

Minutes: UK *Nephrops* Principle 2 environment meeting

Meeting Date: 21 October 2020

Location: Teams

Attendees	Organisation
AB: Abigail Blandon	WWF-UK
AC: Annika Clements	Seafish
AD: Ally Dingwall	Sainsbury's
AJ: Aisla Jones	Co-op
BC: Ben Collier	Northern Ireland Gear Trials
BH: Barry Harland	Whitby Seafoods
BL: Bill Lart	Seafish
CM: Carlos Mesquita	Marine Scotland Science
CMo: Cameron Moffat	Young's Seafood
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
HW: Harry Wick	Northern Ireland Fish Producers' Organisation
JP: Jo Pollett	Marine Stewardship Council
KC: Kenny Coull	Scottish White Fish Producers' Association
KK: Katie Keay	Marine Stewardship Council
ML: Mathieu Lundy	Agri-Food and Biosciences Institute
MM: Mike Mitchell	Young's Seafood
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 Seafood
SS: Sam Stone	Scot LINK
WD: William Davies	Hilton Seafoods
Presenting:	
AH: Adam Holland	Queen's University Belfast

Purpose of the meeting

The call was an opportunity for the Steering Group to discuss progress on each of the Principle 2 actions, and review the recently completed Queens University Masters research on *Nephrops* creel and trawl fisheries interactions with Endangered, Threatened and Protected (ETP) species in the North Sea, West of Scotland and the Irish Sea.

Action 6 & 7: Primary and secondary species

These actions require establishing an accurate catch profile for both the trawl and creel fishery, including data on the quantity of species by weight to inform whether a species is considered 'main' (>5% of catch) or minor (<5%) in an MSC assessment. In particular, the status of cod and whiting in the catch composition will influence the ability for *Nephrops* to enter MSC assessment. The timeline set out in the FIP action plan shows that by Spring 2021 the score for the primary species

management Performance Indicator for the West of Scotland is expected to move from SG60 to SG60-79.

Stock status updates for whiting

West of Scotland

- Continuous low catches since 2005, with the stock showing no signs of rebuilding. FN said this stock would benefit from more bycatch modelling methods. There are no reference points for whiting in West of Scotland so this stock would need Risk Based Framework (RBF) analysis.

Irish Sea

- No catch advice for 2020-2021.

North Sea

- The spawning stock biomass (SSB) is slightly above MSY B_{trig} and above the Blim; fishing mortality (F is above f_{MSY} and well below f_{PA} and Flim, so FN believes this would meet SG80 in an MSC assessment.

Stock status updates for cod

West of Scotland:

- June advice provided details on a benchmarking exercise that resulted in revised estimates for SSB, recruitment and mortality. This had a minor impact on the status of the stock, with f above flim and SSB declining further. SSB has been below Blim since 1993.
- The 2020 ICES assessment found that management was having no effect on biomass. As juvenile cod form aggregations, real time closures are recommended as a management option. The ICES report also raised concerns over misreporting catch from other ICES areas.

Irish Sea:

- The total allowable catch (TAC) for this fishery is still pending with a low biomass showing slight increases in recent years. FN said this stock will need RBF analysis if the FIP progresses to full assessment.

North Sea:

- The stock is below Blim and the f is above flim. The Scottish Fisheries Sustainable Accreditation Group (SFSAG) North Sea cod fishery currently has its MSC certification suspended and produced a management paper that ICES have recognised as a precautionary management plan.
- ICES advice shows that the expected TAC for 2021 will not hinder rebuilding of the stock; so while cod in the North Sea is below the point of recruitment impairment (PRI), effective management allows the stock to meet SG60.

Catch composition discussion

ML mentioned that whiting is set to be benchmarked this year to address assessment issues but ML believed the TAC was likely set to be zero for 2021. Whiting recently moved from an ICES category 1 species (full analytical assessment with reference points) to a category 5 species (assessments based

on landings information). The Steering Group considered this an inaccurate representation of the information available as the West of Scotland whiting stock is not data limited, but is being hindered by assessment methods available to fisheries scientists. More time is needed for ICES to assess the stock as a category 3, and in due course, a category 1 in the near future.

KC informed the group that there are voluntary closures for cod in North Sea fisheries, which have been supported by Fisheries Innovations Scotland (FIS). The voluntary closure uses a move on system when a vessels encounters juvenile cod.

CM discussed the work Liz Clarke (Marine Scotland) did on catch composition at a Functional Unit level in the Clyde region, with a focus on the biomass of cod caught in the *Nephrops* fishery. CM believed whiting and haddock were also caught in significant quantities and recommended contacting Liz Clarke to get more information or asking her to present her findings to the group. CM added he could ask Liz Clarke to produce a short summary of her work.

FN presented landings and discards from the EU Scientific, Technical and Economic Committee for Fisheries (STECF) database and asked the group whether it should be included in the catch composition review. As the data for the STECF originates from the national labs (Cefas, AFBI, Marine Scotland Science) CM and ML both felt using STECF data would be relevant for defining catch composition. However, it would not show landings and discard data at Functional Unit level, as STECF do not currently provide it, but there is a request to STECF to provide information at a Functional Unit level. ML reminded the group that ICES advice sheets provide percentage catch from each fleet and would show the proportion of cod and whiting the *Nephrops* fleet is catching.

FN asked the group whether to include TR1 and TR2 gears in the UoA, as different gears have different catch profiles. CM believed both gears should be included as some Functional Units had an even distribution of gear use - central North Sea, Moray Firth, FU 9. CP agreed and flagged traceability concerns if both gears are not taken forward. If both trawl gears are assessed, then cod in the West of Scotland would become a main species and would add complexity to a full MSC assessment. FN recommended including both gears in the Unit of Assessment (UoA) to increase flexibility for the group, but warned that it may lead to some Functional Units being unable to meet SG80 – and might have to be dropped from the UoA of the FIP – due to bycatch of unwanted primary and secondary species. CP was against any Functional Units being removed from the UoA of the FIP as it would cause problems for supply chain traceability, and said the Steering Group needed to get all Functional Units to a position where they would pass full MSC assessment and only in a worst-case scenario would any be dropped.

The importance of the creel fishery was highlighted by CM who said in some Functional Units (11 and 12) creel landings are approximately 20%-30% of total landings. There are some transferrable landings from the Loch Torridon fishery. Obtaining creel observer data has always been difficult, due to a lack of an observer programme, but MSC assessment requires 'some' quantitative data to score SG80. Creel bycatch is associated with having high survivability, but CM informed the group that many fish species caught as bycatch are often kept to be used as bait. This implies that there will be a higher than expected mortality of bycatch in the creel fishery and the group will need to obtain more data from this sector.

Alternative measures report

The year 2 action requires a review of alternative measures for minimising bycatch in the fishery BL is conducting this review, and the Steering Group were reminded to share any gear trial information they may have.

WWF, Tesco and Hilton Seafoods are developing a bycatch reduction project and WD said he would keep BL informed of any progress and updates. BL offered to share previous Seafish information with WD and AB.

FN concluded that there was sufficient data on non-quota species being caught in the trawl fishery, but these species would have been accounted for, even with sparse data, due to Poseidon conducting an RBF analysis

Actions:

- BL to share Seafish bycatch mitigation information to WD and AB.
- CM to ask Liz Clarke for a summary of her catch composition findings in Clyde Functional Unit.
- FN to conduct a secondary species PSA analysis.
- Secretariat to:
 - a) invite Liz Clarke to present to group, if necessary
 - b) ask Cefas to provide creel trip data to help understand bycatch
- Steering Group members to share gear trial information to BL for his alternative measure report.
- WD to keep the SG updated on progress with the WWF/Tesco bycatch project

Action 10: Ecosystem

This action addresses the interactions between the fishery and the ecosystem using a scale, intensity, consequence analysis (SICA) to better understand any impacts. FN and BL had been working on the questionnaire And the Steering Group- agreed that a SICA workshop should be arranged for March 2021; with relevant experts identified and invited to participate. A SICA is designed to assess data deficient stocks but any further information prior to the workshops would be welcomed.

The Secretariat reminded the Steering Group to share names for relevant experts to be invited.

Actions:

- FN to finalise the SICA questionnaire
- Secretariat to organise SICA workshops for March 2021
- Steering Group to share names of experts to contribute to SICA analysis workshop with FN and Secretariat.

Action 8: Endangered, threatened and protected species

The Steering Group commissioned a Masters project through Queens University Belfast, to assess the level of interaction between *Nephrops* trawl and creel fisheries and ETP species in the Unit of Assessment (UoA). The research objectives were to identify ETP species present in the UoA, identify the main *Nephrops* grounds, conduct a GIS-based risk assessment based on species distribution and fishing effort maps and conduct a gap analysis to determine if any ETP species had been missed. AH's

final report has already been circulated to the Steering Group and this was an opportunity for him to share his results and answer any questions.

Methods:

- AH used OSPAR VMS data for vessel locality, Aquamaps for ETP species distribution (areal overlap) and MarLIN and Fishbase for encounterability information. Expert consultation from Project UK members and academics was sought throughout the research
- Areal overlap was the percentage overlap between fishing intensity and species distribution, providing the spatial likelihood of interaction
- Encounterability gave the depth overlap between species and fishing gear. A depth range of 15-400 m was used in this study for potential UK *Nephrops* fishing activity

Results:

Trawl intensity

- Appeared consistent from 2013-2017
- Irish Sea – average 336 hrs/year, majority in FU 15
- West of Scotland – 508 hrs/year, majority in FU 13
- North Sea – 368 hrs/year, majority in FU 8

Creel intensity

- Shortage of data for creeling activity. Growing sector in Northern Ireland but lacking spatial data. Regions available for analysis included inshore areas of FU 11 and 12 (other areas had no data).
- Highest intensity around inshore bays and shallow water.

Areal overlap

- Aquamaps – a collaborative project between Fishbase and Seabase – provided the areal overlap of ETP species showing a number of ETP species had significant overlap with the trawl fishery (see thesis for further detail).
- For the creel fishery, the only species considered at risk are otters. A Bangor University project mentioned by BL had similar findings to this areal overlap work, which he offered to pass over to the Secretariat.

Encounterability

- 31 species showed high encounterability with *Nephrops* fishery, 16 of which had 100% overlap.
- AH acknowledged that the depth of the fishery he used for his analysis - 400m - was too deep to be representative of the UoA of the FIP and may have increased the likelihood of encounterability with some species.

Risk analysis

- A final risk analysis score for the ETP species that were taken forward for analysis was produced through combining the scores of encounterability, aerial overlap and reported bycatch frequency.
- Six species were indicated as high risk with the trawl. They are: porbeagle, spurdog, starry ray and tope, white skate and white cluster anemone.

- For creel gear, humpback and minke whale were considered most at risk of entanglement – based on literature review - but did not have final scores due to absence of creel data.

Conclusions and recommendations:

- AH found that trawling posed a significant risk to ETP species
- Improving elasmobranch interaction records and best practice through consultation with:
 - ICES Working Group on Elasmobranch Fishes (WGEF)
 - Shark Trust UK
 - CEFAS
- To improve the results of the study AH recommended:
 - Conducting habitat suitability analysis to get a more accurate portrayal of where ETP species may actually inhabit.
 - Having greater industry consultation to ‘ground-truth’ some of the results.
 - Greater data of ETP interaction in the creel sector

Discussion

DD stated the need for consultation with industry and fishing authorities, as some of the results need more considerations, for example, flapper skate should probably be considered as a high risk ETP species. DD explained there is a lot of work that could be done by the mobile gear sector to increase the understanding of juvenile flapper skate location and behaviour, which could be fed into the FIPs year two action of developing an ETP recording protocol. FN said having this kind of feedback is important, and the Secretariat will circulate a feedback form for the Steering Group to provide comments on the content on the report.

KC said it was unfortunate maps had not been produced and thought the methodology AH used may have increased the risk status of many species. KC recommended filtering the VMS data to ascertain actual fishing activity, as opposed to travelling vessels. KC disagreed with the risk status of porbeagle, citing it as highly unlikely to be caught. KC also had disagreement on the risk status of starry ray as it was a common species, particularly in the North Sea, and had very high survivability. AH acknowledged the starry ray comment and said the study did not take into account survivability. The Steering Group agreed with the status of spurdog and DW said there was appetite within industry to resolve the issue of spurdog bycatch.

The Steering Group agreed that this report was a useful first step for the ETP action and next steps include consulting on the results directly with fishermen and developing an ETP recording protocol.

The Steering Group discussed having Open Seas provide formal comment on the report but agreed that the content of report needs refining before it is ready for external review.

Actions:

- AH to send raw data from his report so maps can be drafted to FN and the Secretariat
- BL to share Bangor University areal overlap paper he has with Secretariat and FN
- DD to share work on skate survivability with FN and Secretariat
- FN to draft feedback document template for review of AH thesis
- JP, FN and FdB a meeting to discuss the recording protocol and industry surveys
- Secretariat to share feedback template
- Steering Group to review AH thesis and provide comment

Action 9: Habitats

Prior to this Steering Group meeting, an environmental sub-group (ESG) meeting was held to discuss the status of burrowed mud was as either a vulnerable marine ecosystem (VME) or a commonly encountered habitat. The ESG agreed that burrowed mud would be considered a commonly encountered habitat when burrowed mud is not designated in a protected area, and is not associated with specific VMEs. Burrowed mud will be considered a VME if VME features are present, as designated by OSPAR and Priority Marine Feature (PMF) definitions:

- where there are sea pens and burrowing megafauna
- Volcano worm
- Firework anemone
- Burrowing heart urchins
- Mud burrowing amphipod
- Tall sea pens and Northern sea fan and sponge communities

A recent Masters project looked at habitat interactions with *Nephrops* gear, and comments showed:

- there are designated marine protected areas (MPAs) for burrowed mud features that do not have management measure in place, which FN believed could warrant voluntary measures being implemented in areas of priority.
- a need to better understand the impacts of creel and trawl gears on burrowed mud, and the recoverability of VMEs and commonly encountered habitats in the UoA.
- clarification on the historical extent of VMEs, which FN explained was based on United Nations General Assembly resolution 61/106 in 2006. If damage to VMEs occurred before 2006 the fishery would not be held accountable for historical damage but further damage is not acceptable. If a VME is identified after 2006 then this is deemed to be its unimpacted state and vessels should avoid further damage. If fishery impact occurred after 2006 then the unimpacted level is the idealised expected recovery state (set in 2006) or whenever the VME has been identified.

BL believed the relative benthic impact tool developed by Bangor University is expected to be incorporated into the MSC standard. The tool allows users to insert known fishing data to calculate whether commonly encountered habitats would recover within five years to 80% of its unimpacted state, as set out in the MSC Standard.

AB believed that a fishery impacting VMEs prior to 2006 and continued doing so to present day would lack proper accountability of the damage their activities had caused if the unimpacted reference point was 're-set' in 2006. FN said the group need greater clarity on this issue and would need an understanding of when certain VMEs in the UoA were identified. DD offered to research the status of the designation for 'other burrowed mud', and how it should be managed.

AB believed that some VME features were designated by their grain size and that burrowed mud (termed "burrowed mud, other burrowed mud") might be an indistinguishable feature relying on the presence of other species such as sea pens to help aid its designation. Due to the long history of fishing activity in the UoA of the FIP, the group believed it unlikely that there are any unimpacted sites in the UoA to model recovery from, but AC believed evidence could be drawn from incidentally protected areas e.g. naval bases or near underwater cables.

The group discussed how the protected areas in the Irish Sea were designated and whether there had been any research conducted to quantify the effects of designating the protected area had on the nearby ecosystem. AC believed the group would have to ask Defra, as although fisheries management is a devolved matter, fisheries conservation is not.

The Steering Group discussed scope of the research needed to address this action and agreed it would more appropriate to do this at a PhD or post doc level. BL recommended contacting Jan Hiddink as he had recently released a paper which looked at relative benthic impacts of all the demersal towed gear in the North Sea. BL offered to share this paper along with a paper from the Irish Sea that had looked into relative benthic status. AC said that finding an institute to deliver the work will not be difficult but finding funding might. DD believed it should be a post-doc research project and said Bangor University would be appropriate. The Secretariat agreed to contact Jan Hiddink, to begin drafting a terms of reference and investigate potential funding. DW stressed the importance of financing Bangor University to conduct this work, and that further funding maybe requested from Project UK funders.

AC made the group aware of the Seafish Kingfisher MPA project. A new member of staff has been hired to conduct a mapping and logging exercise of all protected areas in the UK and their designated management measures.

Actions:

- AC to find out more about the Kingfisher MPA project and update the Steering Group
- DD to follow up with FN over status burrowed mud (other burrowed mud) and how this habitat type is defined.
- BL to share Jan Hiddink's new paper and an Irish Sea benthic status paper with FN and the Secretariat.
- Secretariat to:
 - a. facilitate commissioning of further habitats research and search for funding.
 - b. speak with MSC Science and Standards team for more information on the 2006 baseline and interpretations

Meeting Closes

12.30

Actions Arising	Responsibility
Action 6 & 7: Primary and secondary species <ul style="list-style-type: none"> • BL to share Seafish bycatch mitigation information to WD and AB. • CM to ask Liz Clarke for a summary of her catch composition findings in Clyde Functional Unit. • FN to conduct a secondary species PSA analysis. • Secretariat to: <ol style="list-style-type: none"> a) invite Liz Clarke to present to group, if necessary b) ask Cefas to provide creel trip data to help understand bycatch 	BL CM FN Secretariat

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