

Natura 2000 Fisheries management options paper
PISCES REEF COMPLEX SPECIAL AREA OF CONSERVATION
MAY 2014

This is a working draft which has been produced to support early discussions with stakeholders about management.

1. Management Options Summary

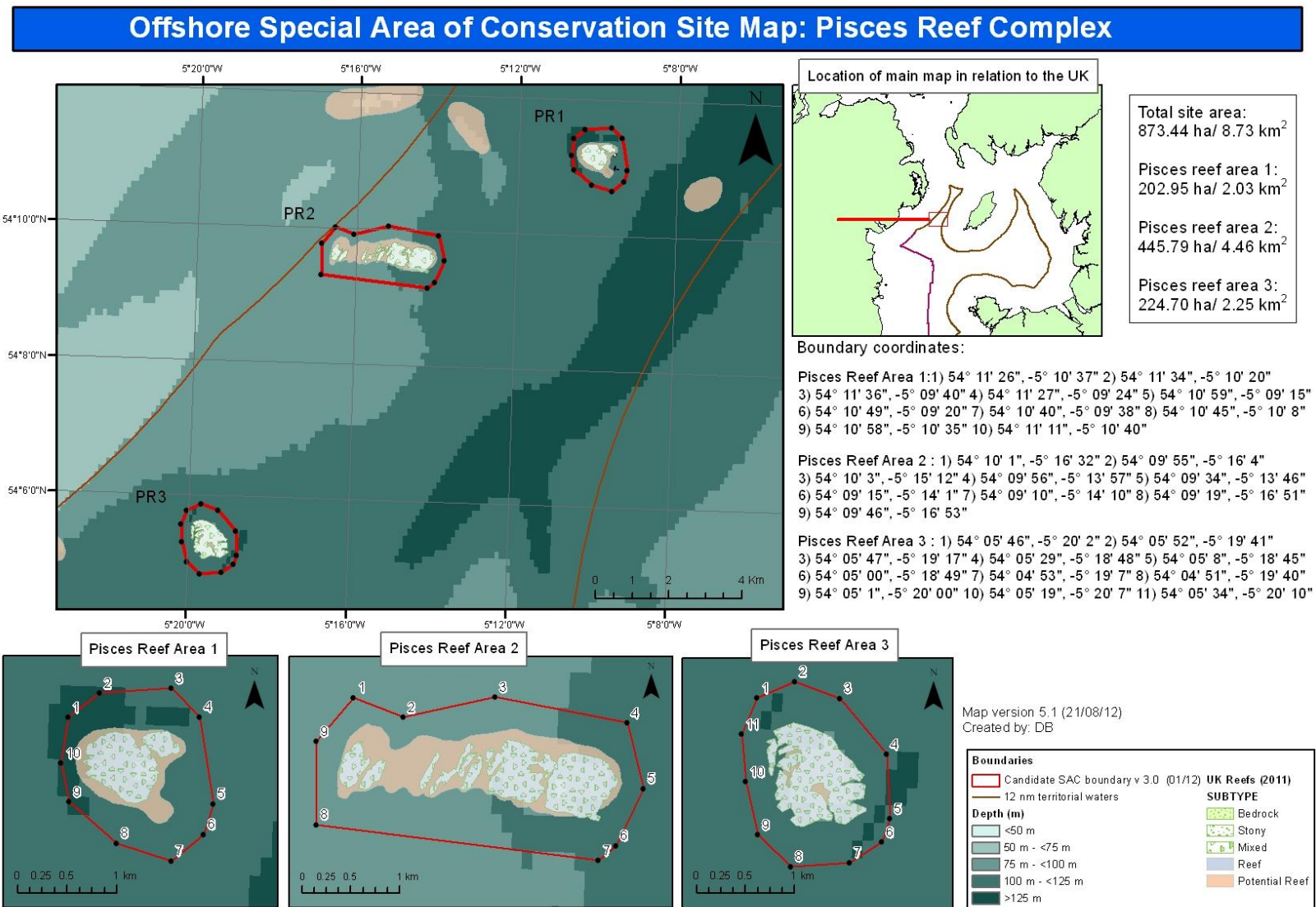
Fishing Activity	Management options
Mobile bottom contact gears	<p>No additional management: There is a significant risk of not achieving the conservation objectives for the reef feature.</p> <p>Reduce/limit pressures: This option would reduce the risk of degradation to the reef feature as a result of direct impact from fishing activities. Appropriate measures could include exclusion of mobile bottom contact gears over the main areas of bedrock and stony reef, allowing fishing to continue in fishable areas around the features. This implies that a buffer zone may not always be applied around the features and there would therefore be a risk of localised damage to the structure and function of reef communities through accidental contact from fishing gear. The location of areas to be covered by management restrictions would be decided in consultation with stakeholders.</p> <p>Remove/avoid pressures: This option would reduce the risk of degradation to any reef feature within the site boundary to the lowest possible levels. Restrictions would be required for all mobile bottom contact gears within the full extent of the site boundary. The site boundary already includes a buffer zone of 400m from the reef features, based on a ratio of 3:1 fishing warp length to depth, to reduce any risk of accidental contact with the feature. The site boundary is made up of three separate polygons; the buffer has been applied individually to each of the reef features of the site.</p>
Static bottom contact gears	<p>No additional management: This option is considered to be sufficient for bottom contacting static gear to achieve the conservation objectives for the reef feature. However, if monitoring showed evidence of detrimental effects as a result of static gear activity in the future, additional management may be required.</p> <p>Reduce/limit pressures: This option would further reduce the risk of not achieving the conservation objectives for the reef feature. If fishing activity were to rise to levels at which damage was occurring, appropriate management could include partial closure of the feature and/or limits on the amount of gear that can be deployed.</p>

2. Introduction

The Pisces Reef Complex is located in the western Irish Sea, in the north-west mud basin. It is approximately midway between the Isle of Man and the coast of Northern Ireland. The area consists of an extensive mud plain through which three areas of Annex I bedrock and boulder-dominated stony reef protrude (Pisces Reef area 1 - PR1, Pisces Reef area 2 - PR2 and Pisces Reef area 3 - PR3). They are situated apart from each other at distances of between 5.5 km and 14 km. While the Special Area of Conservation (SAC) consists of the three reef features, the boundary has been delineated to exclude the areas of muddy sediment in between. The average seabed depth within the site boundary is approximately 100 m with a maximum of 134 m and a minimum of 70 m at the peaks of the rocky reef outcrops. The deepest depths are within the scour pits which encircle the outcropping rocky reefs.

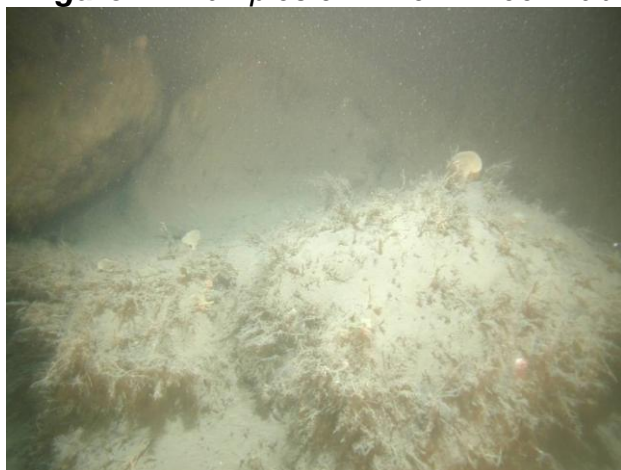
The three extruding reefs, which rise 15-35m above the surrounding seabed, are composed of tertiary igneous rock and boulders. The bedrock on the reef top has a patchy veneer of muddy sediment, due to sediment deposition from a localised scouring process. The reefs support a diverse community of brachiopods, ascidians, hydroids, sponges and fish. In particular, the mosaic of bedrock and stony reef provide a myriad of ledges and habitat niches. Of note is the occurrence of the *Diphasia alata* hydroid community. The difference in species composition and abundance between the reefs and the surrounding mud plain highlights the importance of the reefs in providing a habitat for numerous species. The area of muddy sediment around the rocky reefs supports a high density of *Nephrops* burrows and a major *Nephrops norvegicus* fishery.

Figure 1. Pisces Reef Complex site map

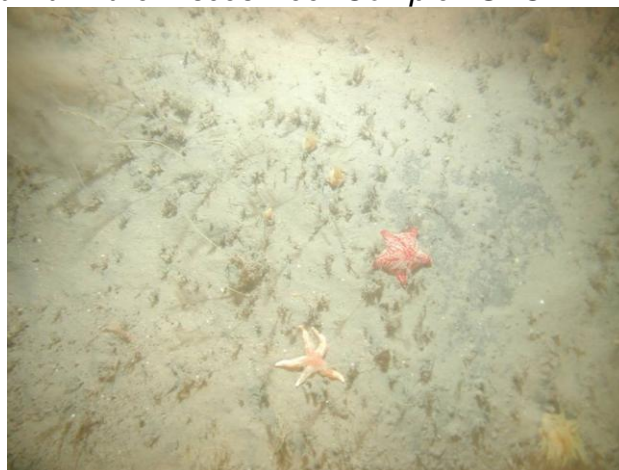


Site map projected in UTM (Zone 30N, WGS84 datum). Seabed habitat derived from DTI SEA data. This product has been derived in part from material obtained from the UK Hydrographic Office with the permission of the Controller of Her Majesty's Stationery Office and UK Hydrographic Office (www.ukho.gov.uk). UK Defra Astrium DEM 2012 bathymetry. NOT TO BE USED FOR NAVIGATION. The exact limits of the UK Continental Shelf are set out in orders made under section 1(7) of the Continental Shelf Act 1964 (© Crown Copyright). Map copyright JNCC 2012.

Figure 2. Examples of Annex I ‘Reef’ habitat within the Pisces Reef Complex SAC



An example of silty Annex I bedrock and stony reef, with a dense turf of the hydroid *Diphasia alata*. The cup sponge *Axinella infundibuliformis* is also evident (© DTI, 2004)



An area of bedrock with delicate hydroids, the sponge *Polymastia boletiformis* and the starfish *Asterias rubens* and *Porania pulvillus* (© DTI, 2004)

3. Supporting survey data

The Pisces Reef Complex SAC was designated on the basis of information from a number of sources.

A 1969 IGS (Now British Geological Survey: BGS) geophysical survey (Eden et al. 1971) described the area as a mud plain with protruding igneous rock. In 1971 an IGS manned submersible dive (Eden et al. 1973) found rocks lying on the seabed in the vicinity of a seabed scarp. Hard and soft substrate associated fauna were also described.

The Strategic Environmental Assessment, Area 6 (SEA6), of the Irish Sea was carried out in 2004. This included a series of seabed surveys aboard the SV *Meridian* and the SV *Kommander Jack* (Judd, 2004). A range of acoustic techniques were used, including multibeam, sidescan sonar and sub-bottom profiler. Still and video imagery was also acquired. The geophysical survey results showed a substantial rock outcrop lying within an area of soft, muddy sediments. Preliminary analysis of the video and still imagery confirmed the presence of bedrock/stony reef and identified the major faunal communities.

Scour depressions have been recorded surrounding the rocky outcrops (Holmes & Tappin, 2005). Further work on this localised scouring, caused by the reefs increasing the energy of near-bottom currents, was reported by Callaway et al. (2009). This latter study was part of a wider programme of work undertaken by the MESH North Western Shelf Consortium.

Two further surveys, also part of the MESH NW Shelf Consortium (AFBI, 2005; Marine Institute, 2006), provided multibeam, Acoustic Ground Discrimination System, sidescan sonar, sub-bottom profiler and video data in the area of Pisces Reef. Survey work was also undertaken by AFBI in 2007 and 2008, when acoustic data (multibeam, AGDS and sidescan sonar) were acquired, along with video

4. Protected features and conservation objectives

The Pisces Reef Complex SAC contains the Annex I habitat 'Reefs'.

Conservation objectives set out the desired quality of the protected features within each Natura 2000 site. They are a set of site specific objectives to be met in order for a site to maximise its contribution to Favourable Conservation Status under the EU Habitats Directive.

The conservation objectives for the Pisces Reef Complex SAC are to, subject to natural change, maintain the reef in favourable condition such that:

- The natural environmental quality is maintained;
- The natural environmental processes are maintained; and
- The extent, physical structure, diversity, community structure and typical species representative of the reef in the Irish Sea are maintained.

See the Pisces Reef Complex conservation objectives and advice on operations for further information (version 3, JNCC, 2012b).

5. Roles

The role of JNCC is to advise the UK Government on management options for the Pisces Reef Complex SAC. In doing this, our aim is to ensure the conservation objectives for the protected features are met. Fisheries management in areas outside the UK's 12 nautical miles fisheries limit is an exclusive competence of the European Union and management can only be implemented through the provisions of the Common Fisheries Policy (CFP). This requires all Member States with a direct management interest to agree proposed management measures. The Marine Management Organisation (MMO) will lead discussions on management with stakeholders. They will consider JNCC's advice and will lead on the development of specific management measures. Defra will be responsible for making recommendations to Ministers on these measures and drafting the fisheries management request to the European Commission.

Stakeholders can provide additional evidence to support the development of management options, including local knowledge of the environment and activities. Discussions with stakeholders will be one way of highlighting the implications of any management options to JNCC, MMO and Government. This will contribute to the development of well-designed and effective management measures.

6. Effects of fishing on the feature

Whilst it is unlikely that mobile bottom contact gear can affect the long-term natural distribution of **bedrock and stony reef** features, there is evidence to indicate that the use of bottom contacting mobile gears can impact the structure and function of the habitat and the long term survival of its associated species.

The use of towed fishing gears is likely to cause damage or death of fragile, erect species, such as sponges and corals (Løkkeborg 2005, Freese et al. 1999). Other species such as hydroids, anemones, bryozoans, tunicates and echinoderms may also be vulnerable (McConnaughey et al. 2000, Sewell and Hiscock 2005). Where fragile, slow growing species occur, even low levels of fishing have the potential to change the structure and function of the habitats and may result in the loss of some characteristic species.

Whilst it is unlikely that mobile bottom contact gear can affect the long-term natural distribution of bedrock and stony reef features, there is evidence to indicate that the use of bottom contacting mobile gears can impact the structure and function of the habitat and the long term survival of its associated species. Mechanical impacts of static gear (e.g. weights and anchors hitting the seabed, hauling gear over seabed, rubbing/entangling effects of ropes) can damage some species (Eno et al. 1996). Other species appear to be resilient to individual fishing operations but the effects of high fishing intensity are unknown (Eno et al. 2001). Recovery will be slow (Foden et al. 2010) resulting in significant reduction or even loss of characteristic species. The individual impact of a single fishing operation may be slight but cumulative damage may be significant (Eno et al. 2001, Foden et al. 2010).

7. Development of management options

Management options are being developed where we consider that some form of management may be necessary to achieve the conservation objectives for the feature. The approach to identifying management options for each activity will be risk-based, i.e. we are focusing on providing advice where we believe there is a risk to achieving the conservation objectives. To do this, we are using existing data and information on protected features and relevant activities, and also our understanding of the relationships between the feature and relevant activities.

We have identified risks to achieving the conservation objectives where there is an overlap between protected features and activities associated with pressures the features are sensitive to. Our identification of the risk has been refined using available information on the interaction between the features and activities where this is available (see section 5). We have recommended management options to manage this risk. The text focuses on interactions in terms of physical overlap but the assessment of risk in future should also take account of the intensity and frequency of activities within the SAC.

Specific details of the recommended management options for mobile bottom contact and static bottom contact gears are provided in Tables 2 & 3.

A gradient of management options has been considered to reduce the feature's exposure to fishing pressures. These have been described under three potential management option categories:

- a) No additional management** – where there are currently no site specific fisheries management measures in place and these are not deemed necessary at this time to achieve the conservation objectives for the site.

b) Additional management to reduce pressures – where fisheries managers may wish to consider a range of measures that could be used to reduce the risk to features by managing fishing activity. These could include:

- Area restrictions (permanently closing some or all of the feature's area)
- Gear restrictions (e.g. restricting use of the more damaging gears)

Ideally, any measures would generally apply only to the parts of the sites where the feature is present. However, there may be some circumstances in which it could be desirable to extend management measures beyond the known area of feature distribution, for example, where conditions are suitable for a feature to exist but there are insufficient data to confirm its presence.

c) Additional management to remove pressures – where fishing activities known to adversely affect the feature would be excluded. Such exclusion would generally apply only to the parts of the sites where the feature is present, although it may occasionally be necessary to apply them to a wider area.

We recognise that stakeholders can provide local environmental knowledge and more detailed information on activities, including distribution and intensity of effort, frequency of activity, and fishing methods employed. This additional information will help us to develop more specific management options, focused on interactions between features and activities.

8. Overview of activities

Table 1. Overview of existing fishing activities believed to take place within or close to the Pisces Reef Complex SAC

Activities considered capable of affecting the integrity of the SAC	Activities <i>not</i> considered capable of affecting the integrity of the SAC*
<ul style="list-style-type: none"> • Towed dredges • Hydraulic dredge (likely miscoded towed dredge) • Otter trawls • Beam trawls • Pair seine • Trammel nets 	<ul style="list-style-type: none"> • Pots and traps • Pelagic otter trawls • Pelagic pair trawls • Encircling gillnets • Handlines • Purse seines

*Only the specific examples of activities listed in the table have been excluded, rather than the broad activity types.

Nationalities fishing in the relevant ICES rectangles:

- | | |
|---|---|
| <ul style="list-style-type: none"> • UK • Ireland • Norway | <ul style="list-style-type: none"> • France • Isle of Man |
|---|---|

See Annex One for figures showing fishing activity over the Pisces Reef Complex for 2009-2012.

9. Management options

Table 2. *Management options for mobile bottom contact gear*

Management option	
No additional management:	There is a significant risk of not achieving the conservation objectives for the reef feature.
Reduce/limit pressures:	This option would reduce the risk of degradation to the reef feature as a result of direct impact from fishing activities. Appropriate measures could include exclusion of mobile bottom contact gears over the main areas of bedrock and stony reef , allowing fishing to continue in fishable areas around the features. This implies that a buffer zone may not always be applied around the features and there would therefore be a risk of localised damage to the structure and function of reef communities through accidental contact from fishing gear. The location of areas to be covered by management restrictions would be decided in consultation with stakeholders.
Remove/avoid pressures:	This option would reduce the risk of degradation to any reef feature within the site boundary to the lowest possible levels. Restrictions would be required for all mobile bottom contact gears within the full extent of the site boundary. The site boundary already includes a buffer zone of 400m from the reef features, based on a ratio of 3:1 fishing warp length to depth, to reduce any risk of accidental contact with the feature. The site boundary is made up of three separate polygons; the buffer has been applied individually to each of the reef features of the site.

Table 3. *Management options for static gear*

Management option	
No additional management:	This option is considered to be sufficient for bottom contacting static gear to achieve the conservation objectives for the reef feature. However, if monitoring showed evidence of detrimental effects as a result of static gear activity in the future, additional management may be required.

Reduce/limit pressures:	This option would further reduce the risk of not achieving the conservation objectives for the reef feature. If fishing activity were to rise to levels at which damage was occurring, appropriate management could include partial closure of the feature and/or limits on the amount of gear that can be deployed.
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10. Conclusions and further recommendations

Fisheries management measures for the Pisces Reef Complex SAC will be developed through discussion with stakeholders. Discussions will focus on refining our understanding of the features through input from stakeholders, and the likely risks to the designated features where interactions with fishing activities occur. Based on the options presented here, it is hoped that a preferred set of management options will be recommended. This will form the basis of management measure proposals to be submitted to the European Commission under the Common Fisheries Policy.

11. Further information

The following documents about the Pisces Reef SAC are available from the JNCC website:

[Pisces Reef Complex SAC Selection Assessment Document, Version 7 \(September 2012\)](#). This document contains detailed information about the site's features, how the boundary was developed, an assessment of the features against SAC selection criteria, and information on what survey data was used to designate the site.

[Pisces Reef Complex Conservation Objectives and Advice on Operations, Version 3 \(December 2012\)](#). This document contains the conservation objectives for the Pisces Reef Complex SAC, and information on the sensitivity and exposure of the features to physical, chemical and biological pressures associated with human activity. This information was used to indicate which activities may require management to achieve the conservation objectives.

12. References

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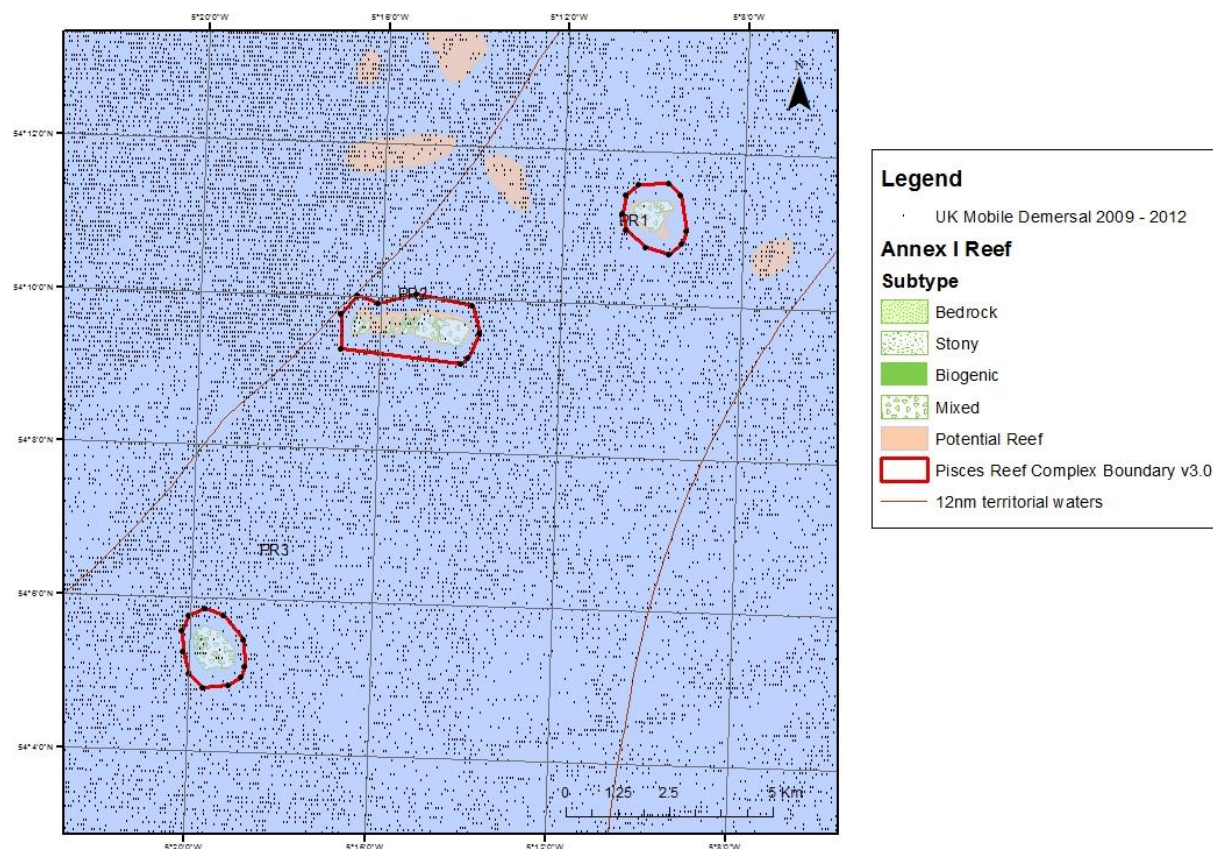
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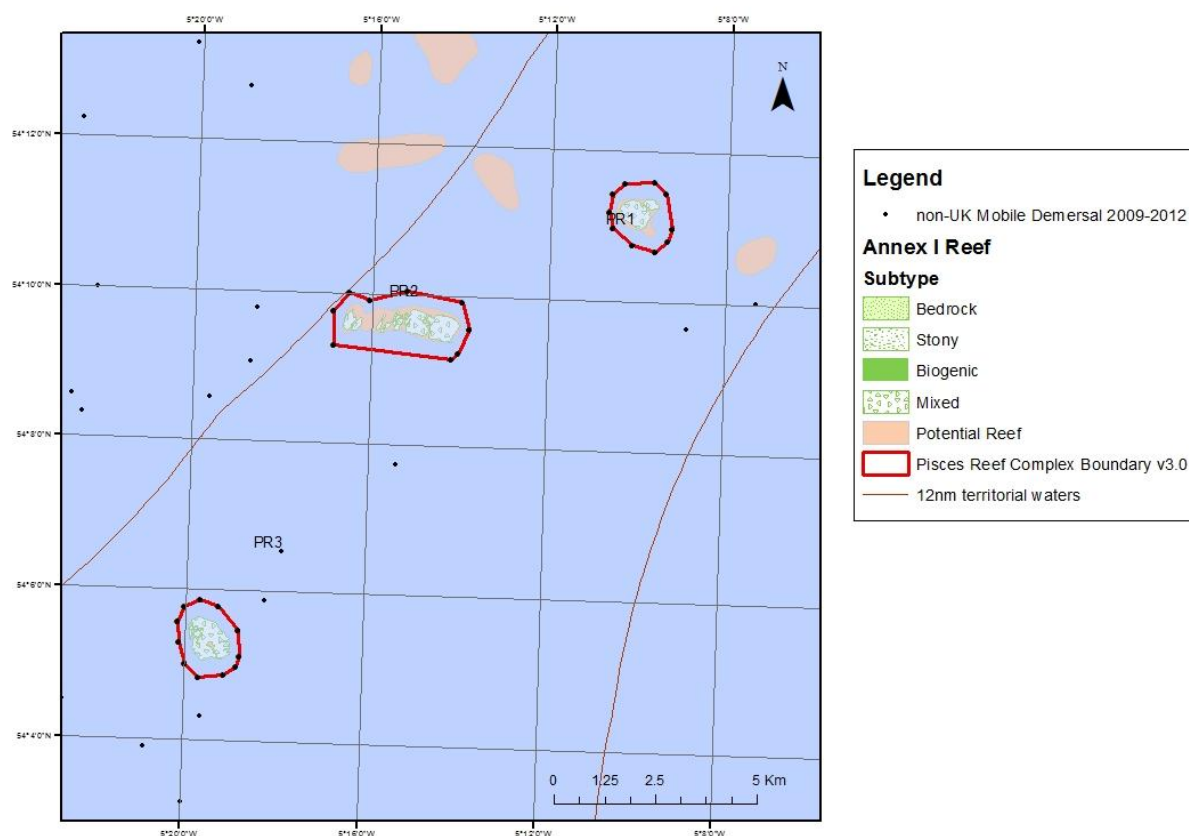
Annex One

Figure 4. Pisces Reef Complex boundary and Annex I reef feature map with associated VMS data for >15m UK-registered mobile demersal fishing vessels for the years 2009-2012



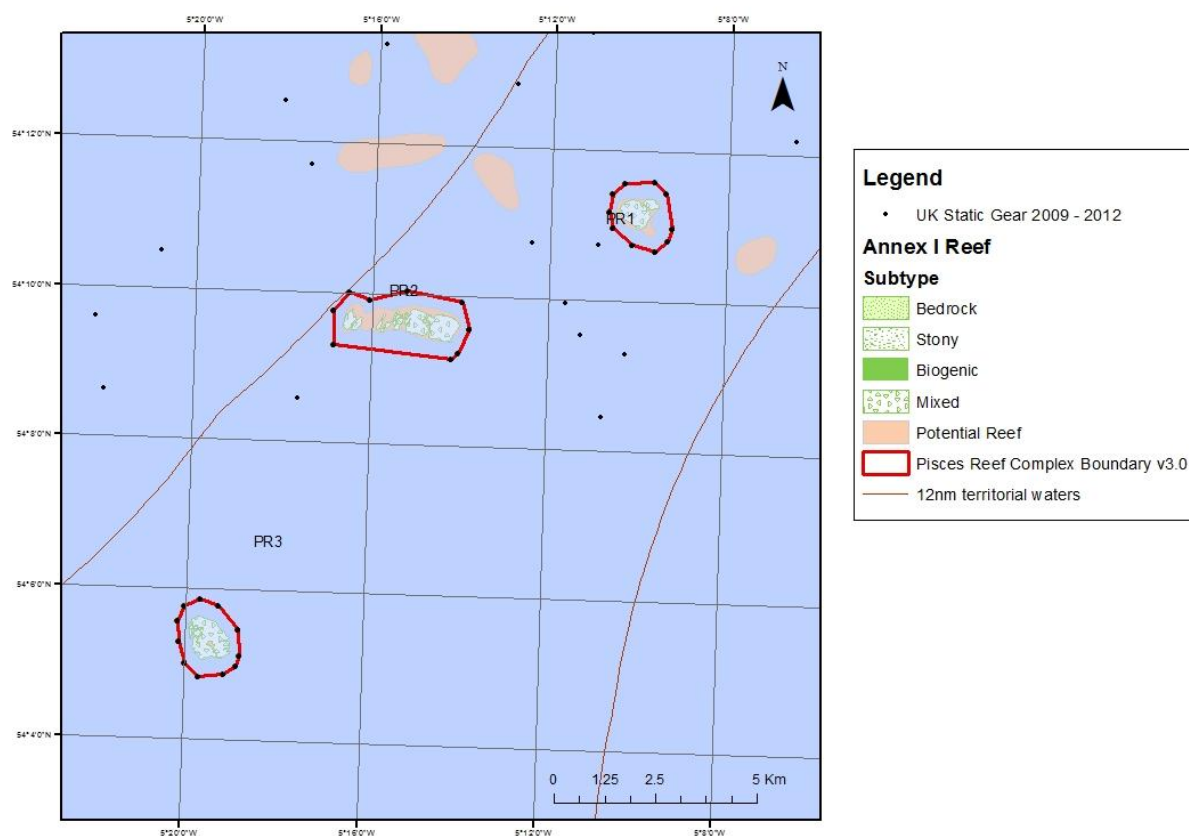
Site map projected in UTM (Zone 30N, WGS84 datum). Seabed habitat derived from DTI SEA data. This product has been derived in part from material obtained from the UK Hydrographic Office with the permission of the Controller of Her Majesty's Stationery Office and UK Hydrographic Office (www.ukho.gov.uk). UK Defra Astrium DEM 2012 bathymetry. NOT TO BE USED FOR NAVIGATION. The exact limits of the UK Continental Shelf are set out in orders made under section 1(7) of the Continental Shelf Act 1964 (© Crown Copyright). Map copyright JNCC 2014.

Figure 5. Pisces Reef Complex boundary and Annex I reef feature map with associated VMS data for >15m non-UK-registered mobile demersal fishing vessel for the years 2009-2012



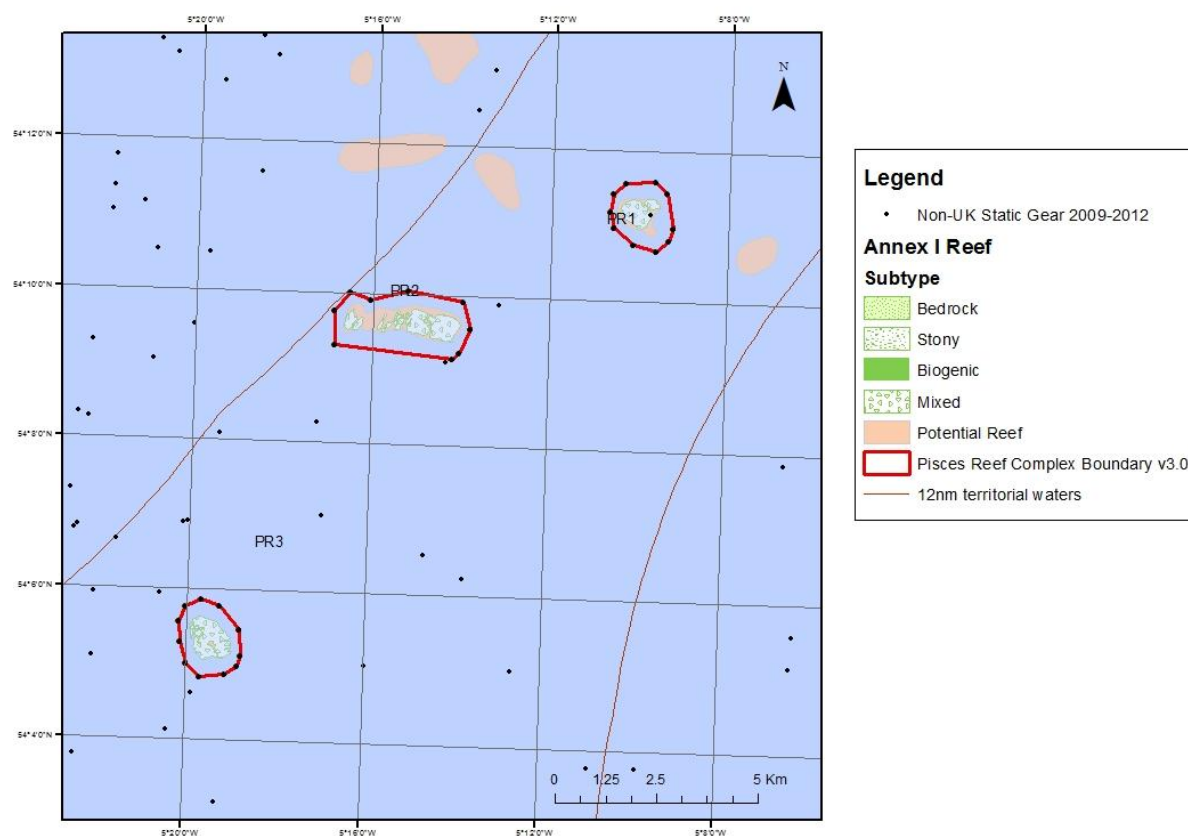
Site map projected in UTM (Zone 30N, WGS84 datum). Seabed habitat derived from DTI SEA data. This product has been derived in part from material obtained from the UK Hydrographic Office with the permission of the Controller of Her Majesty's Stationery Office and UK Hydrographic Office (www.ukho.gov.uk). UK Defra Astrium DEM 2012 bathymetry. NOT TO BE USED FOR NAVIGATION. The exact limits of the UK Continental Shelf are set out in orders made under section 1(7) of the Continental Shelf Act 1964. (© Crown Copyright). Map copyright JNCC 2014.

Figure 6. Pisces Reef Complex boundary and Annex I reef feature map with associated VMS data for >15m UK-registered static demersal fishing vessels for the years 2009-2012



Site map projected in UTM (Zone 30N, WGS84 datum). Seabed habitat derived from DTI SEA data. This product has been derived in part from material obtained from the UK Hydrographic Office with the permission of the Controller of Her Majesty's Stationery Office and UK Hydrographic Office (www.ukho.gov.uk). UK Defra As trum DEM 2012 bathymetry. NOT TO BE USED FOR NAVIGATION. The exact limits of the UK Continental Shelf are set out in orders made under section 1(7) of the Continental Shelf Act 1964 (© Crown Copyright). Map copyright JNCC 2014.

Figure 7. Pisces Reef Complex boundary and Annex I reef feature map with associated VMS data for >15m non-UK-registered static demersal fishing vessels for the years 2009-2012



Site map projected in UTM (Zone 30N, WGS84 datum). Seabed habitat derived from DTI SEA data. This product has been derived in part from material obtained from the UK Hydrographic Office with the permission of the Controller of Her Majesty's Stationery Office and UK Hydrographic Office (www.ukho.gov.uk). UK Defra As trum DEM 2012 bathymetry. NOT TO BE USED FOR NAVIGATION. The exact limits of the UK Continental Shelf are set out in orders made under section 1(7) of the Continental Shelf Act 1964 (© Crown Copyright). Map copyright JNCC 2014.