

## Minutes: R2 *Nephrops* habitat research

Meeting Date: 25 August 2020

Location: MS Teams

Attendees	Organisation
AC: Annika Clements	Seafish
BH: Barry Harland	Whitby Seafoods
BL: Bill Lart	Seafish
BS: Brooke Schlipf	University of York
CD: Calum Duncan	Scot LINK
CM: Carlos Mesquita	Marine Scotland Science
CP: Claire Pescod	Macduff Shellfish
DD: David Donnan	NatureScot
DW: Dan Whittle	Whitby Seafoods
EW: Elaine Whyte	Community Inshore Fisheries Alliance
FN: Fiona Nimmo	Poseidon
GB: Giles Bartlett	Whitby Seafoods
HW: Harry Wick	Northern Ireland Fish Producers Organisation
HS: Hayley Swanlund	WWF-UK
JP: Jo Pollett	Marine Stewardship Council
JPR: Joe Prosho	Morrisons
KK: Katie Keay	Marine Stewardship Council
MM: Malcolm Morrison	Scottish Fishermen's Federation
MP: Mike Park	Scottish White Fish Producers Association
MS: Matt Spencer	Marine Stewardship Council
RG: Roy Griffin	Department of Agriculture, Environment and Rural Affairs
SD: Steph Davidson	Associated Seafoods
<b>Observing</b>	
AH: Adam Holland	Queen's University Belfast

### Purpose of the meeting

This call was an opportunity for the Steering Group to review the recently completed University of York Masters research on the impacts of *Nephrops* trawl and creel fisheries on marine habitats in the North Sea, West of Scotland and the Irish Sea; and to discuss next steps.

### Introduction

In 2019 the Secretariat secured funding from the Fishmongers' Hall to research the impact of the *Nephrops* fishery on benthic habitats in the North Sea, Irish Sea and West of Scotland. This research represents a first step in the process of addressing the habitats action and will require further industry input.

Principle two habitat requirements set out in the MSC Standard place strong emphasis on vulnerable marine ecosystems (VMEs) due their vulnerability to the impacts of fishing and fisheries must avoid them. VMEs are fragile habitats that play an important part in ecosystem structure and function and contain unique and rare species.

## Habitat presentation by Brooke Schlipf

The aim of this research was to assess the level of interaction between *Nephrops* trawl and creel vessels with habitats in the Unit of Assessment (UoA). The research objectives were to identify habitat types present in the UoA, identify the main areas of *Nephrops* creel and trawl fishing activity and conduct a GIS-based risk assessment based on fishing effort and habitat overlap.

### Methods and analysis:

Data sources used for this research were:

- Trawl activity from Marine Scotland's 2015-2017 VMS data
- Creel fishing location data for the West of Scotland came from ScotMAP and Marine Scotland
- VME locality was obtained from NatureScot and JNCC, which provided both point data (based on location of Priority Marine Species - PMFs) and polygon data (based on PMFs, Marine Protected Areas (MPAs) and Special Areas of Conservation (SAC) location).

BS overlaid the VMS data – which indicated the fishery footprint in the UoA - in each ICES area with the point and polygon data to determine where the *Nephrops* fishery and VMEs overlapped. The density point data was used to show the distribution and concentrations of the VMEs within the UoA. This was compared against a hotspot map of Marine Scotland 2017 VMS data for *Nephrops* trawl vessels >15m.

### Results

#### *West of Scotland - trawl*

BS showed two graphs using Marine Scotland 2015-2017 VMS data: one indicating VME overlap based on point data, which showed in 2017 there was 26.6% overlap between the fishery and VMEs. In 2017 there appears to be less overlap between VME indicators and the fishery than 2015 and 2016, with central and south Minch having the highest densities of VME point data overlap with the fishery. The second graph used polygon data to show that in 2017 there was a 9% overlap between the trawl fishery and protected areas and SACs for VMEs.

BS displayed the point data as a pie chart which indicated that 53% of the fishery overlap with VMEs was over burrowed mud, followed by 29% overlap with northern sea fan and sponge communities, 13% maerl beds, 3% burrowed mud or inshore deep mud with burrowing heart urchins and 2% 'other'. BS summarised saying that the majority of trawl fishing activity in the West of Scotland occurs over burrowed mud habitat.

#### *North Sea - Trawl*

Using point data, BS showed that in 2017 there was 67.9% overlap between the fishery's UoA and VMEs, with this percentage rising each year from 28.8% in 2015. Using the polygon data, only 3% of the fishery overlapped with protected areas or SACs. When the VME point data was displayed as a pie chart it showed that 62% of the fishery's footprint interacted with burrowed mud, 24% burrowed mud or inshore deep mud with burrowing heart urchins, 14% offshore deep-sea muds and less than 1% other habitats. BS believed the reason for the large change in burrowed mud interaction compared with the other regions was due to that habitat type being more extensive in the North Sea than the West of Scotland

### *Irish Sea – Trawl*

BS only had access to polygon data in the Irish Sea, as the point data sets from Marine Scotland were for Scottish waters only. The polygon data showed that there was 3% overlap between the fishery and the two protected areas in the Irish Sea – Queenie Corner and West of Walney conservation zone. BS added that the two protected areas have no or limited management in place.

### *West of Scotland – Creel*

ScotMAP data for the creel fishery was limited with information on fishing activity only collected anecdotally from the fishery. The point data set from Marine Scotland showed a 74.9% overlap between VME indicators and creel fishing activity. Polygon data showed a 16.3% overlap between protected areas and SACs and the creel fishery. BS explained that the limited availability of the creel data, and the fact that four years' worth of data was consolidated into one database, may explain why it suggests that there is a larger overlap present between creel fisheries and VME's than for trawl.

When the VME point data was displayed as a pie chart it showed 54% of the fishery's footprint interacted with burrowed mud, 13% Northern Sea fan and sponge communities, 12% maerl beds, 11% flame shell beds, 5% burrowed mud or inshore deep mud with burrowing heart urchins and 5% other habitats. BS pointed out that the creel fishery overlapped with more VME types than the trawl fishery, as many of the VMEs identified in her study, such as flame shell beds, can be found very close to shore and not in areas that where trawling occurs.

Although the initial results indicate a high spatial overlap between the creel fishery and VME indicators, it is expected that the impact of the creel fishery will be far lower than impacts from trawl gear. For example, some VMEs such as sea pens are resilient to 'smothering' by creel.

### **BS provided a list of limitations and caveats of the study:**

- Vessels <12m were not include in the study. BS suggested the use of Global Navigation Satellite System could resolve this issue.
- Limited creel fishery footprint data from ScotMap which was unreliable, with data gathered from oral surveys across a five-year period and all in one dataset. BS believed there could be large annual variation in the data, due to data being provided anecdotally, so results for the creel fishery overlap may be incorrect.
- Resolution of trawl intensity was low with the margin of error for this data needing refinement.
- There was a lack of VME point data outside of Scottish waters.
- Point data doesn't show levels of biomass. One VME data point could represent one occurrence of one habitat species, or it could represent an entire ecosystem. Greater information and data would be a significant benefit.

### **Conclusion**

BS summarised the findings from the report:

- Despite the creel fishery having greater overlap in West of Scotland with VMEs than trawl gear it is likely that the creel fishery's impact would have less impacts on habitats.
- Burrowed mud, Northern sea fans and sponge communities, and Maerl beds had the greatest overlap with the *Nephrops* trawl and creel fisheries.

- Due to the overlap between VME indicators and fishing effort identified in the report, some FUs may not yet meet SG80 of the MSC Standard.

## Discussion

Steering Group members expressed concerns over the resolution of the data used in the report as it was over such a wide scale. EW stated that the creel data was collected between 2007-2011, and was considered as unreliable by fishers. EW cautioned that since that data had been gathered there had been an increase in creeling activity. She also questioned if the Inshore Fishing Groups (IFGs) or fishermen had been contacted directly during the study. BS said she hadn't contacted either, and that she had included the concerns around the reliability of the creel dataset in the report. EW recommended contacting fishermen in any work in this field. DW said the Steering Group could contact the IFGs to get better creel data.

FN explained to the Steering Group that VMEs and commonly encountered habitats needed to be treated differently according to the MSC Standard. Within the Masters report, burrowed mud is treated as a VME. However, as it is the main *Nephrops* fishing ground it should be considered a commonly encountered habitat. FN believed that burrowed mud was treated as a VME due to a presumption of individual sea pens and burrowing megafauna being present. This is of concern as VME should be avoided when fishing and BS offered to clarify the report to reflect the distinction between VME and VME indicators present in burrowed mud.

DD commented on the overlap between the trawl and creel fishery and maerl beds as maerl does not usually occur in the same habitat as *Nephrops*. BS suggested that the resolution of data may have produced inaccurate results in her report, such as this high overlap between *Nephrops* fishing activity and maerl beds.

DW returned to the issue of data resolution, questioning the scale of VME point data and whether any amount of maerl beds, whether 1m<sup>2</sup> or 5km<sup>2</sup>, would be considered as equivalent on BS' maps. If so, small areas of VMEs could lead to large area of closures. BS confirmed that the point data didn't differentiate between size of VME in this study.

DW noted that the MSC Standard requirements for habitats are assessed against the state of habitats in 2006, and that fishery could not be scored against any damage to the habitat prior to 2006. He noted that the VMEs present - where *Nephrops* are regularly fished for - are likely to remain there due to high resilience to the fishing activity that is ongoing. DW added that more sensitive species would have left the area of activity a long time before and are unlikely to be present. DW stressed the importance of identifying exactly where VMEs occur so that they can be properly protected.

HW agreed and commented that habitats in the UoA would have been restructured as a result of trawling that had occurred since about 1980. HW suggested that the group may need to assess the actual vulnerability of some of the VMEs, as VMEs present had already existed alongside the fishery for approximately 40 years.

EW informed the Steering Group that it was possible to avoid sensitive areas and mentioned 'Anchor Lab' project. This is just over two years old and is being trialled by the Scottish Government on approximately 20 boats. EW said it includes a camera system, which increases accountability and has helped reduce misreporting of illegal fishing activity.

AC highlighted that there is also a creel fishery in Northern Ireland which should be recognised in this report. AC said there is data on habitats in the Irish Sea available, but the definition of habitats

needed to be made clear. She also said the definition of burrowed mud was different in Scotland than the rest of the UK which might have implications for MSC assessment.

BL commented that the MSC Standard measures of the extent of habitat impact from a fishery by determining its potential to recover to 80% of its original state within five to 20 years. BL suggested it might warrant further investigation to better understand the recoverability of VMEs in the UoA.

FN said next steps are to map VME overlap using VMS and point data and get formal Steering Group feedback on the report to determine any gaps or inaccuracies. The report will also need industry input and any outstanding questions in the chat box will be responded to in due course. FN requested feedback on defining burrowed mud as a commonly encountered habitat, as it is listed as a Scottish PMF. A PMF is not necessarily a VME, but highlights a PMF's importance to the Scottish Government.

### Actions

- FN:
  - a) to produce a feedback document for the Secretariat to distribute to the group
  - b) to provide initial comment to BS to incorporated in the report and request shape files from BS
- Secretariat to distribute the comment and review documents created by FN to the Steering Group for feedback from BS' report
- Steering Group to review and provide comment on BS report by the 25<sup>th</sup> September

### Any Other Business

JP thanked DW for chairing and said the feedback questionnaire and draft minutes will be circulated in due course.

### Meeting Closes

16.15

Actions Arising		Responsibility
1	<b><i>Nephrops</i> habitat report:</b> <ul style="list-style-type: none"> <li>• FN:               <ul style="list-style-type: none"> <li>a) to produce a feedback document for the Secretariat to distribute to the group</li> <li>b) to provide initial comment to BS to incorporated in the report and request shape files from BS</li> </ul> </li> <li>• Secretariat to distribute the comment and review documents created by FN to the Steering Group for feedback from BS' report</li> <li>• Steering Group to review and provide comment on BS' report by the 25<sup>th</sup> September</li> </ul>	FN  Secretariat  Steering Group