify.
- c) Between 20 and 30 days at sea during the 3 years would qualify.
- d) Between 30 and 50 days at sea during the 3 years would qualify.
- e) More than 50 days at sea during the 3 years would qualify.
- f) NONE - prefer use of Option 1 or 2.

## **10. PART 2 - Additional Management Options for Consideration in the Medium to Long Term**

The options outlined below were not agreed by the working group for immediate introduction to the queen scallop fishery in divisions VIa and VIIa. However, to inform future fishery management considerations, Fisheries Administrations wish to gather views from stakeholders on the potential use of alternative control methods.

### **10.1 Proposal 4 - Effort Restrictions**

A sustainable fishery is one in which the amount of surplus 'fish' available to catch is matched by the amount of fishing activity, or effort. Where fishing effort is too high, stocks decline accordingly, reducing future fishing opportunity. When this occurs consistently there may be frequent 'boom and bust' fisheries, which is undesirable for the stability of fishing industry income and seafood markets.

There are indications that effort in the queen scallop fishery is too high, and in future this should be capped (see Proposal 3 for the start of this process), and ultimately reduced equitably across the remaining fleet.

There are currently no effort restrictions applicable to the UK queen scallop fleet, except to vessels over 15 m through the western waters effort regime, although these are also considered to be ineffective in relation to the queen scallop fishery. The working group recognised that any effort management regime should apply equitably to all classes of fishing vessel, from under 10 m to over 15 m vessels.

It should also be noted that there is an important interaction between entry restrictions and effort restrictions. For example; with a finite amount of fish to catch, more fishing vessels mean less available for each individual, or a highly competitive fishery, which may have undesirable consequences. Therefore, low entry requirements may result in stricter effort controls, and vice versa. It is important to note that any new effort restrictions would be introduced in addition to entry restrictions

There are a several options for restricting effort in future and we are seeking views on these. Further relevant information on this proposal can be found in the 2015 Isle of Man queen scallop consultation<sup>14</sup>.

**Question 13 - Do you agree that effort controls should be introduced in the queen scallop fishery?**

- a) YES
- b) NO

**Question 14 - If yes, which of the following is preferred for development as a future effort management option in the queen scallop fishery?**

- a) Days at Sea scheme.
- b) Temporal fishing restriction, e.g. no weekend fishing, no night fishing.

## 10.2 Proposal 5 - Introduction of Quotas for the Queen Scallop Fishery

A fishing quota limits the amount that may be taken from the fishery, and may be applied to the whole fishery on an annual, or other time period, basis. It may apply to the whole fishery or be divided between the eligible fishermen, as individual quotas.

Quota systems have proven successful in increasing and conserving some stocks, and individual quotas in particular can develop more economic stability and encourage better management and stewardship, since well managed fisheries often result in an increasing quota over time, benefitting individual fisherman.<sup>15,16</sup>

Determination of an appropriate quota requires stock assessment, however such an assessment has not been conducted over the whole fishery area, and although moves towards this have begun, it will take several years to develop any such assessment. However, in principle, progress towards a quota system can be started, based on current harvest rates, and adjusted over time as more comprehensive information becomes available.

**Question 15 - Do you support the principle of developing a long-term quota system for the queen scallop fishery?**

- a) YES
- b) NO

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<sup>14</sup> <https://www.gov.im/ConsultationDetail.gov?id=481>

<sup>15</sup> Mincher R (2008) New Zealand's Challenger Scallop Enhancement Company: from reseeded to self governance. In: Townsend R, Shotton R, Uchida H (eds) Case Studies in fisheries self governance. FAO, Fisheries Technical Paper No. 504, Rome, p 307-321.

<sup>16</sup> Williams, J.R., Hartill, B., Bian, R., Williams, C.L., 2014. Review of the southern scallop fishery (SCA 7). New Zealand Fisheries Assessment Report 2014/07, 71.

### 10.3 Proposal 6 - Introduction of Closed Areas for the Queen Scallop Fishery

Closed areas are used in the marine environment for many purposes, ranging from conservation of species and habitats to successfully supporting fisheries production, including scallop fisheries.<sup>17</sup>

In relation to boosting scallop populations they may:

- Protect high densities of adults for increasing reproduction and recruitment,
- Protect high densities of a juvenile year-class until they have reached MLS,
- Protect habitats where juveniles can settle for subsequent fishing once they have grown.

Closed areas may be temporary or permanent, depending on their purpose.

**Question 16 - Do you support the principle of developing spatial management options (closed areas) for the queen scallop fishery?**

- a) YES
- b) NO

### 10.4 Proposal 7 - Introduction of Gear Specific Management in the Queen Scallop Fishery.

As previously indicated there are two methods for catching queen scallops; dredge and otter trawl.

Trawl fishing is based on the principle that queen scallops swim in response to approaching gear. This behaviour is observed at temperatures above 12°C<sup>18</sup>, which means that the trawl fishery is effectively limited to the 6 month period between approximately June and November. By contrast, dredge fishing can capture scallops all year round.

In the Isle of Man territorial sea otter trawl is the predominant fishing method with approximately 85% of landings. There is some trawling in UK waters

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<sup>17</sup>

Beukers-Stewart B.D., Beukers-Stewart J.S. (2009). Principles for the management of inshore scallop fisheries around the United Kingdom. Report to Natural England, Countryside Council for Wales and Scottish Natural Heritage. University of York. 57pp.

Beukers-Stewart B.D., Vause B.J., Mosley M.W.J., Rossetti H.L., Brand A.R. (2005). Benefits of closed area protection for a population of scallops. *Mar. Ecol. Progr. Ser.* 298:189-204

Beukers-Stewart B.D., Vause B.J., Mosley M.W.J., Rossetti H.L., Brand A.R. (2006). Closed areas and stock enhancement of scallops: what's the catch? *J Shellfish Res.* 25:267-268

Howarth, L. M., Wood, H. L., Turner, A. P. and Beukers-Stewart, B. D. (2011). Complex habitat boosts for recruitment in a fully protected marine reserve. *Marine Biology*, 58:1767-1780.

<sup>18</sup> Jenkins, S.R., Lart, W., Vause, B.J., and Brand, A.R. 2003. Seasonal swimming behaviour in the queen scallop (*Aequipecten opercularis*) and its effect on dredge fisheries. *Journal of Experimental Marine Biology and Ecology* 289:163-179.

around the north coast of Northern Ireland, and occasionally off the Scottish west coast, but the bulk of the landings are taken by dredge fishing.

Specific regulations are in place for both fishing types around the Isle of Man, but the introduction of management controls for UK waters could consider the separation of the two sectors at the initial stage and develop equivalent, but gear-specific, arrangements where appropriate.

**Question 17 - Do you support the principle of developing equivalent, gear-specific management options for the queen scallop fishery?**

- a) YES**
- b) NO**





## Annex A: Respondent Information Form

### Consultation on New Controls in the Queen Scallop Fishery in ICES Divisions VIa and VIIa

**Please Note** this form **must** be returned with your response.

Are you responding as an individual or an organisation?

- Individual  
 Organisation

Full name or organisation's name

Phone number

Address

Postcode

Email

The Scottish Government would like your permission to publish your consultation response. Please indicate your publishing preference:

- Publish response with name  
 Publish response only (anonymous)  
 Do not publish response

We will share your response internally with other Scottish Government policy teams who may be addressing the issues you discuss. They may wish to contact you again in the future, but we require your permission to do so. Are you content for Scottish Government to contact you again in relation to this consultation exercise?

- Yes  
 No

**Question 1 - Do you support increasing the MCRS of queen scallops in ICES divisions VIa and VIIa?**

Yes  No

**Please expand on your answer**

**Question 2 - If YES, what size should the MCRS be increased to?**

50 mm  55 mm  60 mm

**Please expand on your answer**

**Question 3 - What impacts would increasing the MCRS of queen scallops have on your business? What would the likely costs be?**

**Question 4 - Do you support an annual spawning closure for queen scallops in ICES divisions VIa and VIIa?**

Yes  No

**Please expand on your answer**

**Question 5 - If YES, which of the following closure options is preferred? Note: all of the following have a valid scientific basis, but differ primarily in their extended biological (positive effect) and economic effects (negative effect) (option b), or complexity of implementation (option c).**

- a) One annual closure between 1<sup>st</sup> April and 31st May (i.e. same as statutory Isle of Man Closure).
- b) One annual closure between 1<sup>st</sup> April and 30<sup>th</sup> June.
- c) One annual flexible closure between March and June, with specific timing determined by the fisheries management agencies, in consultation with industry representatives, and with reference to biological and commercial considerations.

**Please expand on your answer**

**Question 6 - Should fishery closures be implemented on a voluntary or a compulsory basis (statute or licence condition)?**

Voluntary  Compulsory

**Please expand on your answer**

**Question 7 - Do you support the introduction of entry restrictions to the UK queen scallop fishery?**

Yes  No

**Please expand on your answer**

**Question 8 - Do you support the introduction of additional data collection as a condition of receiving a queen scallop entitlement?**

Yes  No

**Please expand on your answer**

**Question 9 - What is the preferred 3-year reference period for determining eligibility for the fishery in future? (see Figure 4)**

- a) 2013-2015 - would tend to maintain current vessel numbers
- b) 2012-2014 - would tend to maintain current vessel numbers
- c) 2011-2013 - would tend to maintain current vessel numbers
- d) 2010-2012 - would tend to reduce current vessel numbers

**Please expand on your answer**

**Question 10 - What is the preferred reference point for 'reported landings quantity' during the 3-year reference period?**

- a) Up to one tonne landed during the 3 years would qualify.
- b) Minimum of one tonne landed during the 3 years would qualify.
- c) Minimum of 5 tonnes landed during the 3 years would qualify.
- d) Minimum of 10 tonnes landed during the 3 years would qualify.
- e) NONE - prefer use of Option 2 (landing frequency) or 3 (number of days of targeted fishing activity).

**Please expand on your answer**

**Question 11 - What is the preferred reference point for 'landing frequency' during the 3-year reference period?**

- a) Any recorded landing during the 3 years would qualify.
- b) Between 10 and 20 landings over the 3-year period would qualify.
- c) Between 20 and 30 landings over the 3-year period would qualify.
- d) Between 30 and 50 landings over the 3-year period would qualify.
- e) More than 50 landings over the 3-year period required to qualify.
- f) NONE - prefer use of Option 1 (landings quantity) or 3 (number of days of targeted fishing activity).

**Please expand on your answer**

**Question 12 - What is the preferred reference point for 'number of days at sea' of targeted fishing activity during the 3-year reference?**

- a) Any recorded days at sea during the 3 years would qualify.
- b) Between 10 and 20 days at sea during the 3 years would qualify.
- c) Between 20 and 30 days at sea during the 3 years would qualify.
- d) Between 30 and 50 days at sea during the 3 years would qualify.
- e) More than 50 days at sea during the 3 years would qualify.
- f) NONE - prefer use of Option 1 (landings quantity) or 2 (landing frequency)

**Please expand on your answer**

**Question 13 - Do you agree that effort controls should be introduced in the queen scallop fishery?**

Yes  No

**Please expand on your answer**

**Question 14 - If yes, which of the following is preferred for development as a future effort management option in the queen scallop fishery?**

- a) Days at sea scheme
- b) Temporal fishing activity restriction, e.g. weekend/overnight restrictions

**Please expand on your answer**

**Question 15 - Do you support the principle of developing a long-term quota system for the queen scallop fishery?**

Yes  No

**Please expand on your answer**

**Question 16 - Do you support the principle of developing spatial management options (closed areas) for the queen scallop fishery?**

Yes  No

**Please expand on your answer**

**Question 17 - Do you support the principle of developing equivalent, gear-specific management options for the queen scallop fishery?**

Yes  No

**Please expand on your answer**

## Annex B: Participants in Queen Scallop Working Group

FAs	Science	POs	Processors	Vessels	Others
<ul style="list-style-type: none"> <li>Marine Scotland</li> <li>DEFRA</li> <li>DARD</li> <li>DEFA</li> <li>Welsh Government</li> <li>MMO</li> </ul>	<ul style="list-style-type: none"> <li>Marine Scotland Science</li> <li>Bangor University</li> </ul>	<ul style="list-style-type: none"> <li>Manx PO</li> <li>SWFPA</li> <li>SWFPO</li> <li>ANIFPO</li> <li>NIFPO</li> <li>Scallop Association</li> </ul>	<ul style="list-style-type: none"> <li>Macduff Shellfish</li> <li>Isle of Man Seafoods</li> <li>West Coast Sea Products</li> <li>A&amp;M Seafoods</li> </ul>	<ul style="list-style-type: none"> <li>TN Trawlers</li> <li>FV. Harmoni</li> <li>FV. Jann Denise</li> </ul>	<ul style="list-style-type: none"> <li>Responsible Irish Fish</li> </ul>

## Annex C: Overview Isle of Man Trawl Fishery Summary 2016

- A TAC of 1012 tonnes was set for the 2016 Isle of Man trawl fishery. The fishery opened on 4<sup>th</sup> July 2016.
- To date 31 of the 40 licenced vessels that nominated to take part in the 2016 trawl fishery have prosecuted it.
- A weekly catch limit per vessel of 4200 kg (120 x 35 kg bags) was set for Weeks 1 - 10 and subsequently reduced to 2800 kg (80 x 35 kg bags) for Weeks 11 onwards.
- The average LPUE (kg per hour per m of net width) dropped from an island-wide average of 33.16 kg in 2015 to 14.02 kg in 2016.
- Average LPUE (standardised for net size and fishing time) for an example fishing ground is displayed for 2015 and 2016 below. The chart shows the decrease in LPUE that is apparent both within and between fishing seasons.
- The dredge fishery is due to open on 3 October, with a TAC of 228 tonnes. Nine vessels nominated to prosecute this fishery in 2016.

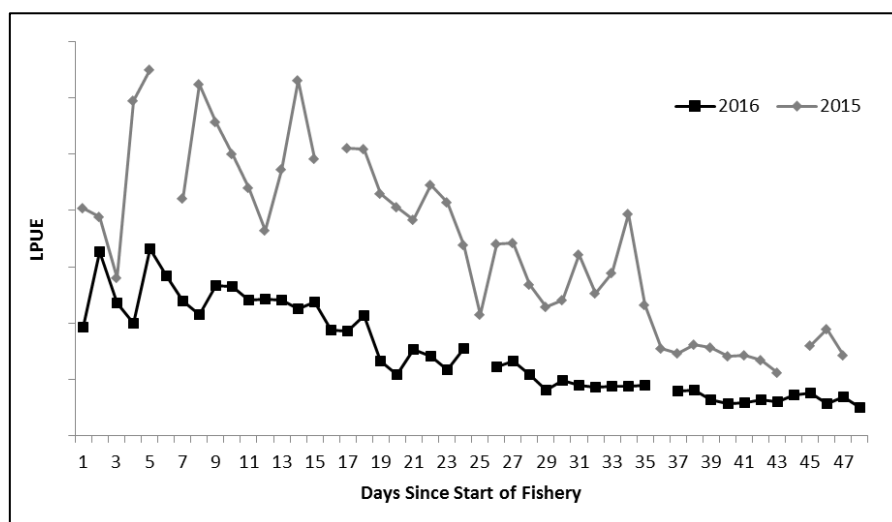


Figure 8 LPUE (standardised for net size and fishing time) for the Isle of Man queen scallop trawl fishery displayed for an example fishing ground within the Isle of Man's territorial sea showing the decrease in LPUE that is apparent both within and between fishing seasons.





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