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JOINT NATURE CONSERVATION COMMITTEE

SITE PROPOSAL FOR PISCES REEF COMPLEX

Paper by Neil Golding

1. Introduction

- 1.1 Further to the paper provided to Joint Committee in September 2008 (JNCC 2008), the site proposal for Pisces Reef Complex is presented here for Committee to approve for recommendation to Defra.
- 1.2 The context for the selection of this site was set out in the paper *Progress towards completing the UK network of marine Special Areas of Conservation (SACs) for Annex I habitats, and site proposals for Hatton Bank and Bassurelle Bank (JNCC 08 P14)*, which Joint Committee approved subject to amendments in December 2008. The amended paper was provided on the JNCC website in February 2009 (<http://www.jncc.gov.uk/page-4539>).
- 1.3 The full site proposal documentation is available for review by Committee members upon request, and will be made available on the JNCC website if the site is approved for recommendation to Defra by Joint Committee. The documentation has regard to the format developed by JNCC (JNCC, 2004), as subsequently improved to incorporate comments made by Committee, and aligns with requirements of JNCC under the Offshore Marine Conservation Regulations. It contains all the information required by the Secretary of State under Reg 7 of the Offshore Marine Conservation Regulations 2007 (as amended in 2010) in order for him/her to recommend that the sites be subject to public consultation under Reg 8. The advice within the document is also compliant with Conservation (Natural Habitats, &c.) Regulations 1994 (as amended).
- 1.4 Following Joint Committee's approval of this site recommendation, and subsequent approval by Defra, a pre-consultation exercise will be conducted, along with the preparation of socio-economic impact assessments for this site. Formal public consultation will then follow, subject to Government approval.

2. Proposal of Special Area of Conservation for Pisces Reef Complex

- 2.1 The Pisces Reef Complex is located in the western Irish Sea, in the Western 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 reef protrude; these are situated apart from each other at distances of between 5.5 km and 14 km. The average depth of the seabed within the site boundary is approximately 100 m with a maximum of 130 m and a minimum of 70 m on the peaks of the rocky reef outcrops. The deepest depths are within the scour pits which encircle the outcropping rocky reefs.

- 2.2 The proposed site boundary for Pisces Reef Complex has been defined using JNCC's marine SAC boundary definition guidelines (JNCC, 2008). The proposed boundary (see *Figure 1*) is a simple polygon enclosing the minimum area necessary to ensure protection of the Annex I habitats. The extent of the reef feature was derived from the analysis of multibeam echo sounder (*Figure 2*) and sidescan sonar data.
- 2.3 This site is located within the Irish Sea Regional Sea (JNCC, 2004; Defra, 2004), approximately 23 km south-east of the mouth of Strangford Lough, Northern Ireland, and has an area of approximately 697 hectares. There are a number of SACs within this regional sea for which reef is a qualifying feature: Strangford Lough SAC, Pembrokeshire Marine SAC, Y Fenai a Bae Conwy (Menai Strait and Conwy Bay) SAC, Pen Llyn a'r Sarnau SAC, Cardigan Bay SAC, Solway Firth SAC, Luce Bay and Sands SAC and Morecambe Bay SAC. However, the Pisces Reef Complex differs considerably in character from these sites as it is found in the deep circalittoral and is subject to intermediate coastal influence and a low energy environment.
- 2.4 The areas of bedrock and boulder reef that form the Pisces Reef Complex arise sharply from the surrounding flat, muddy sediment plain, occasionally arising up to 35 m from the seabed. The reef structures are formed from tertiary igneous extrusions; acoustic data clearly show the hard rocky areas distinct from the soft, muddy sediment (*Figure 2*).
- 2.5 Analysis of the video and still imagery from drop camera surveys confirmed the presence of bedrock/boulder reef and identified the major faunal communities. The rocky reef habitat was extremely silty – a symptom of the depositional environment in which the site is located. The seabed imagery revealed a diverse epifaunal community tolerant to the extremely high silt conditions present at the site. The benthic epifaunal communities observed on the rocky reef share key similarities to the biotope complex CR.LCR.BrAs (Brachiopods and ascidians on low energy circalittoral rock) (Connor *et al*, 2004). In addition to brachiopods and ascidians, the habitat was characterised by a dense hydroid and bryozoan turf composed predominantly of the brown deep-water hydroid *Diphasia alata*, *Diphasia pinastrum*, *Lytocarpia myriophyllum*, *Nemertesia antennina* and the bryozoan *Bugula* sp. A range of sponges were also recorded including the cup sponge *Axinella infundibuliformis* (often in high densities), *Stelligera stuposa* and *Polymastia boletiformis*. Other species of notable interest include the echinoderms *Porania pulvillus*, *Asterias rubens*, *Henricia* sp. as well as *Hormathiidae* anemones and the crustaceans *Cancer pagurus* and *Munida rugosa*.
- 2.6 In the muddy sediment surrounding the reef features, numerous *Nephrops norvegicus* and *Calocaris* sp. burrows were observed; typical of the SS.SMu.CFiMu biotope complex recorded in the vicinity.
- 2.7 As any bottom trawling that occurs in the area may pose a threat to the reef, the proposed boundary includes a margin to allow for mobile gear on the seabed being at some distance from the location of a vessel at the sea surface. The average depth of water in the SAC is approximately 100 m, therefore assuming a ratio of 3:1 fishing warp length to depth, the proposed boundary is defined to include a margin of 300 m from the reef feature. This buffer has been applied individually to each of the reef features of the site.

- 2.8 The boundary proposed is for the SAC. Any future management measures which may be required under the Offshore Marine Conservation (Natural Habitats, & c.) Regulations 2007 (as amended 2010) will be determined by Competent Authorities in consultation with JNCC, and may have different boundaries to the SAC site boundary.
- 2.9 The conservation objectives for Pisces Reef Complex have been set as follows: Subject to natural change, maintain the reef in favourable condition, such that a) the natural environmental quality is maintained, b) natural environmental processes are maintained, and c) the extent, physical structure, diversity, community structure and typical species representative of reef in the Irish Sea are maintained.
- 2.10 There is some direct evidence that demersal fishing on the soft sediment outside of the SAC boundary has led to damage of the benthic assemblages as evidenced by conspicuous trawl scars in the sediment (Judd, 2004). However, there is no evidence that the trawling has impacted the reef feature or associated biological community, and it is likely that fishers avoid the hard substrate to prevent them from damaging their fishing gear. As a consequence, JNCC consider it sufficient to maintain the condition of the Pisces Reef Complex SAC site.
- 2.11 The biotope complex that most resembles the Pisces Reef Complex assemblage, CR.LCR.BrAs (Brachipods and ascidians on low energy circalittoral rock) (Connor *et al*, 2004), is sensitive to physical loss, physical damage, toxic and non-toxic contamination, and biological disturbance.
- 2.12 The Irish Sea is fished for *Nephrops norvegicus*, which represents the second largest UK fishery outside of the North Sea (Cefas, 2009). There are already fisheries management measures in place for this fishery, including total allowable catches, effort control (days at sea restrictions), catch composition regulations and gear and mesh size restrictions. Minimum landing size for Irish Sea *N. norvegicus* is 20 mm carapace length, 37 mm tail length or 70 mm total length.
- 2.13 Although fishing effort in the region is moderate, *N. norvegicus* are primarily trawled for on the soft sediments surrounding the reef features and it is assumed that fishers actively avoid the reefs themselves to avoid damaging their gear. As such, the reef is considered to have low exposure to fishing pressures.
- 1.1 The Irish Sea has increased levels of artificial radioactive isotopes due to authorised discharge from the British Nuclear Fuels plc (BNFL, 1991-1998) reprocessing plant at Sellafield (e.g. Smith *et al*. 2001). There is no information currently available regarding the sensitivity of the SAC feature and associated biological communities to this pressure.
- 2.14 The Pisces Reef Complex SAC is considered to be moderately vulnerable to physical disturbance or abrasion and selective extraction of species due to demersal fishing pressures. It was not possible to assess the vulnerability to introduction of radionuclides, introduction of microbial pathogens, and introduction of non-native species and translocation.

3. References

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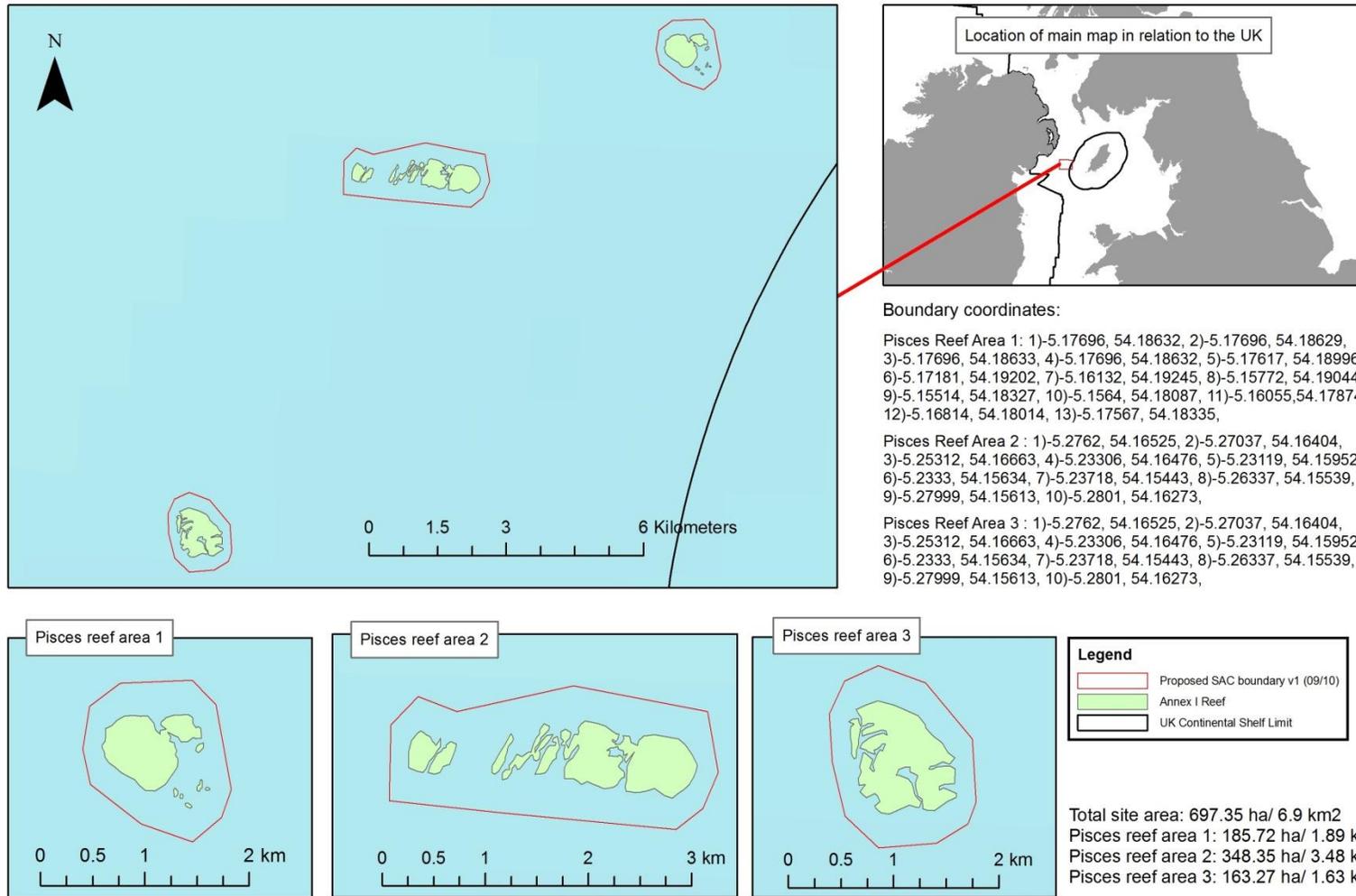
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Offshore Special Area of Conservation Site Map: Pisces Reef Complex



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). 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 2010.

Figure 1: Proposed site boundary for Pisces Reef Complex

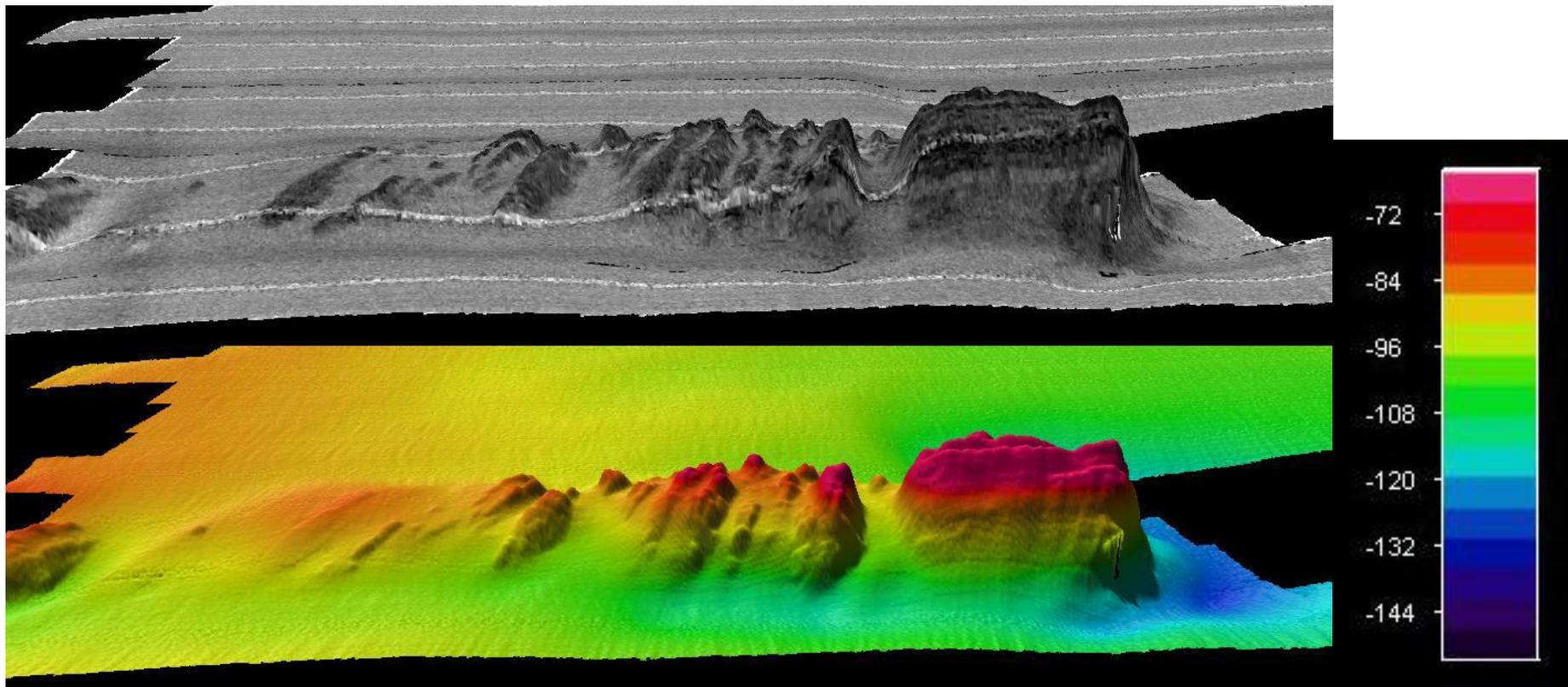


Figure 2: Pisces Reef area 2 (aspect – looking N) - a 3D view of Pisces Reef area 2 bathymetry complete with drape of multibeam backscatter. Note the hard (dark) backscatter return showing the outcropping bedrock. See scale bar for water depth in metre