

Consultation on landing controls for the Scottish crab and lobster fisheries

Contents

	Page
Executive Summary	3
Background on Consultation Process	4
Consultation Document	5
Respondent Information Form	17
Annex A: Partial Business and Regulatory Impact Assessment	22

Executive Summary

Scotland's fishing industry is an important part of rural life, making a valuable contribution to the economy, and is woven into the country's culture and heritage. Fisheries are at the heart of the Scottish Government's aims to create more, better paid jobs in a strong sustainable economy, and to build a fairer Scotland through tackling inequalities and empowering people and communities.

Scotland's brown crab, velvet crab and lobster fisheries are of great importance to many of our coastal communities with landings worth £32 million being recorded in 2014.

However, around much of the Scottish coast, these stocks are estimated to be fished at levels close to or above the F_{MSY} proxy (F_{MSY} is the fishing mortality consistent with the largest average yield that can continuously be taken from a stock under existing environmental conditions).

The Scottish fishing industry has expressed growing concern at the health of these fisheries and called for their management to be improved. Through their local management bodies, the island communities of Orkney, the Outer Hebrides and Shetland have already brought forward proposals which have resulted in the introduction of individual management arrangements for their crab and lobster fisheries.

Marine Scotland is seeking views on landing controls that it proposes to introduce throughout the rest of the Scottish coast. These proposals are as follows:

- increasing the minimum landing size for brown crab to 150 mm carapace width
- increasing the minimum landing size for velvet crab to 70 mm carapace width
- prohibiting the landing of berried (egg bearing) velvet crab
- increasing the minimum landing size for lobster to 90 mm carapace length
- decreasing the maximum landing size for female lobster to 145 mm carapace length
- introducing a maximum landing size for male lobster of 145 mm carapace length
- prohibiting the landing of 'crippled' lobsters (those missing one or both claws)
- introducing prohibitions on sale and carriage to match any landing prohibitions that are implemented on a uniform basis across the entire Scottish coast

These proposals contribute towards one of the key aims of Marine Scotland's Inshore Fisheries Strategy, by ensuring that Scotland's inshore fisheries are sustainably and effectively managed.

Background on the Consultation Process

The purpose of this consultation document is to seek the views of those with an interest in the crab and lobster fisheries in Scotland, in order to inform policy decisions. The consultation will last for 12 weeks, commencing on **Friday 26 February 2016** with a deadline of **Friday 20 May 2016** for responses.

If you wish to respond to this consultation, you are requested to complete the attached Respondent Information Form. This will ensure that we handle your response appropriately.

Please submit your consultation response to:

inshore@gov.scot

or

Crab & Lobster Landing Controls Consultation

Marine Scotland
Area 1B South
Victoria Quay
Edinburgh
EH6 6QQ

The views and suggestions received in consultation responses will be analysed and fed into the decision making process. Final decisions on the issues under consideration will also take account of a range of other factors, including any other available information and research evidence.

The Scottish Government may make the responses to this consultation paper available to the public and to the Scottish Parliament. We will acknowledge responses and may publish an analysis of the responses after the consultation.

If you have any queries regarding this consultation, please contact Marine Scotland via the above addresses or by phone on **0131 244 6214**.

Consultation Document

Background

The crab and lobster fisheries are very important to many of Scotland's fishing communities, and the importance of this sector has increased in the preceding decades as opportunities in other sectors of the industry have declined. In 2014, landings of brown crab, velvet crab and lobster were worth £32 million, helping to sustain hundreds of fishing vessels around the Scottish coast.

These three fisheries tend to be categorised together and share the following key features:

- They are fished using static gear (creels)
- Commercial fishing is restricted to those vessels which have a shellfish entitlement
- They are not covered by EU Total Allowable Catch (TAC) provisions
- Landings are primarily managed through minimum landing size restrictions

Growing customer awareness regarding the provenance of seafood is leading to an increasing retail demand for shellfish that comes from sustainably exploited stocks, and there is growing concern from within the fishing industry regarding the current level of exploitation of Scotland's crab and lobster fisheries. Fishing representatives, through IFMAC¹, Inshore Fisheries Groups (IFGs), and via individual fishing associations, have expressed a strong desire to Marine Scotland for new management measures to be introduced.

Marine Scotland's Inshore Fisheries Strategy² sets out its vision for the management of the Scottish Inshore sector. It outlines the importance of fishing to Scotland's coastal communities, economy, culture and heritage. A key aim of the strategy is to ensure that Scotland's inshore fisheries are sustainably and effectively managed, in line with national objectives and international obligations such as the Marine Strategy Framework Directive.

The local fisheries management bodies for several of Scotland's island communities (Orkney, the Outer Hebrides and Shetland) have already moved to implement new landing controls to better manage their shellfish stocks. The management measures proposed in this document are in line with those introduced in the islands.

¹ Inshore Fisheries Management and Conservation group

² [Inshore Fisheries Strategy 2015](#)

Overview of stock assessments

Length Cohort Analysis (LCA) is the method used for assessing Scotland's crab and lobster stocks. It uses landings length frequency data collected as part of Marine Scotland Science's market sampling programme.

The changes that LCA predicts are long term (equilibrium). The method does not provide any indication of short-term stock dynamics or recruitment over-fishing. Assessments are conducted on a regional basis and males and females are assessed separately. LCA results are presented in terms of yield-per-recruit and biomass-per-recruit, providing estimates of fishing mortality (F) and a framework for evaluation of management measures.

Assuming a direct relationship between fishing mortality and effort, lower levels of fishing effort will generally result in an increase in stock size and a reduction in landings. A higher level of fishing effort will reduce total stock biomass but landings may also fall, as animals are caught before they have had time to grow to a size that would contribute much weight to the yield (growth overfishing).

In between these lies F_{MAX} , the fishing mortality rate that maximizes yield per recruit. As it is not possible to directly estimate the maximum sustainable yield (F_{MSY}) for these stocks, F_{MAX} is used as a proxy for F_{MSY} .

The most recent stock assessments carried out for brown crab, velvet crab and lobster have shown that, in the majority of areas assessed, either one or both sexes for these stocks is currently being fished above the F_{MSY} proxy.

The current management advice from Marine Scotland Science is that a higher yield and biomass could potentially be obtained in the long term by reducing the level of fishing mortality (effort) on stocks that are fished above the F_{MSY} proxy.

Benefits of landing size provisions

The aim of minimum landing size (MLS) provisions, which vary from species to species, is to prevent the landing of juvenile individuals. This allows them the opportunity to grow and reproduce before harvesting. A higher MLS increases the chances of individuals being able to reproduce before being harvested, potentially increasing a fishery's yield and spawning stock biomass.

There are currently a variety of MLS' in place for brown crab, velvet crab and lobster throughout Scotland, as outlined below.

Species	MLS (mm)	Area	Year introduced
Brown Crab (CW)	130	East coast south of 56° (exc. Firth of Forth)	2000
	140	All areas (exc. east coast south of 56° & Outer Hebrides)	2000
	150	Outer Hebrides	2015
Velvet Crab (CW)	65	All areas (exc. below)	1989
	70	Shetland	2001
	70	Outer Hebrides	2015
	70	Orkney	2016
Lobster (CL)	87	All areas (exc. below)	1999
	90	Shetland	2001
	88*	Outer Hebrides	2015
	88 [†]	Orkney	2016

CW – Carapace width
CL – Carapace length

*Moving to 90 mm from May 2016
[†]Moving to 90 mm from Mar 2017

Scope of this consultation

Marine Scotland is consulting on a range of landing restrictions for the brown crab, velvet crab and lobsters fisheries, in response to the calls from the fishing industry via IFMAC, IFGs and fishing associations. As individual management measures for crab and lobster have already been implemented in the island communities of Orkney, the Outer Hebrides and Shetland, the proposals in this consultation are primarily focused on the rest of Scotland's waters.

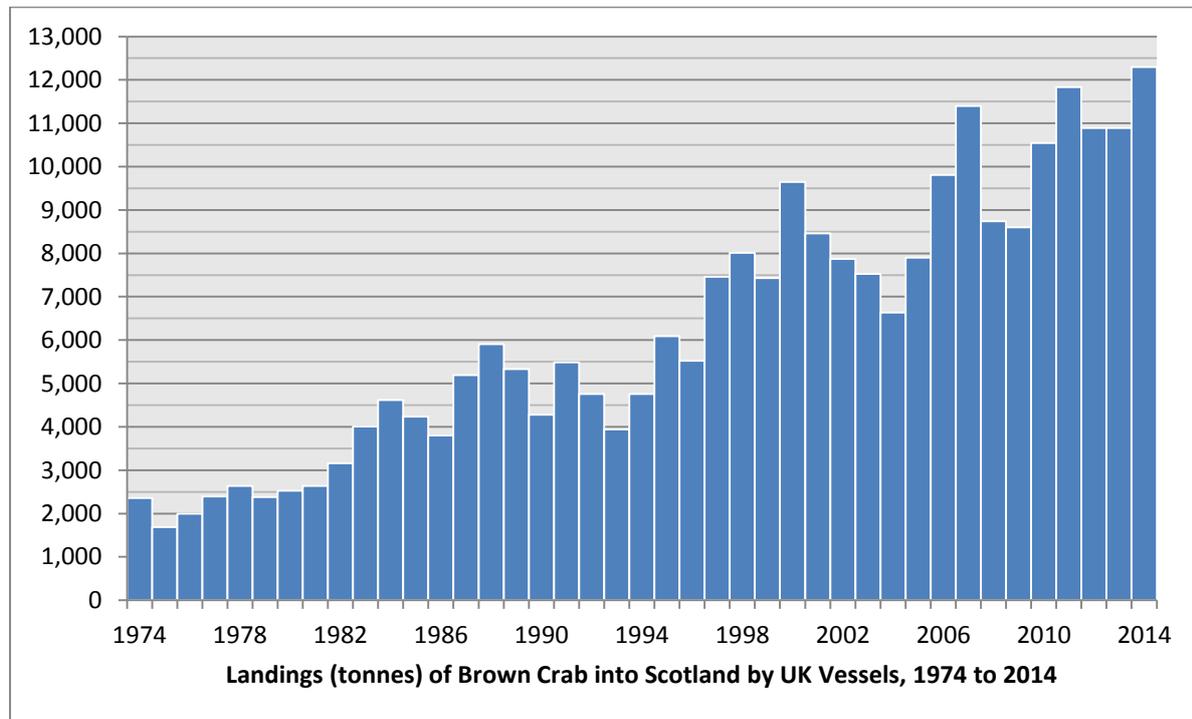
Calls for new landing controls have been made from right around the Scottish coast. However, Marine Scotland is aware that some fishermen may feel that the proposed measures may not be appropriate for their respective areas. We have therefore provided opportunities in this consultation for respondents to suggest areas where any new arrangements should not be introduced.

The following pages provide a general background on each species' commercial fishery, the nature and status of their stocks, and the respective management measures being proposed.

Brown crab fishery

Commercial development

Brown crab (*Cancer pagurus*), also known as edible crab, has long been fished off the Scottish coast. The commercial fishery has grown significantly over the past 40 years, with landings increasing progressively from ~2,000 tonnes per year in the mid-1970s to ~10-12,000 tonnes in recent years.



3

The value of the fishery has grown in line with the volume caught and landings in 2014 were worth £16.2 million, making brown crab the third most important commercial shellfish stock in Scotland after *Nephrops* and scallops.

Nature of the stock

The population structure of the species is poorly understood but it is found all around the Scottish coast in both inshore and offshore areas. The main fishing grounds were traditionally in the Hebrides, Orkney, East Coast and South Minch. However, the development of the fishery in the offshore grounds of Papa and Sule has contributed to the large increase in landings during the past couple of decades.

Brown crab grow by casting (moulting) their shell and then hardening a new larger shell. The growth rate of brown crab varies around the coast but female brown crab in Scottish waters typically mature between 130-150 mm.

³ The methodology used to calculate value of landings was changed by the introduction of the Register of Buyers and Sellers (RBS) in September 2005.

State of the stock

The most recent assessments carried out by Marine Scotland Science, summarised on the adjacent diagram, show that the brown crab stocks in the catching areas of the Hebrides, Sule, South Minch and Orkney – as well as the east coast – are currently fished at or above the F_{MSY} proxy.

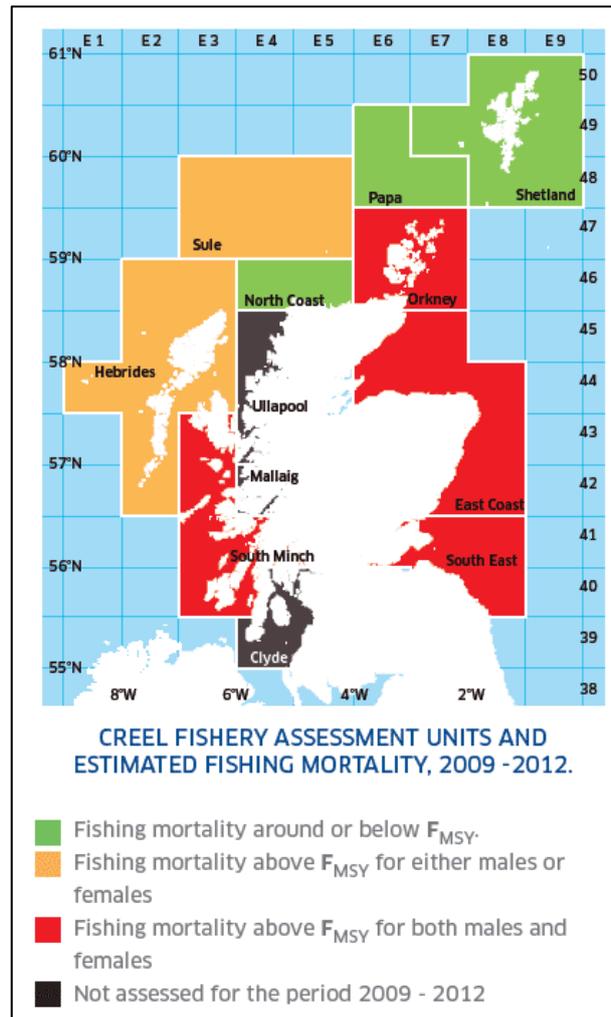
Management proposals

Two minimum landing sizes for brown crab have been in effect around the majority of the Scottish coast since 2000:

- 130 mm carapace width for the east coast south of 56°, excluding the Firth of Forth
- 140 mm carapace width for all other areas. except for the east coast South of 56° and the Outer Hebrides

In the Outer Hebrides the MLS was increased from 140 mm to 150 mm in 2015, following proposals put forward by the area's Inshore Fisheries Group.

It is now proposed to increase the MLS for brown crab to 150 mm for the rest of the Scottish coast.



Q1. Do you support increasing the minimum landing size for brown crab to 150 mm carapace width?

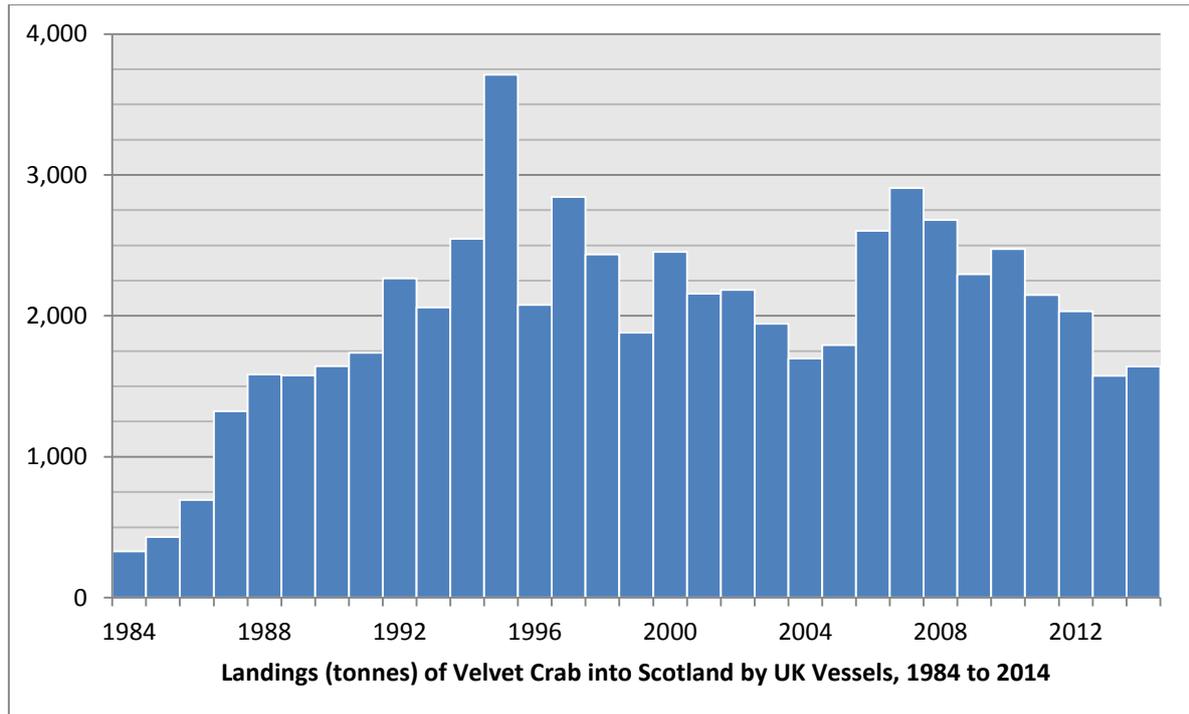
- a) Yes
- b) No

Q2. Are there any areas of the coast that you think should be excluded from an MLS increase for brown crab, and if so why?

Velvet crab fishery

Commercial development

Velvet crab (*Necora puber*) was once considered a 'pest species' in Scotland, with a commercial fishery only developing following the collapse of the Spanish stock in the 1980s. The Scottish fishery expanded significantly as a result, with landings increasing five-fold from 300 tonnes in 1984 to 1,600 tonnes in 2014. Scotland's velvet crab fishery is now the largest in Europe, with the 2014 catch valued at over £4 million.



Nature of the stock

Velvet crab can be found in waters all around the British Isles. Traditionally the majority of landings have come from the west coast of Scotland, Shetland and Orkney; however landings from the east coast have increased significantly during the past 15 years.

Female velvet crabs are known to grow more slowly and to a smaller maximum size than males, which is likely due to reduced growth during the females' egg bearing phase.

⁴ The methodology used to calculate value of landings was changed by the introduction of the Register of Buyers and Sellers (RBS) in September 2005.

State of the stock

The most recent assessment carried out by Marine Scotland Science, summarised in the adjacent diagram, shows that the velvet crab stocks in the catching areas in the west coast, east coast and Orkney are currently fished at or above the F_{MSY} proxy.

Management proposals

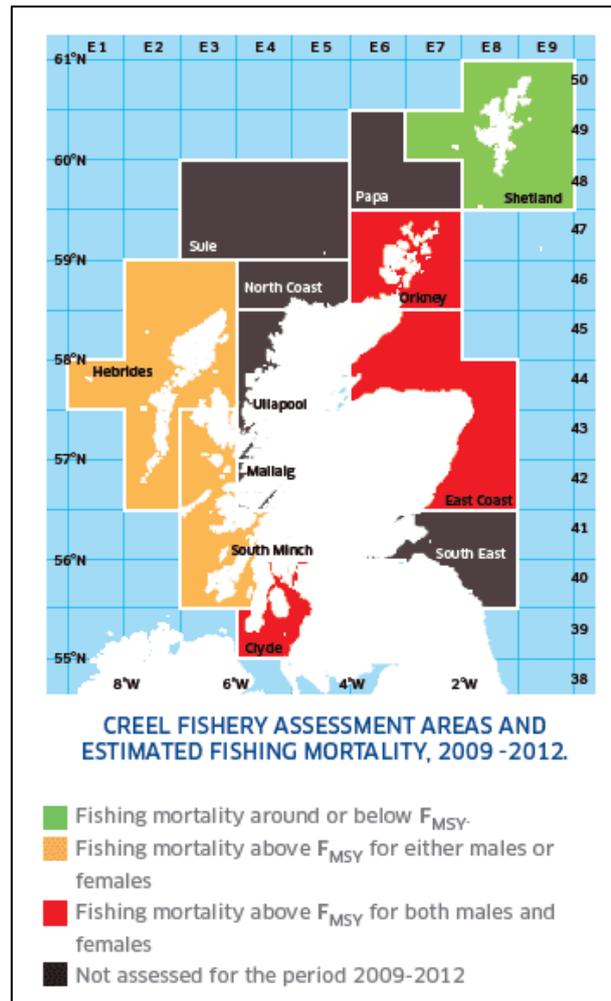
Minimum landing size increase

A minimum landing size for velvet crab of 65 mm carapace width has been in effect around the majority of the Scottish coast since 1989.

In Shetland, the MLS was increased to 70 mm by the Shetland Shellfish Management Organisation in 2001.

Following separate consultations, increases to 70 mm were introduced in the Outer Hebrides and Orkney from 2015 and 2016 respectively.

It is now proposed to increase the MLS for velvet crab to 70 mm for the rest of the Scottish coast.



Q3. Do you support increasing the minimum landing size for velvet crab to 70 mm carapace width?

- a) Yes
- b) No

Q4. Are there any areas of the coast that you think should be excluded from an MLS increase for velvet crab, and if so why?

Berried velvet crab

In Orkney, a ban on the landing of berried (i.e. egg bearing) velvet crab is being introduced from 2016, in order to provide additional protection to reproductive females and potentially improve recruitment to the fishery by increasing egg production⁵.

It is now proposed to introduce a prohibition on the landing of berried velvet crab for the rest of the Scottish coast.

Q5. Do you support prohibiting the landing of berried velvet crab?

- a) Yes
- b) No

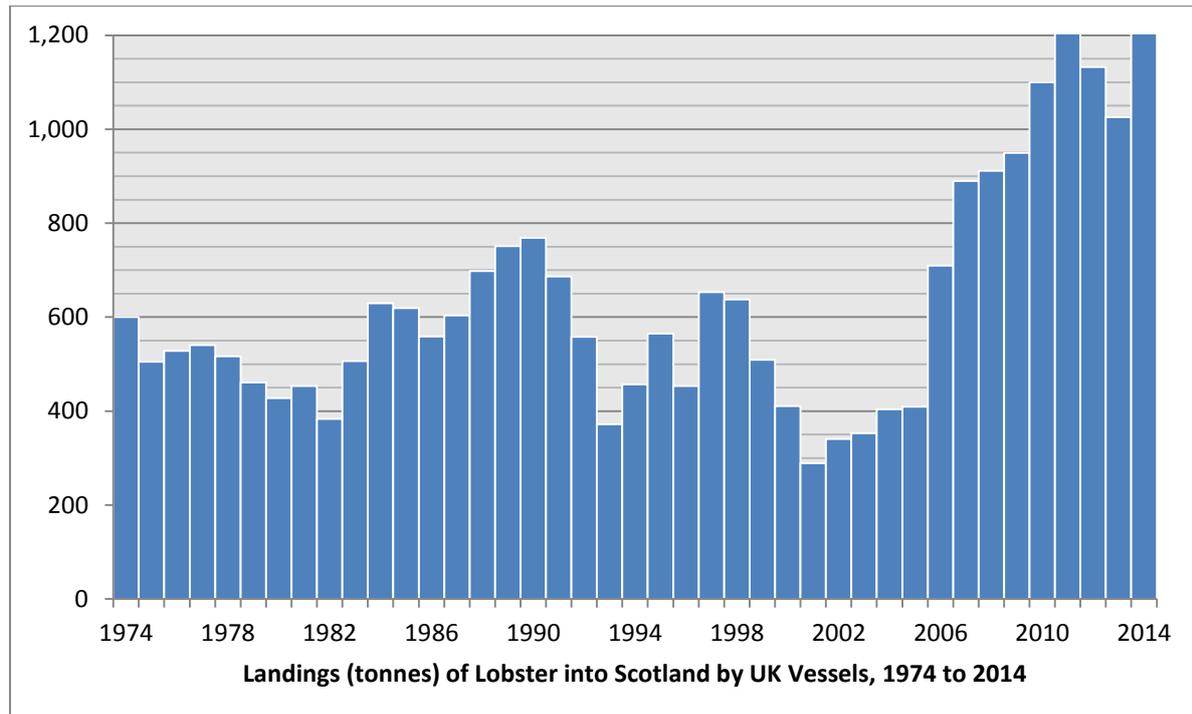
Q6. Are there any areas of the coast that you think should be excluded from a prohibition on landing berried velvet crabs, and if so why?

⁵ [Review of Evidence for Best Practice in Crustacean Fisheries Management in Wales](#)

Lobster fishery

Commercial development

European lobster (*Homarus gammarus*) has long been a key stock for communities around the Scottish coast and has been targeted for many centuries. As with the brown crab and velvet crab fisheries, the level of commercial exploitation has increased considerably over recent decades, with over 1,200 tonnes of lobster valued at £12 million landed into Scotland in 2014.



6

Nature of the stock

Lobster is found all around the Scottish coast, usually on hard ground in water shallower than 30 metres.

Substrate and suitable shelter are thought to affect the size and population density, with larger lobsters being found on more exposed grounds. Lobsters are not known to undertake extensive migrations and genetic variation of lobsters is thought to be low throughout the Scottish coast.

The growth rate of lobsters does vary around the Scottish coast and, as with other crustaceans, lobsters moult their shells in order to grow. The size at maturity is also variable; females in the south east, for example, mature at a smaller size than those found around the Outer Hebrides.

⁶ The methodology used to calculate value of landings was changed by the introduction of the Register of Buyers and Sellers (RBS) in September 2005.

State of the stock

The most recent assessments carried out by Marine Scotland Science, summarised in the adjacent diagram, show that lobster is currently being fished at or above the F_{MSY} proxy in all of the areas assessed. The scientific advice is that a higher yield and biomass could potentially be obtained from the stock in the long term if measures to reduce the level of fishing mortality (effort) were introduced.

Management proposals

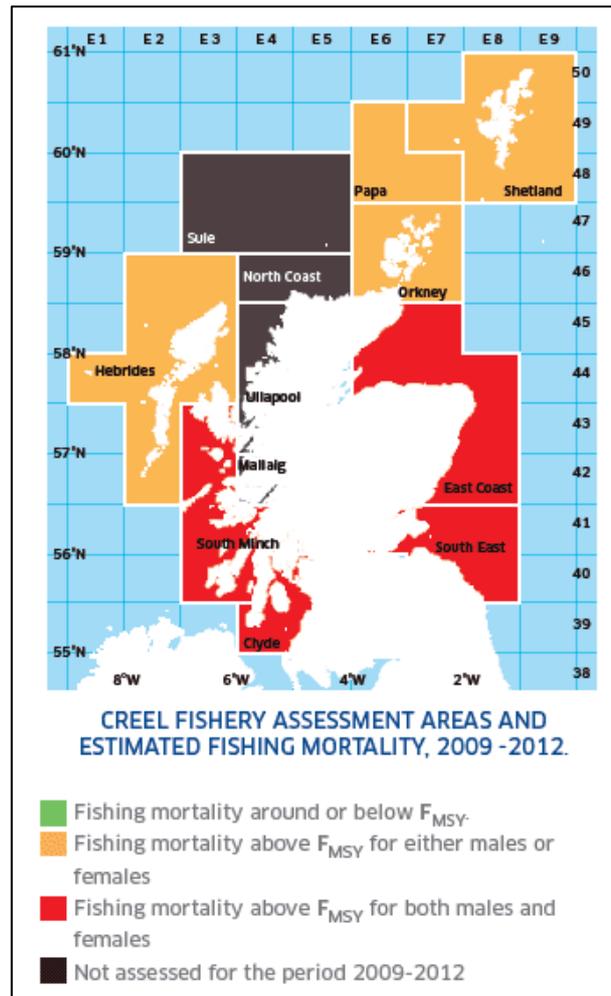
Minimum Landing Size

A minimum landing size for lobster of 87 mm carapace length has been in effect around the majority of the Scottish coast since 1999.

In Shetland, the MLS was increased to 90 mm by the Shetland Shellfish Management Organisation in 2001.

Following separate consultations, increases to 90 mm were introduced in the Outer Hebrides and Orkney on a staggered basis from 2015 and 2016 respectively.

It is now proposed to increase the MLS for lobster to 90 mm for the rest of the Scottish coast.



Q7. Do you support increasing the minimum landing size for lobster to 90 mm carapace length?

- a) Yes
- b) No

Q8. Are there any areas of the coast that you think should be excluded from an increase in MLS for lobster, and if so why?

As stated above, the MLS increases for Orkney and the Outer Hebrides are being implemented on a staggered basis. This has involved an immediate increase to 88 mm upon introduction, followed by a further increase to 90 mm one year thereafter.

It is proposed that an MLS increase for the rest of the Scottish coast be implemented on a similar basis. However, alternative options are welcomed.

Q9. If you support an MLS increase, how would you prefer to see it introduced?

- a) Immediate increase to 88 mm then to 90 mm one year thereafter
- b) Other (please specify)

Maximum Landing Size

Due to evidence that larger female shellfish produce better quality eggs and in greater numbers, potentially resulting in greater recruitment to the fishery, a maximum landing size ($M_{ax}LS$) of 155 mm carapace length for female lobster has been in effect around the majority of the Scottish coast since 2004.

In the Outer Hebrides, the $M_{ax}LS$ was reduced to 145 mm in 2015 in order to further protect its spawning stock.

It is now proposed to reduce the $M_{ax}LS$ for female lobster to 145 mm carapace length for the rest of the Scottish coast.

Q10. Do you support decreasing the maximum landing size for female lobster to 145 mm carapace length?

- a) Yes
- b) No

Q11. Are there any areas of the coast that you think should be excluded from a maximum landing size reduction for female lobster, and if so why?

Due to evidence that female lobsters select the most dominant large males as mates⁷, it is proposed to extend the $M_{ax}LS$ to include male lobster as well. This has the potential to promote reproduction in the fishery by protecting its most reproductive individuals.

Q12. Do you support introducing a maximum landing size for male lobster of 145 mm carapace length??

- a) Yes
- b) No

Q13. Are there any areas of the coast that you think should be excluded from a maximum landing size for male lobster, and if so why?

⁷ [Review of Evidence for Best Practice in Crustacean Fisheries Management in Wales](#)

'Crippled' lobsters

Finally there is the issue of 'crippled' lobsters, which refers to animals that have lost one or both of their claws. These lobsters can be landed and sold but do not achieve the same price as those with both claws intact. However, if returned to the sea they are capable of re-growing their missing limb/s. There is anecdotal evidence that these animals are already returned to the sea by many fishermen.

In the Outer Hebrides, a ban on the landing of crippled lobsters was introduced in 2015. It is proposed to extend this prohibition to the rest of the Scottish coast.

Q14. Do you support prohibiting the landing of 'crippled' lobsters?

- a) Yes
- b) No

Q15. Are there any areas of the coast that you think should be excluded from a prohibition on the landing of 'crippled' lobsters, and if so why?

Sale and carriage restrictions

The outcome of this consultation may result in one or more of the proposed landing controls for brown crab, velvet crab and lobster being in effect on a uniform basis across the entire Scottish coast.

It is proposed that, in those circumstances, matching restrictions on sale and carriage are also introduced in order to aid the enforcement of any uniformly-implemented controls.

Q16. Do you support the introduction of prohibitions on sale and carriage to match any landing prohibitions that are implemented on a uniform basis across the entire Scottish coast?

- a) Yes
- b) No

Respondent Information Form



Please Note

This form **must** be returned with your response to ensure that we handle your response appropriately.

1. Name / Organisation

Title (Please tick as appropriate)

Mr **Ms** **Mrs** **Miss** **Dr**

Forename

Surname

Organisation (if applicable)

2. Contact Details

Address

Postcode

Phone

Email

3. Permissions

I am responding as an...

Individual

/

Organisation

Please tick as appropriate

- (a) Do you agree to your response being made available to the public (in Scottish Government library and/or on the Scottish Government web site)?

Please tick as appropriate

Yes No

- (b) If you have ticked **Yes** to the previous question, do you also agree to your name and/or address being made available to the public?

Please tick as appropriate

Name Yes No

Address Yes No

- (c) The name and address of your organisation **will** be made available to the public (in the Scottish Government library and/or on the Scottish Government web site).

Are you content for your **response** to be made available?

Please tick as appropriate

Yes No

- (d) 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 the Scottish Government to contact you again in relation to this consultation exercise?

Please tick as appropriate Yes No

4. Consultation Questions

Q1. Do you support increasing the minimum landing size for brown crab to 150 mm carapace width?

- Yes
 No

Comments

Q2. Are there any areas of the coast that you think should be excluded from an MLS increase for brown crab, and if so why?

Comments

Q3. Do you support increasing the minimum landing size for velvet crab to 70 mm carapace width?

- Yes
 No

Comments

Q4. Are there any areas of the coast that you think should be excluded from an MLS increase for velvet crab, and if so why?

Comments

Q5. Do you support prohibiting the landing of berried velvet crab?

- Yes
 No

Comments

Q6. Are there any areas of the coast that you think should be excluded from a prohibition on landing berried velvet crab, and if so why?

Comments

Q7. Do you support increasing the minimum landing size for lobster to 90 mm carapace length?

- Yes
- No

Comments

Q8. Are there any areas of the coast that you think should be excluded from an MLS increase for lobster, and if so why?

Comments

Q9. If you support an MLS increase, how would you prefer to see it introduced?

- Immediate increase to 88 mm then to 90 mm one year thereafter
- Other (please specify)

Comments

Q10. Do you support decreasing the maximum landing size for female lobster to 145 mm carapace length?

- Yes
- No

Comments

Q11. Are there any areas of the coast that you think should be excluded from a maximum landing size reduction for female lobster, and if so why?

Comments

Q12. Do you support introducing a maximum landing size for male lobster of 145 mm carapace length??

- Yes
- No

Comments

Q13. Are there any areas of the coast that you think should be excluded from a maximum landing size for male lobster, and if so why?

Comments

Q14. Do you support prohibiting the landing of 'crippled' lobsters?

- Yes
- No

Comments

Q15. Are there any areas of the coast that you think should be excluded from a prohibition on the landing of 'crippled' lobsters, and if so why?

Comments

Q16. Do you support the introduction of prohibitions on sale and carriage to match any landing prohibitions that are implemented on a uniform basis across the entire Scottish coast?

- Yes
- No

Comments

Partial Business and Regulatory Impact Assessment

Title of Proposal

Consultation on landing controls for the Scottish crab and lobster fisheries

Purpose and intended effect

- **Background**

Shellfish have become more important to Scotland's fishing economy as fishing patterns have changed over the past decades. In 2014, landings of brown crab, velvet crab and lobster were worth £32 million, helping to sustain hundreds of fishing vessels around the Scottish coast.

There has been growing concern from within the fishing industry regarding the current level of exploitation of these fisheries. Fishing representatives – through the Inshore Fisheries Management and Conservation (IFMAC) group, Inshore Fisheries Groups, and individual fishing associations – have expressed a strong desire to Marine Scotland for new management measures for these species to be introduced.

There is also growing customer awareness regarding the provenance of seafood which is leading to increasing retail demand for shellfish that comes from sustainably exploited stocks.

- **Objective**

The purpose of the consultation is to seek views on management measures that will afford additional protection for Scotland's commercial crab and lobster fisheries, above those already in effect.

The local fisheries management bodies for several of Scotland's island communities (Orkney, the Outer Hebrides and Shetland) have already moved to implement new landing controls to better manage their shellfish stocks. The management measures being proposed are in line with those introduced in the islands.

- **Rationale for Government intervention**

The most recent stock assessments carried out by Marine Scotland Science on brown crab, velvet crab and lobster have shown that, in the majority of areas assessed, these fisheries are being exploited above levels that allow for the largest average yield to be continuously be taken from a stock under prevailing environmental conditions.

Marine Scotland's Inshore Fisheries Strategy sets out its vision for the management of the Scottish inshore sector. It outlines the importance of fishing to Scotland's coastal communities, economy, culture and heritage. A key aim of the strategy is to ensure that fisheries are sustainable and well-managed in line with Scottish Government objectives and international obligations such as the Marine Strategy Framework Directive.

Annex A

By introducing landing controls that have the potential to reduce the fishing mortality and increase the long-term average yield from these fisheries, the Scottish Government will be contributing positively to the management and economic returns of these stocks.

This contributes to the Scottish Government's National Performance Framework objective of valuing and enjoying our built and natural environment and protecting it and enhancing it for future generations.

Consultation

- **Within Government**

Discussions have taken place with the following divisions and agencies as part of the development of the consultation's proposals:

- Marine Scotland Compliance
- Marine Scotland Marine Analytical Unit
- Marine Scotland Science
- Scottish Government Legal Directorate

- **Public Consultation**

This Partial BRIA will accompany the consultation, which will be issued on 26 February 2016. The consultation documents will be sent electronically and/or by post to all interested parties registered with the Scottish Government. An electronic copy will also be placed on the Scottish Government website.

- **Business**

These proposals were developed following discussions with the fishing industry. This has included discussions within the Inshore Fisheries Management and Conservation (IFMAC) group. Inshore Fisheries Groups, individual fishing associations and environmental NGOs.

Options

Option 1 - Do Nothing

Maintain the current management arrangements for Scotland's crab and lobster fisheries.

Option 2 - Introduce new management measures

Proposed management measures include:

- increasing the minimum landing size (MLS) for brown crab to 150 mm carapace width
- increasing the MLS for velvet crab to 70 mm carapace width
- prohibiting the landing of berried (egg bearing) velvet crab
- increasing the MLS for lobster to 90 mm carapace length
- decreasing the maximum landing size ($M_{ax}LS$) for female lobster to 145 mm carapace length
- introducing a $M_{ax}LS$ for male lobster of 145 mm carapace length

Annex A

- prohibiting the landing of 'crippled' lobsters (those missing one or both claws)
- introducing prohibitions on sale and carriage to match any landing prohibitions that are implemented on a uniform basis across the Scottish coast

Sectors and groups affected

The following groups are likely to be affected by any changes to the management of Scotland's crab and lobster fisheries:

- Scottish fishermen
- Other UK fishermen operating in Scottish waters
- Fish catching/processing companies
- Marine Scotland Compliance

Costs and Benefits

Option 1 – Do nothing

Benefits

- No additional benefits are expected to arise from this policy. Fishermen can continue to be able to land crab and lobster that complies with current fisheries legislation.

Costs

- Stocks vary around the coast, but many areas have declining spawning stock biomass, high fishing mortality and fluctuating recruitment. A continuation of the current status quo may result in reduced landings as high fishing mortality reduces spawning stock biomass and fishers become more dependent on animals nearer the current minimum landing size and the long-term potential yield from the fishery is not achieved.
- There is increasing consumer interest in the provenance of produce and retailers, such as supermarkets, are making a concerted effort to ensure the fish they sell are from sustainable sources. Maintaining current provisions may result in a loss of access to potential markets.

Option 2 – Introduce new management measures

Benefits

- Increasing the MLS for brown crab, velvet crab and lobster will allow newly-undersized individuals of these species the opportunity to grow and reproduce before being caught, potentially increasing the long term yield and biomass of their respective fisheries.
- Prohibiting the landing of berried velvet crabs will provide additional protection to mature individuals and potentially increase the stock's reproductive potential.

Annex A

- Decreasing the $M_{ax}LS$ for female lobster, along with introducing $M_{ax}LS$ for male lobster, will potentially promote reproduction in the fishery by protecting its most important reproductive individuals.
- Prohibiting the landing of 'crippled' lobsters (i.e. those missing one or both claws) will allow these individuals the opportunity to re-grow their limbs and achieve full market price when harvested, as well as protect stock numbers and potentially increase spawning stock biomass.
- Restricting the sale and carriage of non-compliant crab and lobster will aid in the enforcement of any new landing controls that are implemented uniformly across the entire Scottish coast.

Costs

- Increasing the MLS for brown crab, velvet crab and lobster will result in a short term reduction in landings as those individuals between the current and proposed MLS could not be caught until they have grown further.

Analysis by Marine Scotland Science analysis indicates that the percentages currently caught that would fall between the current and proposed MLS is as follows:

Assessment area	% landed between current and proposed MLS		
	B. crab	V. crab	Lobster
Clyde	18%	33%	12%
East Coast	18%	30%	12%
Hebrides	3%	17%	3%
Mallaig	-	-	-
North Coast	3%	-	-
Orkney	16%	18%	9%
Papa	1%	-	2%
South East	26%	23%	15%
South Minch	11%	26%	9%
Sule	3%	-	-
Ullapool	8%	-	-

However, it is expected that these individuals would grow to the new MLS within a year and could subsequently be harvested.

Scottish Firms Impact Test

Discussions with the fishing industry have been built into the policy development and consultation process.

Concerns regarding an increase in effort in the creel sector were raised with Marine Scotland by static gear sector representatives in early 2015. This led to the formation of an IFMAC working group, which met in mid-2015 to further consider these concerns and feed them back to the main group. At the meeting of the working group

Annex A

there was a consensus in favour of increasing the MLS in the brown crab, velvet crab and lobster fisheries.

New landing controls for crab and lobster have also been a feature of meetings of Inshore Fisheries Groups around the Scottish coast, as well as discussions Marine Scotland has held with individual fishing associations.

Competition Assessment

The proposed management measures are not expected to result in any negative impact on competition. The measures would apply to all Scottish and other British fishing boats landing into Scotland.

Test run of business forms

It is not envisaged that the proposed management measures will result in the creation of new business forms.

Legal Aid Impact Test

The proposed new management measures have been discussed with the Scottish Government Access to Justice Team, who have agreed that they should have no impact on the legal aid fund.

Enforcement, sanctions and monitoring

Marine Scotland Compliance is responsible for the monitoring and enforcement of marine and fishing laws. Fishery Officers have the power to perform inspections of fishing vessels at sea or in ports, fish markets and processing factories, in order to ensure compliance with legislation. Where a breach of fisheries regulations has been detected, it will be reported as appropriate to the prosecuting authorities. This can result in a fine of up to £50,000.

Implementation and delivery plan

The proposed measures will go to consultation on 26 February 2016. The consultation will run for a period of 12 weeks and close to responses on 20 May 2016. Following the close of the consultation, Marine Scotland will perform an analysis of responses and publish an outcome report.

If respondents are in favour of the proposed measures, Marine Scotland would proceed to implement them through new secondary legislation, which would be expected to come into effect during the second half of 2016.

- **Post-implementation review**

Marine Scotland will monitor the impact of any new management arrangements, and consider any practical or unforeseen consequences should they arise. Any areas of concern are likely to become quickly apparent through representations made by fishing industry representatives, the IFMAC group, Inshore Fisheries Groups, or Marine Scotland Compliance.

Annex A

Summary and recommendation

Marine Scotland recommends Option 2. Introducing new management measures for Scotland's brown crab, velvet crab and lobster fisheries will help to reduce the fishing mortality and potentially increase the long term average yield and recruitment to the fishery. These are measures that can contribute positively to management of the stocks and economic returns from the fisheries.

• Summary costs and benefits table

Option 1 – Do Nothing	
Total benefit per annum: - economic, environmental, social	Total cost per annum: - economic, environmental, social - policy and administrative
<ul style="list-style-type: none"> No additional benefits are expected to arise. Fishermen will continue to be able to land crab and lobster that complies with current fisheries legislation. 	<ul style="list-style-type: none"> Continuing the current status quo may result in reduced landings as high fishing mortality reduces spawning stock biomass and fishers become more dependent on animals nearer the current MLS and the long-term potential yield from the fisheries are not achieved. Increasing consumer interest in food provenance has led to retailers making a concerted effort to ensure they sell sustainably sourced fish. Maintaining current provisions may result in a loss of access to potential markets.
Option 2 – Introduce new management measures	
Total benefit per annum: - economic, environmental, social	Total cost per annum: - economic, environmental, social - policy and administrative
<ul style="list-style-type: none"> Increasing MLS for the crab and lobster fisheries will allow newly-undersized individuals the opportunity to grow and reproduce before being caught, potentially increasing the fisheries' long term yield and biomass. Prohibiting the landing of berried velvet crabs will protect mature individuals and potentially increase the stock's reproductive potential. Decreasing the $M_{ax}LS$ for female lobster and introducing a $M_{ax}LS$ for male lobster will potentially promote reproduction by protecting the fishery's most important reproductive individuals. 	<ul style="list-style-type: none"> Increasing MLS for the crab and lobster fisheries will result in a short term reduction in landings, as those individuals between the current and proposed MLS could not be caught until they have grown further.

Annex A

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| <ul style="list-style-type: none">• Prohibiting the landing of 'crippled' lobsters will allow them the opportunity to re-grow their limbs and achieve full market price when harvested, protect stock numbers and potentially increase spawning stock biomass.• Introducing restrictions on sale and carriage, to match any landing prohibitions that are implemented on a uniform basis across the entire Scottish coast, will aid in the enforcement of these prohibitions. | |
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Declaration and publication

I have read the Business and Regulatory Impact Assessment and I am satisfied that, given the available evidence, it represents a reasonable view of the likely costs, benefits and impact of the leading options. I am satisfied that business impact has been assessed with the support of businesses in Scotland.

Signed:



Date:

21st Feb 2016

Richard Lochhead
Cabinet Secretary for Rural Affairs, Food and the Environment

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