



Scottish MPA Fisheries Management Evidence Audit

July 2022

Summary

This document sets out new evidence available on the designated features for each Marine Protected Area (MPA) in Scotland's offshore waters. The evidence base for some sites has remained the same since the Joint Recommendation process in 2017 (as part of the Common Fisheries Policy), whilst for other sites new evidence is now available. These sites are presented separately in this document. The original fisheries management proposals developed through the Joint Recommendations process are presented alongside evidence on the feature distributions. New evidence is mainly available from updated Annex I Reef habitat maps, new MPA monitoring survey data, the updated Vulnerable Marine Ecosystems (VME) database and the updated OSPAR threatened and/or declining database. Where this new evidence indicates that a change in the management proposal may be needed to ensure the conservation objectives for the designated features can be achieved, this has been documented with a supporting rationale.

Where changes to the proposed fisheries management measures are recommended, these will be discussed with stakeholders and this document is intended to support these discussions. When developing management measures, JNCC would advise that fisheries managers and stakeholders consider the levels of risk to the designated features where there are interactions with fishing activities.

Contents

1	Overview of sites	1
2	Sites with new evidence	2
2.1	Barra Fan and Hebrides Terrace Seamount MPA	2
2.2	Central Fladen MPA	4
2.3	East Rockall Bank SAC.....	6
2.4	East of Gannet and Montrose Fields MPA	8
2.5	Faroe-Shetland Sponge Belt MPA	10
2.6	Geikie Slide and Hebridean Slope MPA	12
2.7	North-east Faroe-Shetland Channel MPA	14
2.8	Norwegian Boundary Sediment Plain MPA	16
2.9	Pobie Bank Reef SAC	18
2.10	Stanton Banks SAC.....	20
2.11	West Shetland Shelf MPA.....	22
2.12	Wyville Thomson Ridge SAC	25
3	Conclusions	29
	References	30

1 Overview of sites

A full list of the Marine Protected Areas (MPAs) in Scottish offshore waters is presented in Table 1. The table details whether each site has new evidence available since the fisheries management proposals were developed through the Joint Recommendations process in 2017.

Sites highlighted in orange in Table 1, where changes in evidence have occurred, are discussed in Section 2 of this document.

For the sites where there are no changes in evidence (those not highlighted in orange in Table 1), it is likely that no amendments to the fisheries management proposals are needed. These sites are therefore not addressed further within this document.

Table 1. Marine Protected Areas in Scottish offshore waters, with details on whether the site has any changes in evidence since the Joint Recommendations process in 2017.

Site name	Designation	Evidence changes
Anton Dohrn Seamount	SAC	No
Barra Fan and Hebrides Terrace Seamount	MPA	Yes
Braemar Pockmarks ¹	SAC	No
Central Fladen	MPA	Yes
Darwin Mounds ²	SAC	N/A
East of Gannet and Montrose Fields	MPA	Yes
East Rockall Bank	SAC	Yes
Faroe-Shetland Sponge Belt	MPA	Yes
Firth of Forth Banks Complex	MPA	No
Geikie Slide and Hebridean Slope	MPA	Yes
Hatton Bank ²	cSAC	N/A
Hatton Rockall Basin ²	MPA	N/A
North-east Faroe-Shetland Channel	MPA	Yes
North-west Orkney ³	MPA	N/A
North-west Rockall Bank ²	SAC	N/A
Norwegian Boundary Sediment Plain	MPA	Yes
Pobie Bank Reef	SAC	Yes
Scanner Pockmark ¹	SAC	No
Solan Bank Reef	SAC	No
Stanton Banks	SAC	Yes
Turbot Bank	MPA	No
West of Scotland ⁴	MPA	N/A
Wyville Thomson Ridge	SAC	Yes

¹ Since the Joint Recommendation process, the site boundaries for Braemar Pockmarks SAC and Scanner Pockmark SAC were amended, however the original fisheries management proposals were based on these new boundaries (corresponding to the updated feature extent). Therefore, this is classed as no change in evidence.

² Darwin Mounds SAC, Northwest Rockall Bank SAC, Hatton Bank cSAC and Hatton Rockall Basin MPA were not included within the Joint Recommendations process, as existing management was, and remains, in place under the North East Atlantic Fisheries Commission (NEAFC).

³ North-west Orkney MPA (designated for Sandeels) was not included within the Joint Recommendations process, as existing measures are in place through the Sandeel management units, which fully overlaps the site.

⁴ West of Scotland MPA was designated after the Joint Recommendation process, therefore new fisheries management measures are being developed for this site and evidence changes are not applicable.

2 Sites with new evidence

Marine Protected Areas (MPAs) in Scottish offshore waters where changes in evidence have occurred since the Joint Recommendation process in 2017 are included within this section. The changes in evidence are summarised and any recommended updates to the fisheries management proposals are documented, with supporting rationale.

2.1 Barra Fan and Hebrides Terrace Seamount MPA

2.1.1 Evidence summary

New VME indicator records are present across the site, including the following which are located outside the proposed fisheries management closure (Figure 2):

- **Dark blue** points (Gorgonians) – Two point records for the Priority Marine Feature (PMF) *Swiftia pallida* (Northern sea fan) at the eastern edge of the site. These records comprise of 25 individuals that were collected during the Marine Scotland Science (MSS) 0412S survey and eight individuals collected during the MSS 1413S survey.

Furthermore, there are some Vulnerable Marine Ecosystem (VME) indicator records within the proposed closure for demersal mobile gear only (where other demersal static gear would be permitted; Figure 2):

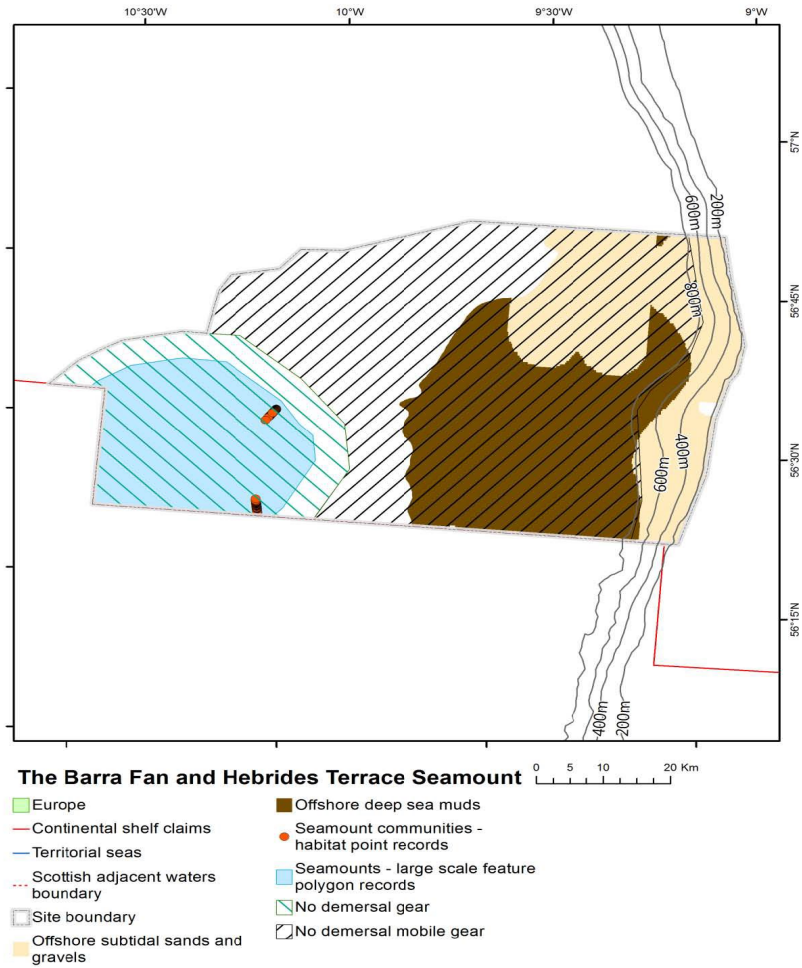
- **Red** points (Stony corals) – Single live *Madrepora oculata* collected on the MSS 0411S survey
- **Dark blue** points (Gorgonians) – Three *Acanella arbuscula* and one *Paramuricea biscaya* collected on various MSS surveys.

2.1.2 Recommendation

No changes to management proposal are likely to be needed as these records do not represent the designated features. Note that these VME records are also likely to be protected under any future VME closures which will be progressed separately under the Part 5, Chapter 7 of The Common Fisheries Policy and Aquaculture (Amendment etc.) (EU Exit) Statutory Instrument (S.I.) 2019 No. 753, which converts Council Regulation (EU) 2016/2336 into UK law⁵.

Figure 1 shows the original Joint Recommendation fisheries management proposal for the MPA, and Figure 2 shows the additional survey data that has become available since 2017.

⁵ Under this legislation, in order to minimise the impact of fishing activities occurring in deep-sea waters on VMEs, a list of areas where VMEs occur or are likely to occur should be established where fishing with bottom gear is prohibited.



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Figure 1. Proposed fisheries management measures for The Barra Fan and Hebrides Terrace Seamount MPA developed under Joint Recommendations in 2017.

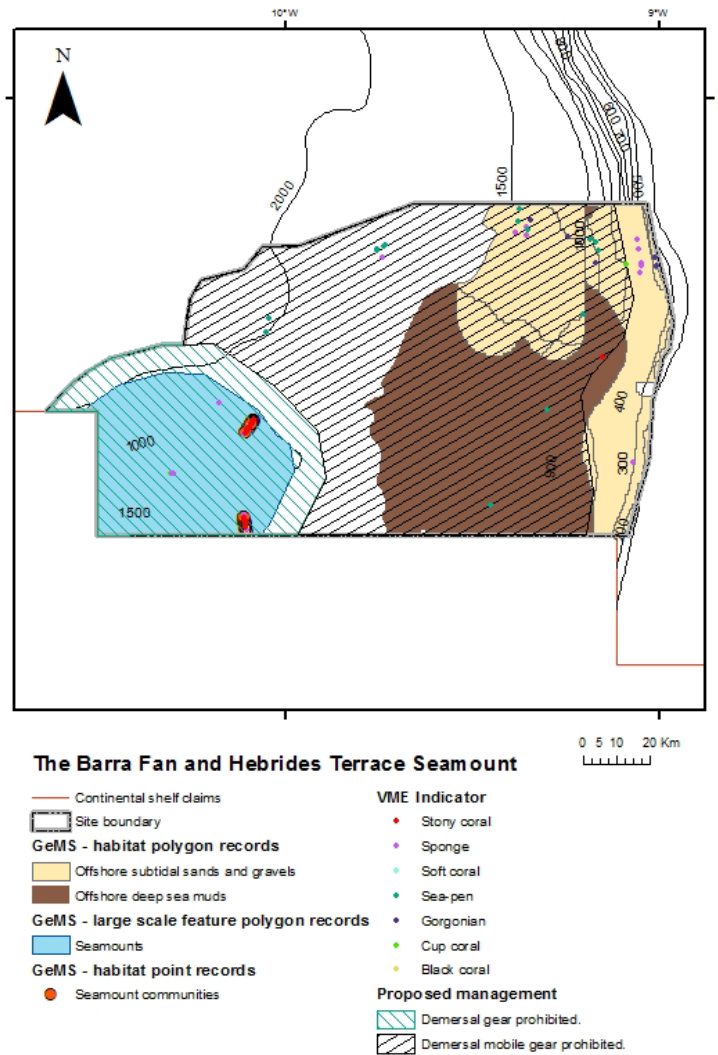


Figure 2. New evidence for The Barra Fan and Hebrides Terrace Seamount MPA since 2017.

2.2 Central Fladen MPA

2.2.1 Evidence summary

GIS data for *Funiculina quadrangularis* (tall seapen) within Central Fladen MPA indicated that there may be records outside the proposed management area, however these records were found to be anomalous. JNCC have checked the data for this site and have looked into the anomalous layer (entitled 'Funiculina_CFL_only'). Only one of the layers which was used to create this appears to show records outside the proposed management zones (layer is named Funiculina_CEND2013&MSS_2008_-_2010). However, despite the layer name, the attribute table seems to exclusively list Burrowed mud. JNCC have cross checked these points against the original datasets. The survey reports for most records only show *Funiculina* within the proposed management areas. The other records seem to be various Marine Scotland Science survey records collated as part of the "Data Mining of the *Nephrops* Survey Database to Support the Scottish MPA Project" (Allan et al., 2012). These correspond to the Marine Scotland Science *Nephrops* UWTV Surveys 2008 to 2010 datasets. Again, however, these records all appear to be within the proposal management area.

Additional analysis from 2019 and 2020 survey data collected by Marine Scotland Science for *Nephrops* assessments is also available for Central Fladen MPA (Benson et al., 2021). However, no *F. quadrangularis* seapens were observed. New records for Burrowed mud from the Geodatabase of Marine features adjacent to Scotland (GeMS) database and other various surveys are available, which are shown in Figure 4.

2.2.2 Recommendation

On the basis of the information above, the decision has been made by JNCC to discount the anomalous data points. Therefore, there are not deemed to be any records of *F. quadrangularis* seapens outside the proposed management areas and as such, no changes to management are likely be needed for this site.

Figure 3 shows the original Joint Recommendation fisheries management proposal for the MPA, and Figure 4 shows the additional survey data that has become available since 2017.

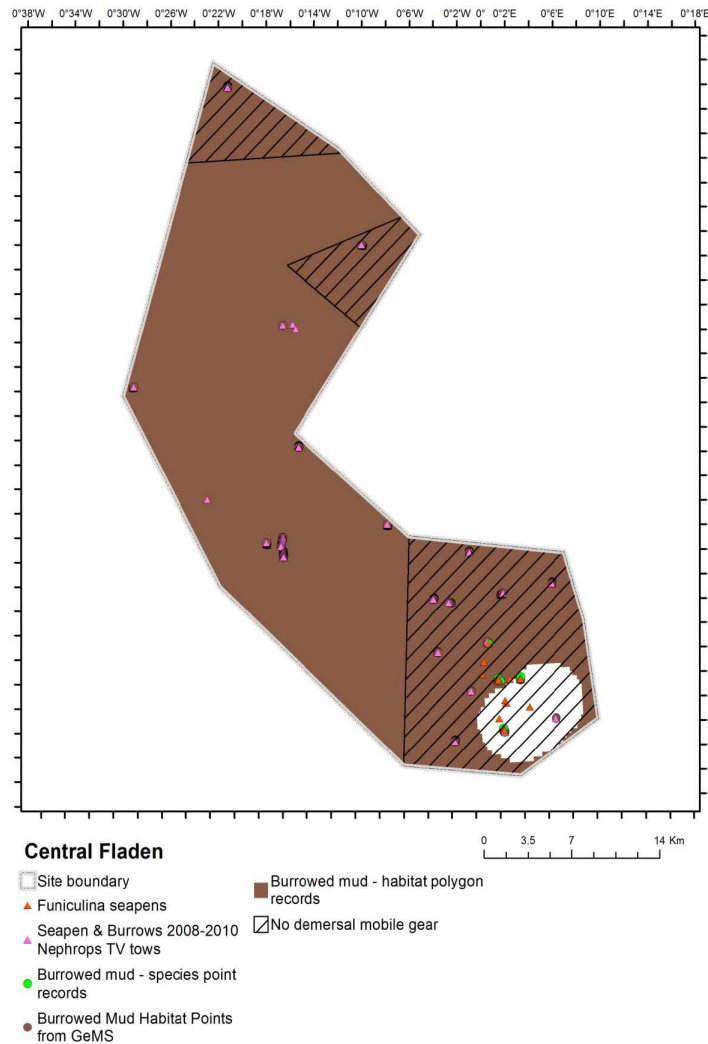


Figure 3. Proposed fisheries management measures under Joint Recommendations in 2017.

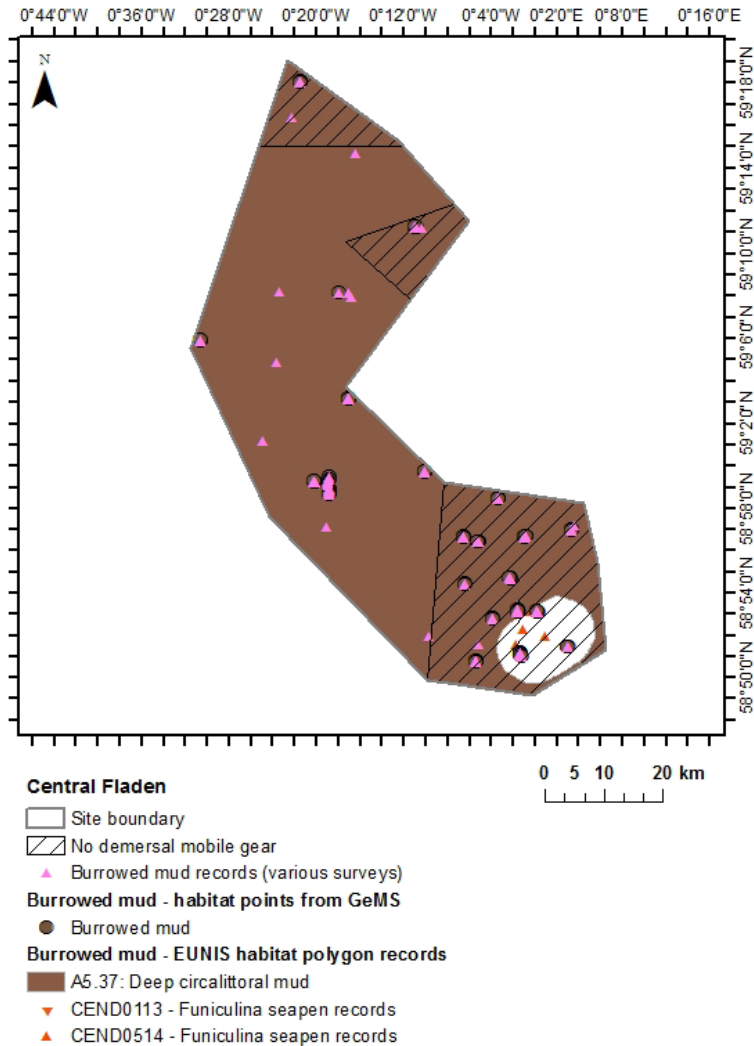


Figure 4. New evidence for Central Fladen MPA since 2017.

2.3 East Rockall Bank SAC

2.3.1 Evidence summary

Additional high confidence OSPAR, VME and Annex I Reef point records for cold-water coral reef/biogenic reef are available for East Rockall Bank SAC, which were not considered when the current proposed fisheries management measures were developed under the Joint Recommendation process in 2017. These records are not in the GeMS database but are located within the closure for demersal mobile gear only (where other demersal static gear would be permitted). These records (red and green points in Figure 6) are present on areas of bedrock reef or areas not associated with reef, and are from the following surveys:

- 2009/03 - JNCC survey (SEA SAC)
- JC060 - 2011
- 1316S
- 2005 08 RV Kommandor Jack SEA7 NW Approaches - East Rockall

Any cold-water coral reef records submitted to the VME database (like those listed above), will have undergone quality control checks and can be assumed to be equivalent to Annex I biogenic reef.

2.3.2 Recommendation

The current proposed demersal static gear closures (Figure 5) were based upon the Annex I biogenic reef layer only (which used data from SEA7 & JNCC SAC survey 2009) and did not consider additional reef records from the Annex I Reef points layer, VME database or the OSPAR threatened and/or declining database. Changes to measures are therefore recommended to reduce the risk from static gear on the additional cold-water coral reef records, which represent Annex I biogenic reef feature.

Figure 5 shows the original Joint Recommendation fisheries management proposal for the MPA, and Figure 6 shows the additional survey data that has become available since 2017.

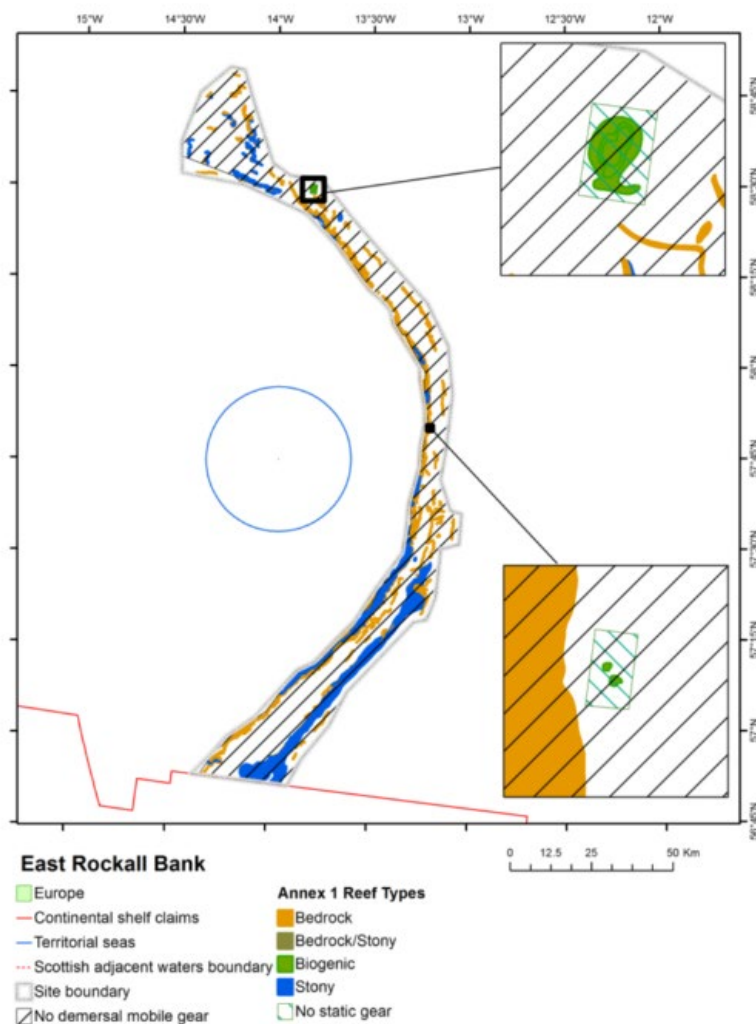


Figure 5. Proposed fisheries management measures for East Rockall Bank SAC developed under Joint Recommendations in 2017.

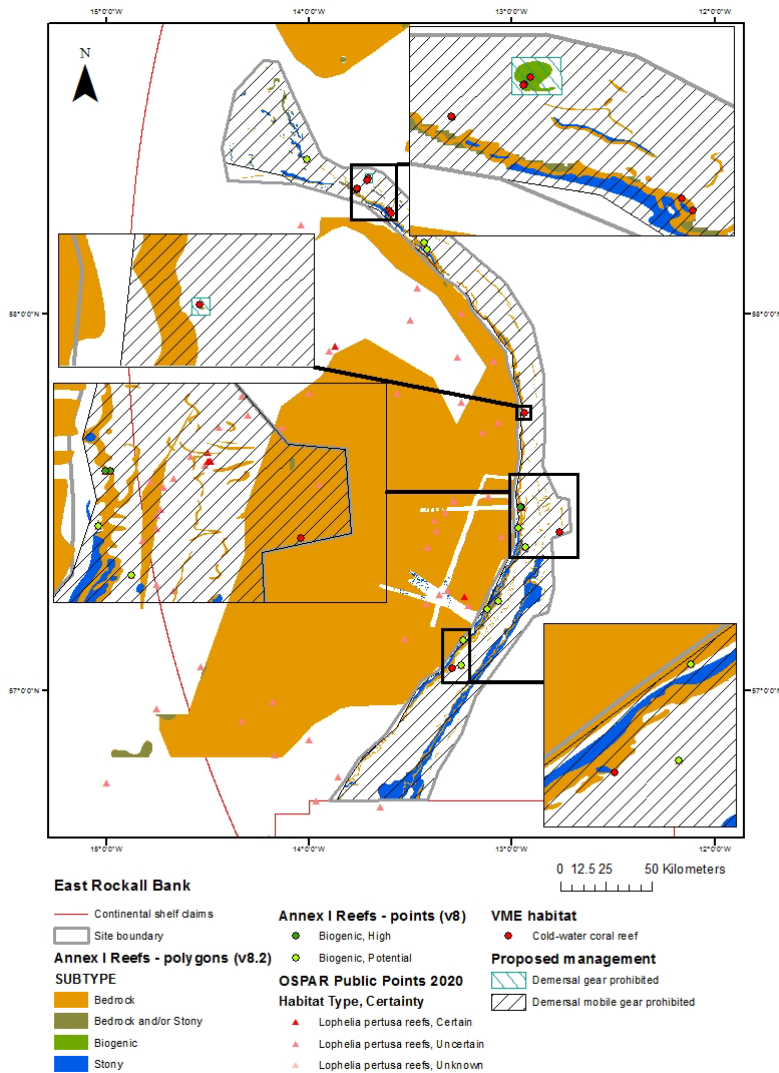


Figure 6. New evidence for East Rockall Bank SAC since 2017, showing Annex I Reef data alongside cold-water coral/*Lophelia pertusa* reef records from the VME database and OSPAR threatened and/or declining database.

2.4 East of Gannet and Montrose Fields MPA

2.4.1 Evidence summary

A new habitat map for East of Gannet and Montrose Fields MPA has been produced which substantially changes the understanding of where the sedimentary habitats occur within this site. The monitoring report has been published (McCabe et al., 2020) and JNCC recommend that this new habitat map is used. This will affect the coverage statistics for the current fisheries management proposal.

The updated habitat map can be seen in Figure 8.

2.4.2 Recommendation

Although there has been a change in the known habitat distribution, the risk to the designated features has not changed as the area where Ocean quahog records are present

remains within the proposed closure for dredge and beam gears. These gears pose the greatest risk to this feature and therefore no changes to this management proposal are likely to be needed.

Figure 7 shows the original Joint Recommendation fisheries management proposal for the MPA, and Figure 8 shows the additional survey data that has become available since 2017.

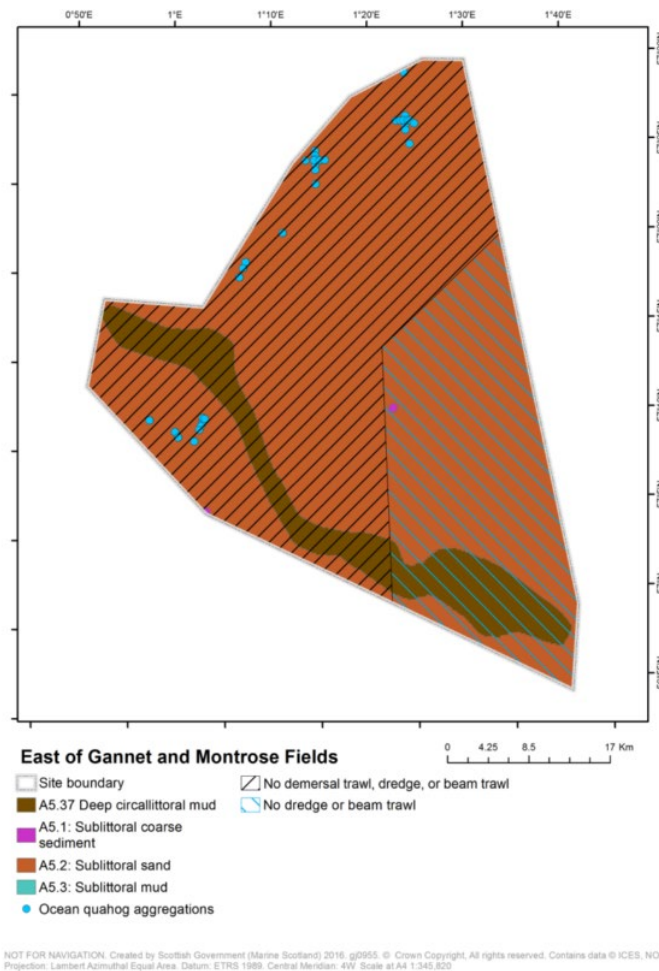


Figure 7. Proposed fisheries management measures for East of Gannet and Montrose Fields MPA developed under Joint Recommendations in 2017.

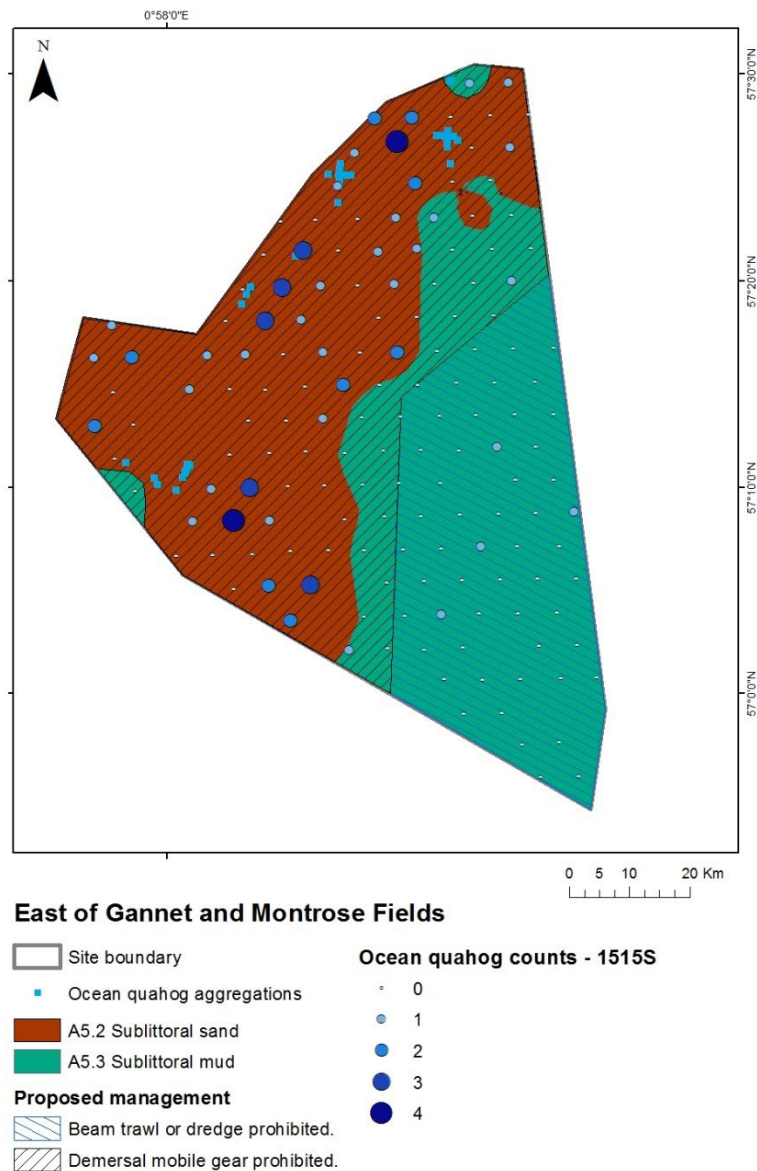


Figure 8. New evidence for East of Gannet and Montrose Fields MPA since 2017.

2.5 Faroe-Shetland Sponge Belt MPA

2.5.1 Evidence summary

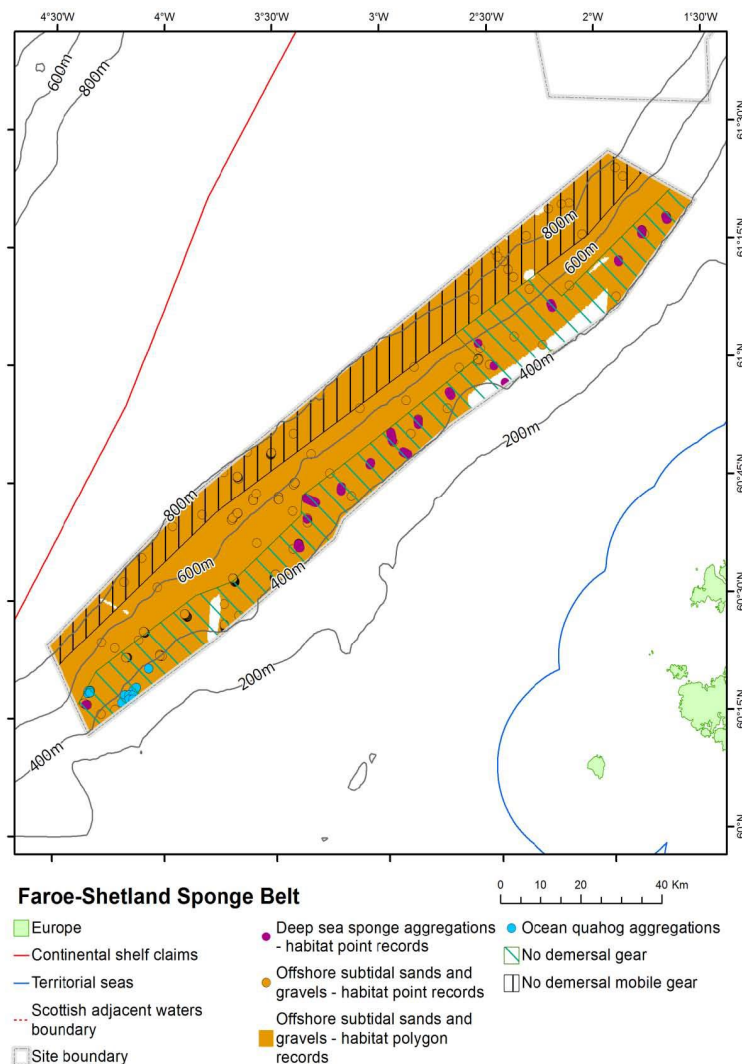
New MPA monitoring survey data from 2018 (1218S) shows multiple records of possible Deep-sea sponge aggregations outside the proposed fisheries management closure within the Faroe-Shetland Sponge Belt MPA – see points in green in Figure 10. These records indicate where there is a high number of deep-sea sponges from imagery data (which has been quality checked), however the records have not yet been confirmed as feature. A further monitoring survey took place within Faroe-Shetland Sponge Belt MPA in 2021, which collected imagery data from 48 stations in the area outwith the proposed fisheries closure (along the 500m and 550m depth contours).

Additional BP imagery data analysis (Vad, 2020) is also available for this MPA, however there is only one record outwith the proposed closure which contained two individual standing sponges and one encrusting sponge.

2.5.2 Recommendation

Without applying the feature definition guidance JNCC cannot confirm whether the 1218S survey records constitute Deep-sea sponge aggregation feature or not. It is likely that these will be classified as feature however, and ignoring the records would be high risk. The decision has been made in discussion with Marine Scotland (MS) that these records will be treated as feature for the purposes of fisheries management. MS have therefore chosen to amend the management proposal accordingly.

Figure 9 shows the original Joint Recommendation fisheries management proposal for the MPA, and Figure 10 show the additional survey data that has become available since 2017.



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Figure 9. Proposed fisheries management measures for Faroe-Shetland Sponge Belt MPA developed under Joint Recommendations in 2017.

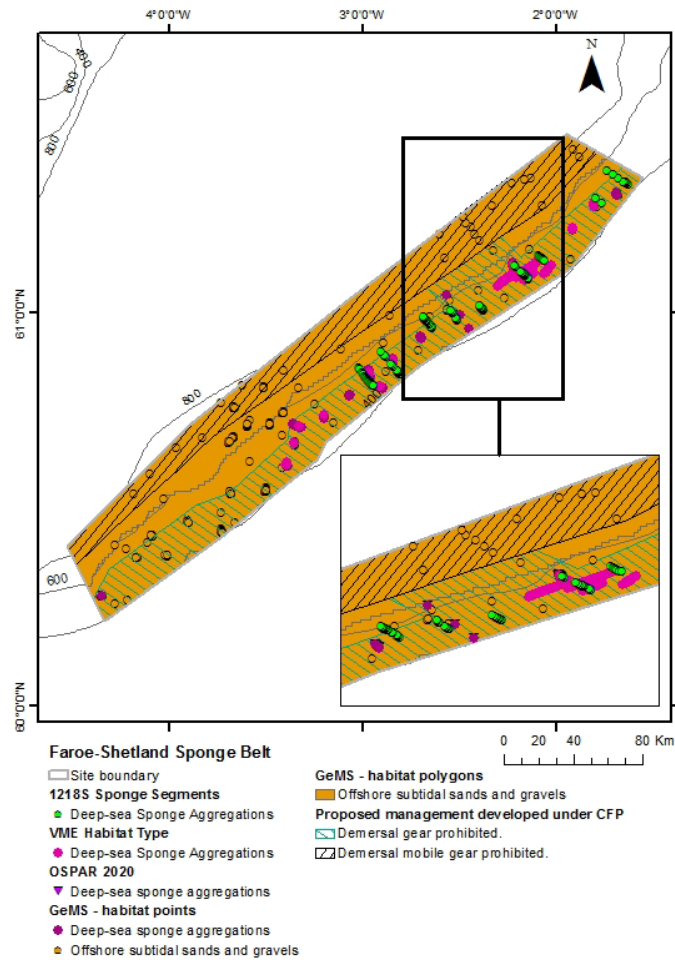


Figure 10. New evidence for Faroe-Shetland Sponge Belt MPA since 2017, showing a close up of the areas with likely Deep-sea sponge aggregations identified from the 1218S imagery data. The original fisheries management proposal from 2017 is shown alongside.

2.6 Geikie Slide and Hebridean Slope MPA

2.6.1 Evidence summary

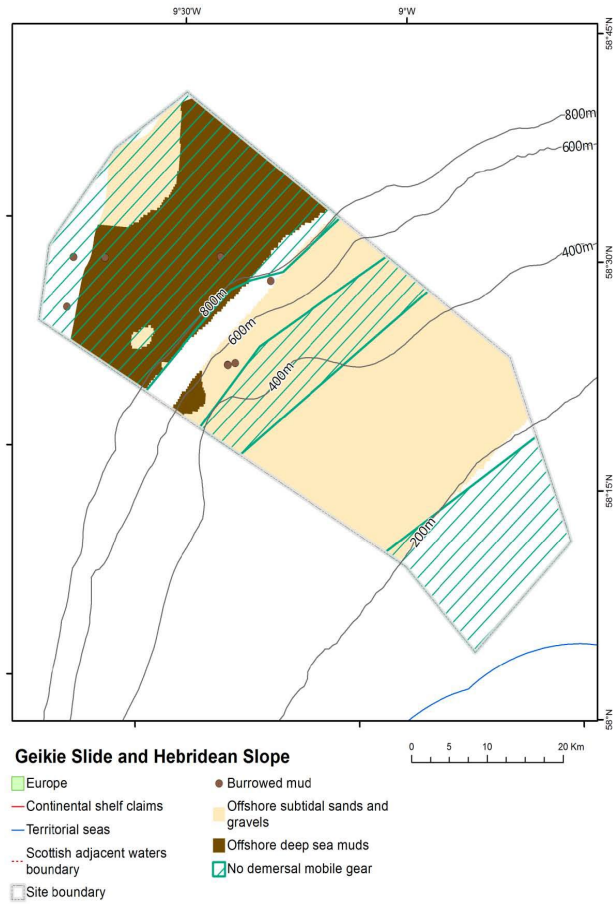
New survey data is available from the MPA monitoring survey to Geikie Slide and the Hebridean Slope MPA in 2016 (1016S) (Ferguson et al., 2022), which includes grabs and imagery. However, data analysis did not show any change in the feature extent (Figure 12).

Except for a single dead cup coral record, all VME indicator records within the site are located within the deepest area of the site and are hence covered by the proposed closures.

2.6.2 Recommendation

No changes to the management proposal are likely to be needed as there is no change in feature extent.

Figure 11 shows the original Joint Recommendation fisheries management proposal for the MPA, and Figures 12 shows the additional survey data that has become available since 2017.



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Figure 11. Proposed fisheries management measures for Geikie Slide and the Hebridean Slope MPA developed under Joint Recommendations in 2017.

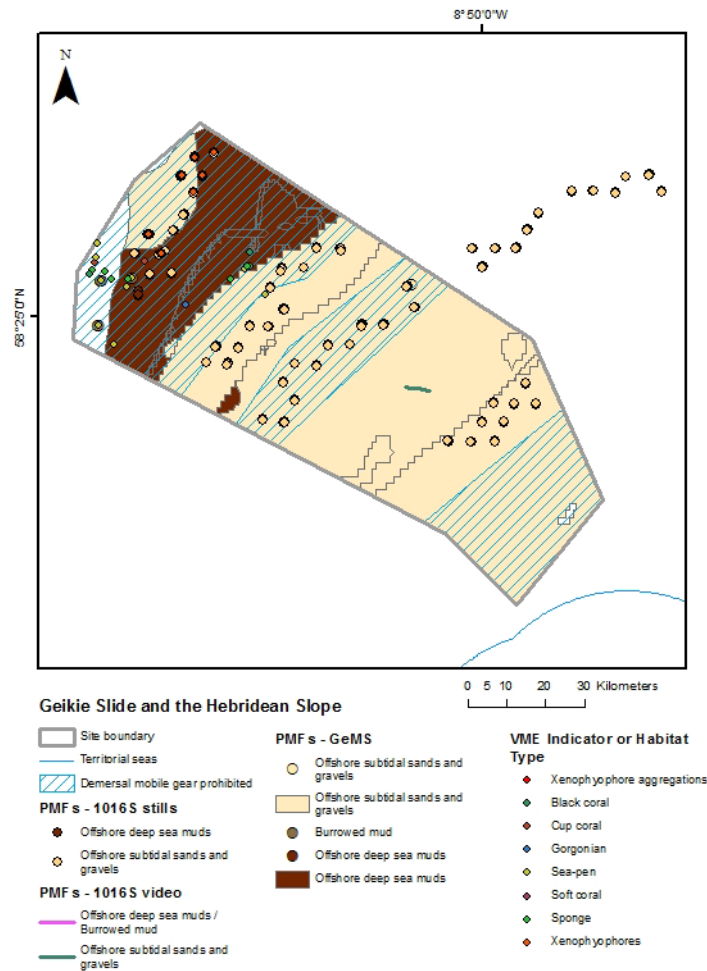


Figure 12. New evidence for Geikie Slide and the Hebridean Slope MPA since 2017.

2.7 North-east Faroe-Shetland Channel MPA

2.7.1 Evidence summary

New survey data from the MPA monitoring survey to North-east Faroe Shetland Channel MPA in 2017 (1517S) (Gallyot et al., 2022) found 10 occurrences of Deep-sea sponge aggregations entirely within the proposed management box in the south of the site (these records are also in the VME database). Additional Deep-sea sponge aggregation records within the site are also available from OSPAR. One of the OSPAR data points is located within the closure for demersal mobile gear only (where other demersal static gear is permitted) and can be seen in Figure 14, however there is limited confidence in this record:

- **Green** point (on area of Offshore deep sea muds) – OSPAR record of deep-sea sponge aggregations – uncertain record from 1999 determined by Heriot-Watt University. Data owner is DBSI.

2.7.2 Recommendation

No changes to the management proposal likely to be needed as there is no change in feature extent.

Figure 13 shows the original Joint Recommendation fisheries management proposal for the MPA, and Figure 14 shows the additional survey data that has become available since 2017.

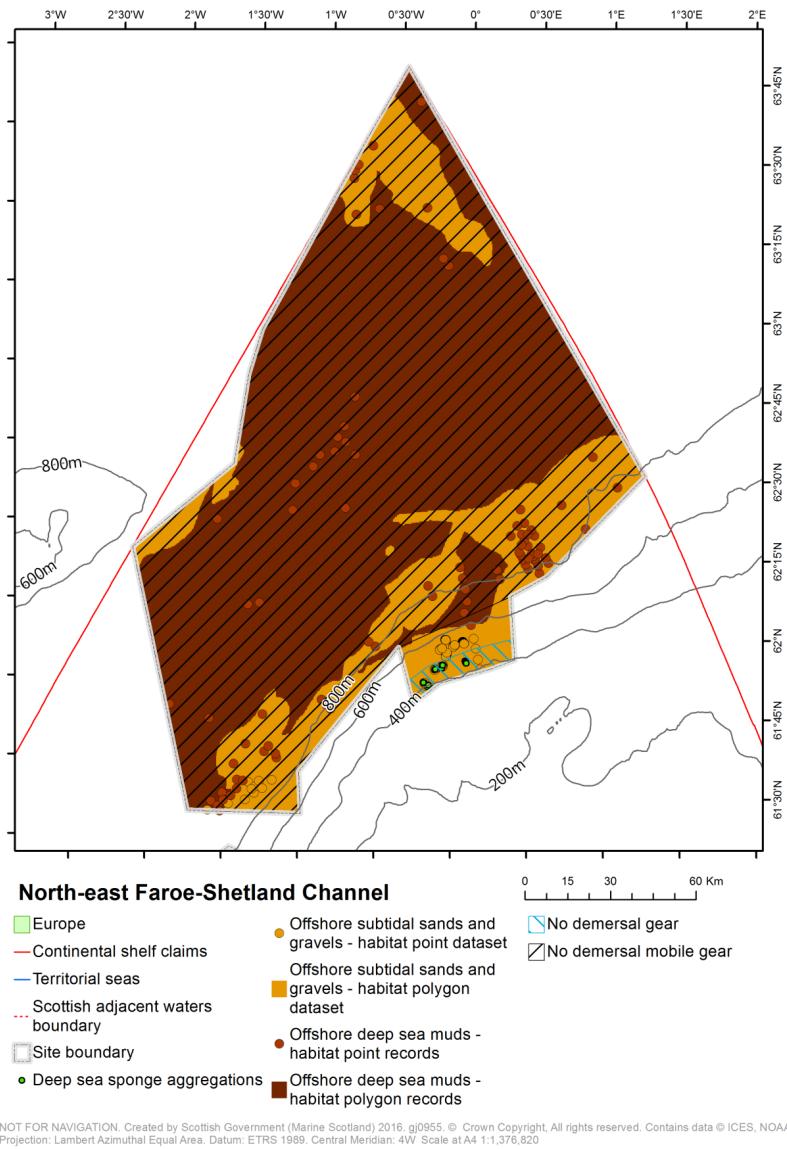


Figure 13. Proposed fisheries management measures for North-east Faroe-Shetland Channel MPA developed under Joint Recommendations in 2017.

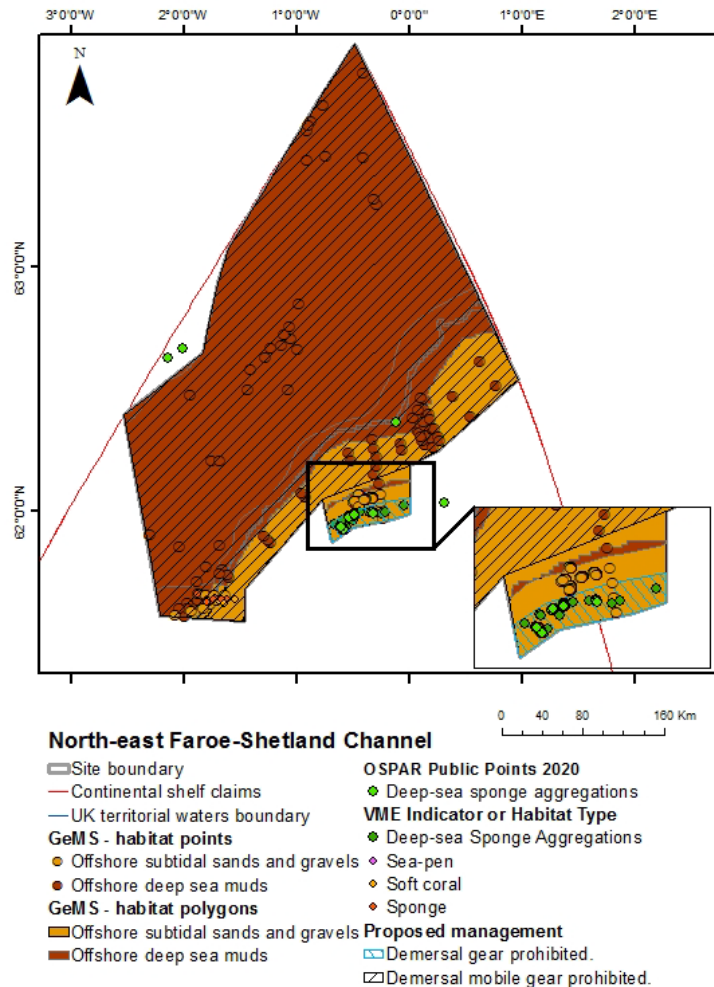


Figure 14. New evidence for North-east Faroe-Shetland Channel MPA since 2017, including a close-up of the southern section of the MPA.

2.8 Norwegian Boundary Sediment Plain MPA

2.8.1 Evidence summary

Additional records for the Ocean quahog feature within Norwegian Boundary Sediment Plain MPA are available from the 1515S MPA monitoring survey, for which the monitoring report was published in 2020 (McCabe et al.). Records of this feature now extend across the whole site (Figure 16).

2.8.2 Recommendation

No changes to the management proposal are likely to be needed as there is no change in the risk to the Ocean quahog designated feature. The proposed closure area would prohibit dredge and beam trawls, which pose the greatest risk to Ocean quahog.

Figure 15 shows the original Joint Recommendation fisheries management proposal for the MPA, and Figure 16 shows the additional survey data that has become available since 2017.

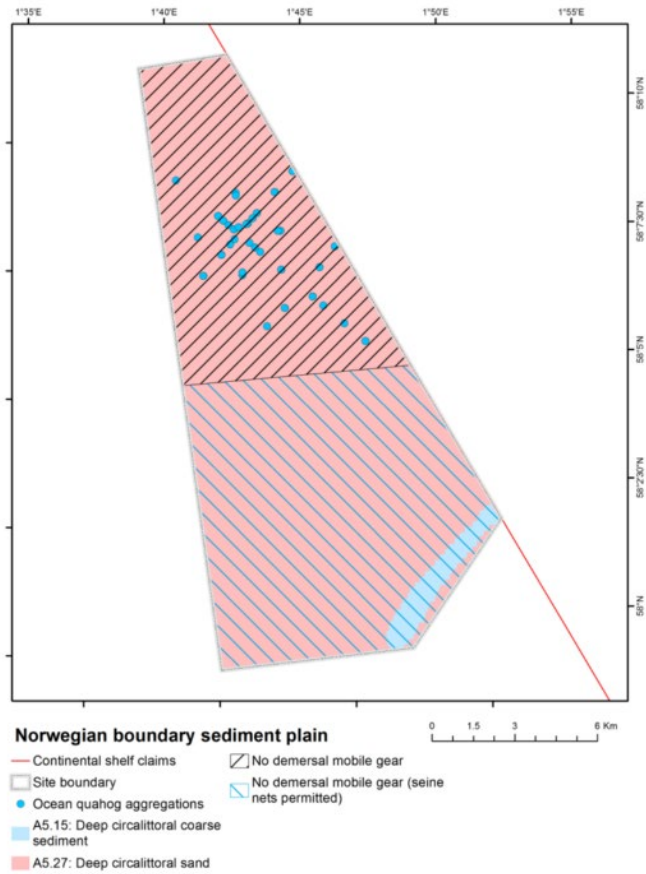


Figure 15. Proposed fisheries management measures for Norwegian Boundary Sediment Plain MPA developed under Joint Recommendations in 2017.

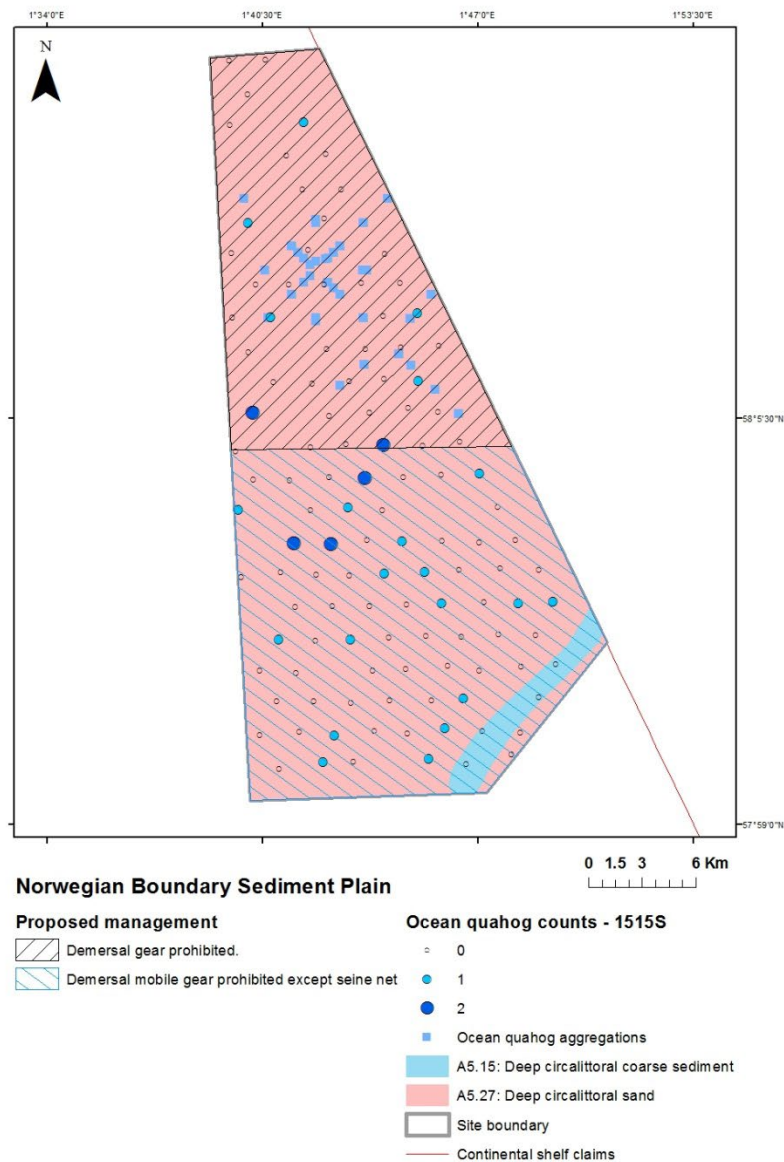


Figure 16. New evidence for Norwegian Boundary Sediment Plain MPA since 2017.

2.9 Pobie Bank Reef SAC

2.9.1 Evidence summary

An updated Annex I Reef habitat layer (v8.2) is available for Pobie Bank Reef SAC, however the extent of reef within the site has not changed since the original fisheries management proposal was developed under the Joint Recommendations in 2017. This original proposal already utilised the most up to date habitat map for the site (despite this not being shown in the Joint Recommendations map, Figure 17).

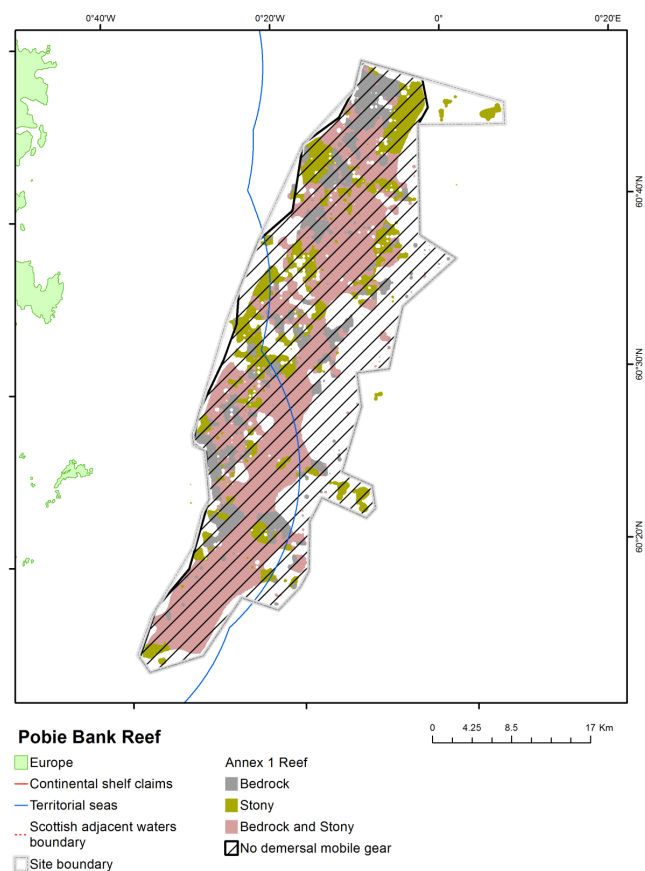
An MPA monitoring survey to the site took place in 2020 (1220S), however imagery data collected outwith the proposed fisheries management closure in the west of the site did not show presence of reef. Sidescan data collected in the southwest of the site shows areas of potential yet unconfirmed reef outside the proposed closure (see Figure 18). Please note,

this is a visual interpretation of the sidescan data, and habitat maps will be produced based on full coverage sidescan, incorporating groundtruthing video and stills data, as part of the monitoring report.

2.9.2 Recommendation

The existing fisheries management proposal already reflects the most up to date version of the Annex I Reef habitat layer, and the 1220S MBES data only shows areas of potential unconfirmed reef, therefore Marine Scotland are not planning to amend the management proposals for Pobie Bank Reef SAC.

Figure 17 shows the original Joint Recommendation fisheries management proposal for the MPA, and Figure 18 shows the additional survey data that has become available since 2017.



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Figure 17. Proposed fisheries management measures for Pobie Bank Reef SAC developed under Joint Recommendations in 2017. Note that the fisheries management proposal used a more updated version of the Annex I Reef layer than that shown in this Joint Recommendations map.

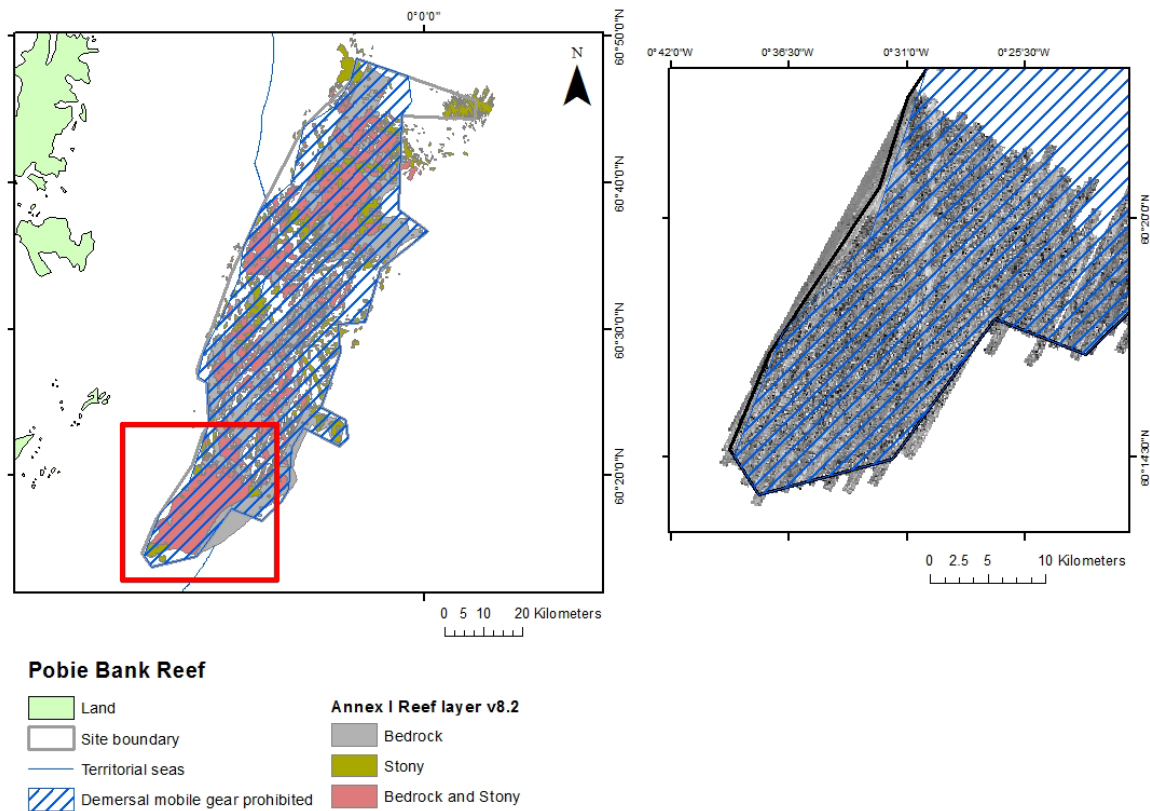


Figure 18. New evidence for Pobie Bank Reef SAC since 2017. This includes the Annex I Reef layer (v8.2) and the sidescan data from the 1220S survey, which can be used to delineate areas of potential stony reef.

2.10 Stanton Banks SAC

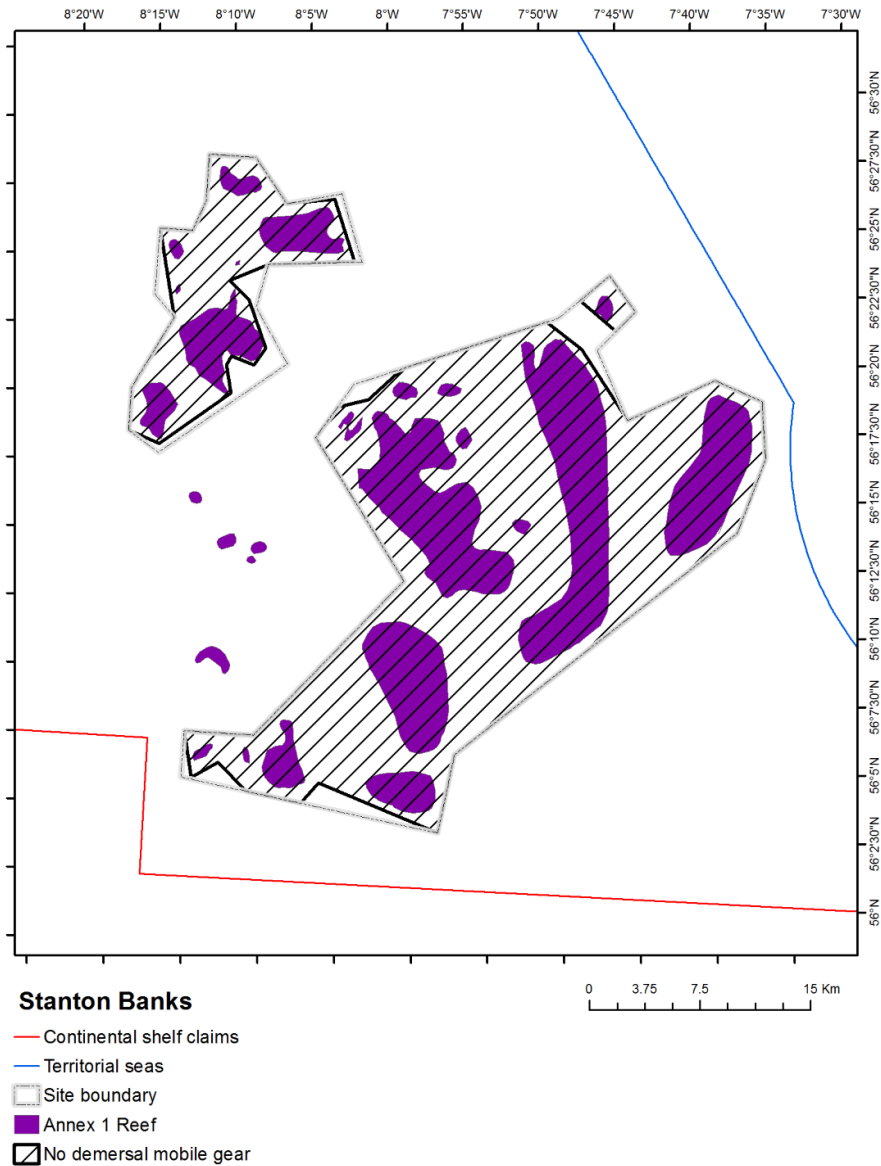
2.10.1 Evidence summary

An updated Annex I Reef habitat layer is now available for Stanton Banks SAC (v8.2), which shows areas of high confidence bedrock reef (see areas of purple in Figure 20) outside the proposed fisheries management closure in various locations around the site (e.g. to NW and SE of main bank, and E of small bank).

2.10.2 Recommendation

Changes to fisheries management measures are recommended to reduce the risk for areas of high confidence Annex I bedrock reef.

Figure 19 shows the original Joint Recommendation fisheries management proposal for the MPA, and Figure 20 shows the additional survey data that has become available since 2017.



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Figure 19. Proposed fisheries management measures for Stanton Banks SAC developed under Joint Recommendations in 2017. Annex I Reef map used is v5 (2008) from original site designation.

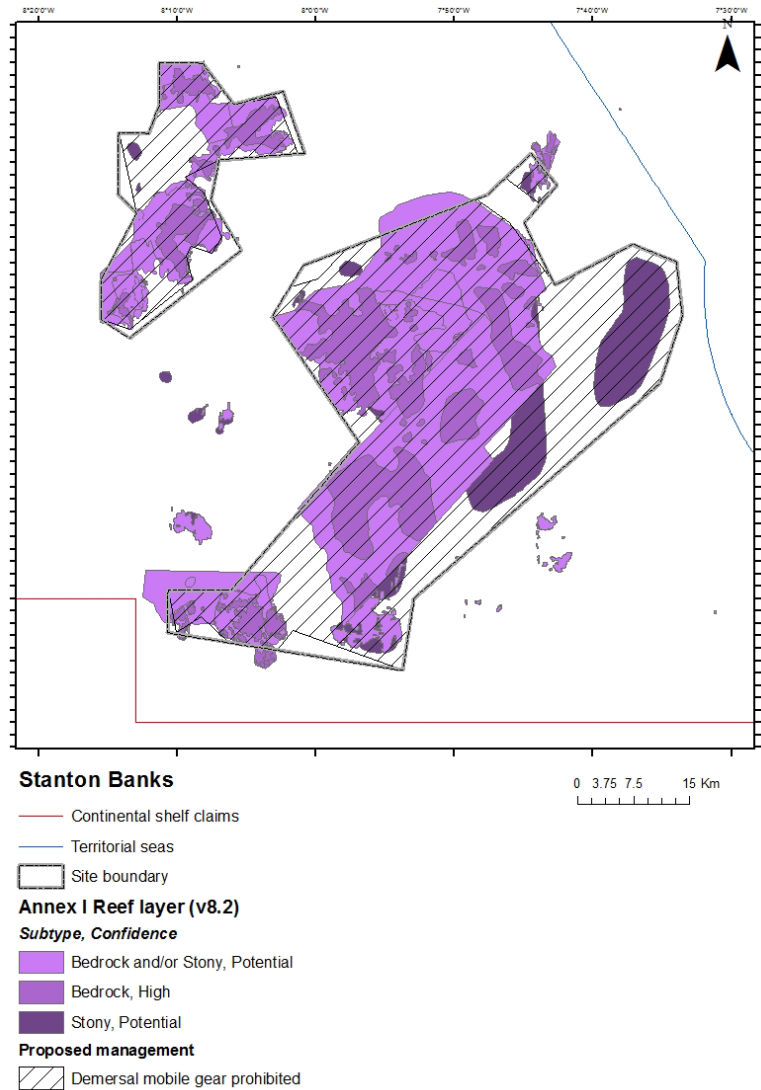


Figure 20. New evidence for Stanton Banks SAC since 2017.

2.11 West Shetland Shelf MPA

2.11.1 Evidence summary

New MPA survey data is available from 2017 and 2019 (1517S and 1219S), which includes grabs, multibeam and imagery. This data has not yet been published and the monitoring report is ongoing, however provisional analysis of the data does not show any change in the feature extent (Figure 23). A further monitoring survey is planned for 2022.

2.11.2 Recommendation

There is no change in feature extent based on new survey data, so no changes to the proposed management measures are likely to be needed from an evidence perspective. However, there are currently voluntary measures in place within the MPA (Figure 22), so discussions with stakeholders on the management proposals will be needed for this site.

Figure 21 shows the original Joint Recommendation fisheries management proposal for the MPA, Figure 22 shows the industry-led voluntary measures agreed in March 2020, and Figure 23 shows the additional survey data that has become available since 2017.

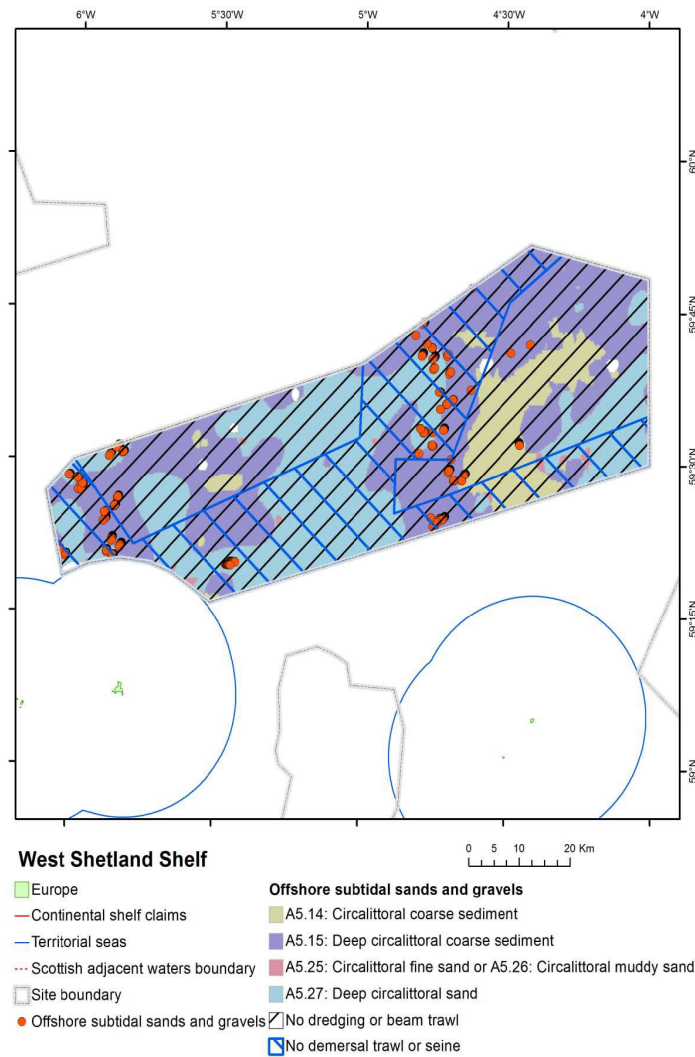


Figure 21. Proposed fisheries management measures for West Shetland Shelf MPA developed under Joint Recommendations in 2017.

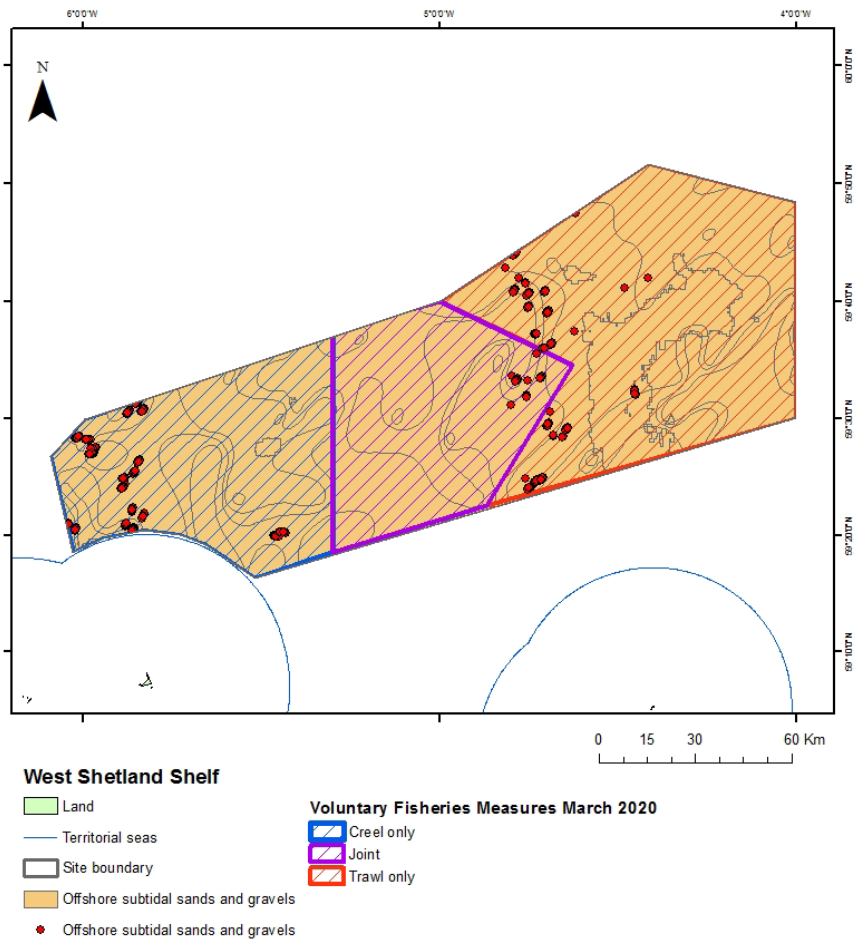


Figure 22. Industry-led voluntary measures, agreed in March 2020, delineating areas within the site where only static fishing is allowed (blue hatch), only mobile fishing is allowed (red hatch) or access is shared (purple hatch).

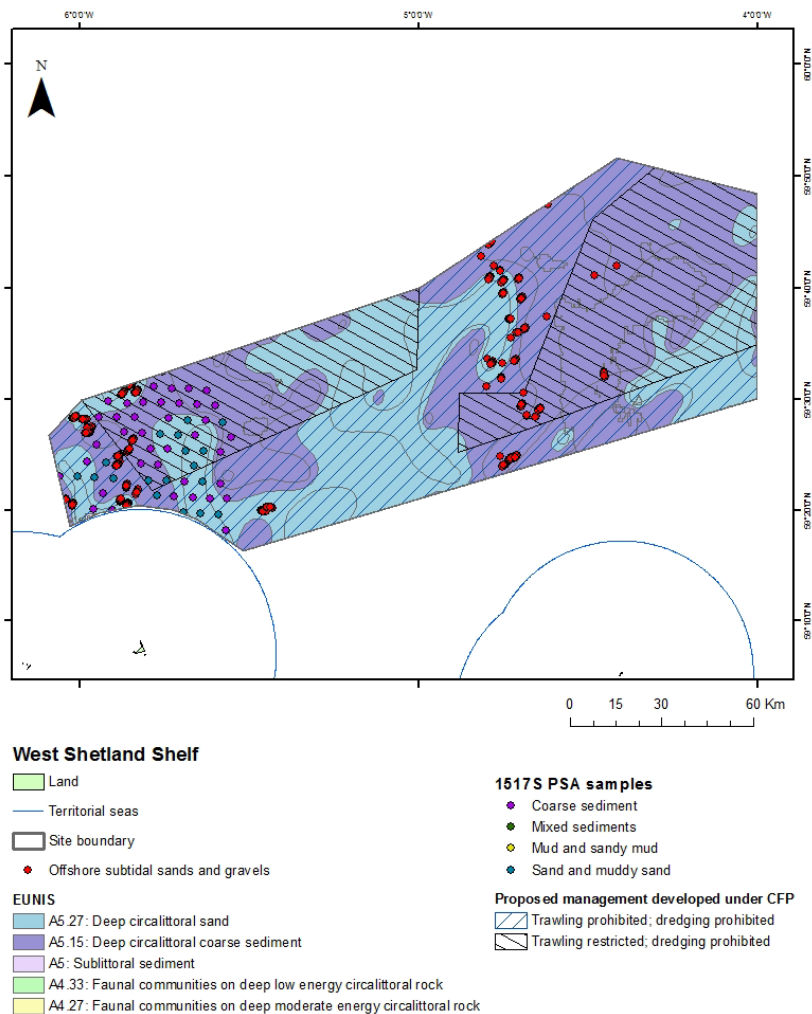


Figure 23. New evidence for West Shetland Shelf MPA since 2017.

2.12 Wyville Thomson Ridge SAC

2.12.1 Evidence summary

The Annex I Reef habitat layer for Wyville Thomson Ridge SAC has been updated since the Joint Recommendations (now v8.2), however the fisheries management proposal closely aligns with the new Annex I reef extent (Figure 25).

MPA monitoring surveys to Wyville Thomson Ridge SAC took place in 2012, 2017 and 2018 (1512S, 1517S and 1218S). These surveys found records of VME indicator species (stony corals and octocorals). The monitoring reports for the 1218S and 1517S surveys are ongoing, so the data was not available for inclusion in this evidence audit, however the 1512S data is included within the ICES Vulnerable Marine Ecosystems (VME) database and is presented below.

A number of the VME indicator species records observed during the 1512S survey, are located outside the proposed fisheries management closures. These records were recorded on low-quality stony reef or on mixed sediment, so it cannot be assumed that these octocoral or stony coral records are indicative of Annex I Reef feature. Other information from this area (Figure 25) shows that either none, or only low quality, Annex I Reef is present. Therefore,

these VME indicator records are unlikely to be associated with Annex I Reef feature, for which the MPA is designated. A list of the records are provided below and relate to the points shown within Figure 25:

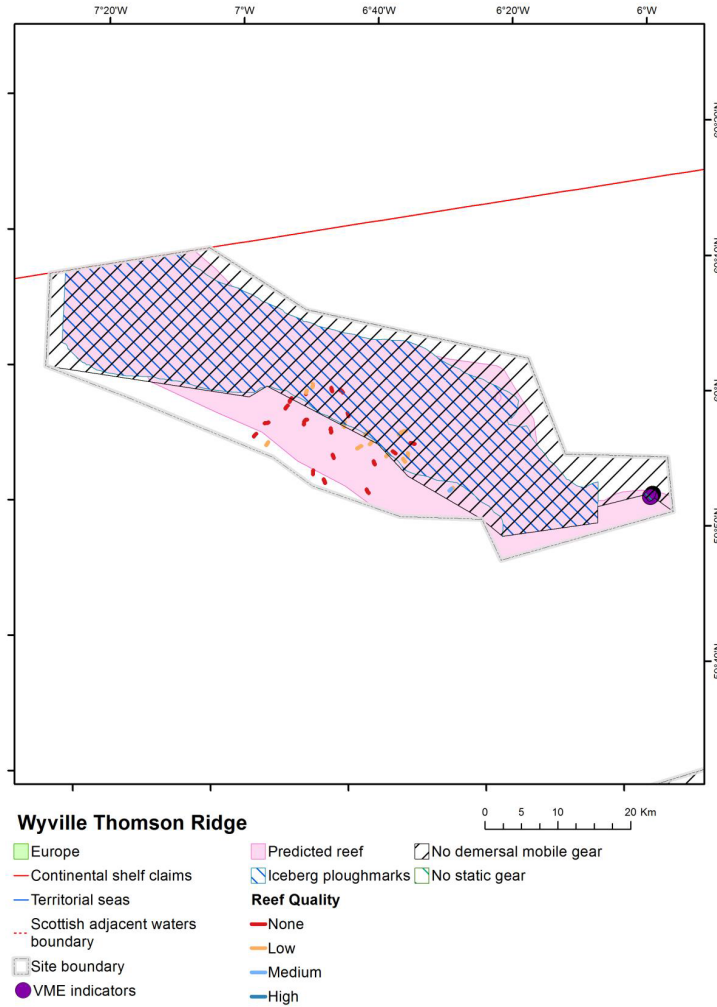
- **Red** squares and triangles – 1512S survey – four *Lophelia pertusa* and *Madrepora oculata* records along video transect on mixed substrata
- **Pink** diamond – 1512S – one Scleractinia record (possible *Lophelia*), Low stony reef (mixed sediment)
- **Purple** dot - 1512S - Octocoral records, mixed sediment and low quality stony reef
- **Yellow** dot – 1512S – three *Lophelia pertusa* records, mixed sediment and low quality stony reef (some medium quality points).

2.12.2 Recommendation

No changes to the MPA fisheries management proposal are likely to be needed as the additional VME indicator records are unlikely to be associated with Annex I Reef feature. Note that these VME records are also likely be protected under any future VME closures which will be progressed separately under the Part 5, Chapter 7 of The Common Fisheries Policy and Aquaculture (Amendment etc.) (EU Exit) Statutory Instrument (S.I.) 2019 No. 753, which converts Council Regulation (EU) 2016/2336 into UK law⁶.

Figure 24 shows the original Joint Recommendation fisheries management proposal for the MPA, and Figure 25 shows the additional survey data that has become available since 2017.

⁶ Under this legislation, in order to minimise the impact of fishing activities occurring in deep-sea waters on VMEs, a list of areas where VMEs occur or are likely to occur should be established where fishing with bottom gear is prohibited.



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 Projection: Lambert Azimuthal Equal Area. Datum: ETRS 1989. Central Meridian: 4W Scale at A4 1:496,990

Figure 24. Proposed fisheries management measures for Wyville Thomson Ridge SAC developed under Joint Recommendations in 2017. This uses v7 of the Annex I Reef layer.

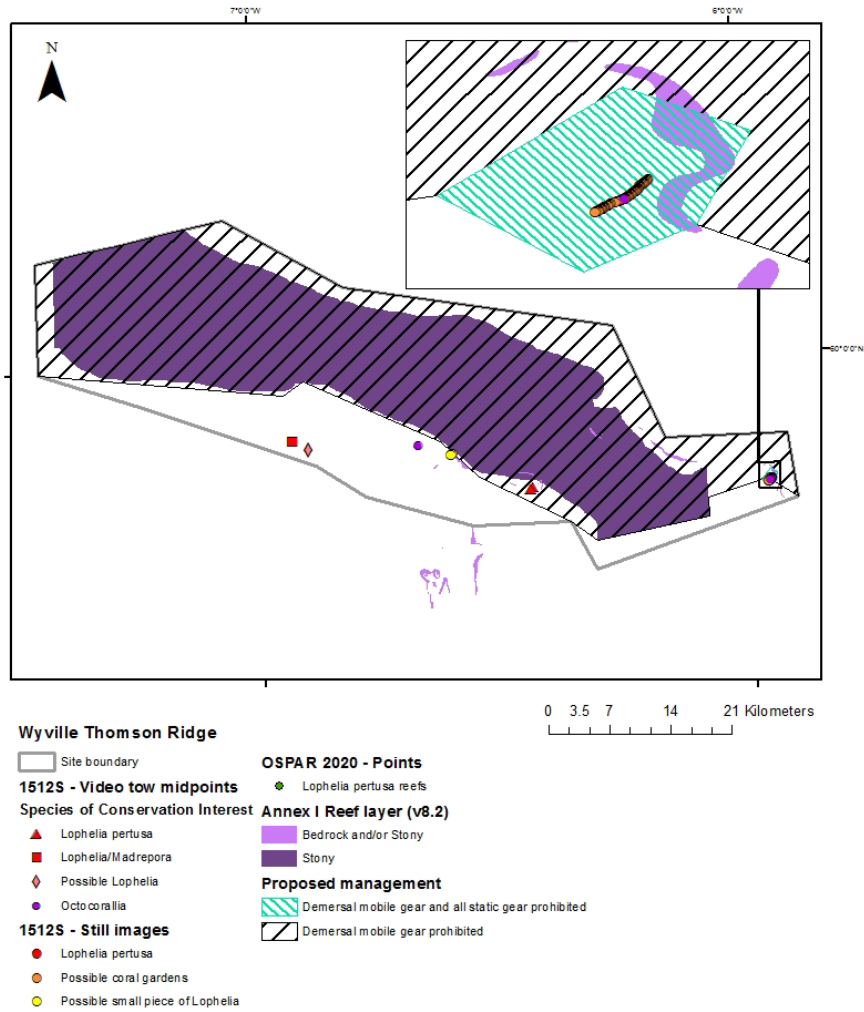


Figure 25. New evidence for Wyville Thomson Ridge SAC since 2017. This includes an updated Annex I Reef layer (v8.2). Inset map shows the current proposed closure for static and demersal gears, which encompasses an area with point records showing high-quality Annex I stony reef with VME indicator species.

3 Conclusions

Based on the new evidence presented above, JNCC recommends that amendments are made to the original Joint Recommendation fisheries management proposals for the following sites:

- East Rockall Bank SAC
- Faroe-Shetland Sponge Belt MPA

Furthermore, discussions with stakeholders regarding the fisheries management proposals for West Shetland Shelf MPA are likely to be needed in light of the voluntary measures that are currently in place within the site.

Changes to the proposed fisheries management measures will be discussed with stakeholders and this document is intended to support these discussions. When developing management measures, JNCC would advise that fisheries managers and stakeholders consider the levels of risk to the designated features, where there are interactions with fishing activities.

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