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JOINT NATURE CONSERVATION COMMITTEE

MARINE NATURA 2000 - PROCESS FOR CONSIDERATION OF OFFSHORE SACs AND FOR SPAs AND SACs WHICH CROSS THE 12n MILE BOUNDARY

Paper by Charlotte Johnston and Caroline Turnbull

1. Introduction

- 1.1 This paper follows on from previous papers on Marine Natura 2000 considered by the Joint Committee, including that considered at its March 2004 meeting (JNCC 04 P05). In relation to work in UK offshore waters on Annex I habitats under the Habitats Directive, the Joint Committee has to date:
- i. agreed a working methodology for the selection of offshore habitat SACs, subject to public consultation;
 - ii. approved guidance on the definition of the boundaries of habitat SACs away from the coast;
 - iii. recommended the submission of the Darwin Mounds as a SAC to Government; and
 - iv. identified five other sites as a possible first group for submission of SACs.
- 1.2 In relation to work on marine SPAs, in both inshore and offshore waters, Committee has to date:
- i. agreed generic guidance on extensions to existing breeding colony SPAs of 1km for puffins, guillemots and razorbills, and for 2km for gannets;
 - ii. approved the methods for selection of SPAs for non-breeding birds, including application of JNCC's published guidelines on SPA selection;
 - iii. recommended the submission of Carmarthen Bay SPA to Government; and
 - iv. agreed a process for endorsing proposals for additions to the SPA network for inshore sites.

- 1.3 In March 2004 (JNCC 04 PO5) Committee felt unable to endorse the five offshore habitat SAC sites presented to it, for submission to Government, because the documentation relating to the sites was considered to be incomplete. It was agreed that the process by which offshore sites would be proposed to Committee and endorsed needed to be set out and adopted, and the documentation required to support Committee's decisions agreed. This paper presents both the process for offshore habitat SAC proposals, and also a worked example of the documentation recommended for supporting future offshore SAC proposals, using the 'Saturn *Sabellaria spinulosa* reef' possible site as an example. The Saturn reef has already been partly damaged, most probably by trawling, and there are proposals for aggregate extraction and for location of structures in relation to the oil and gas industry in the area which could affect the reef.
- 1.4 The process for endorsing terrestrial and inshore SPA proposals for submission to Government was adopted by the Joint Committee in September 2003. At that meeting it was agreed that 'the JNCC Chairman could approve designations to the SPA network when the Support Unit advised that the guidelines had been appropriately applied. Contentious cases should be considered by the Chairman of the Committee, an independent member and the Chairman of the corresponding country agency'.
- 1.5 This paper:
 - i. recommends a process to be followed for submission of offshore SAC proposals to Committee;
 - ii. appends a summary of the working methodology adopted by the Committee for identifying possible offshore SACs;
 - iii. recommends the nature of the documentation to be provided in support of such proposals, with a worked example based on the 'Saturn *Sabellaria spinulosa* reef' site;
 - iv. recommends the 'Saturn *Sabellaria spinulosa* reef' site be proposed to Government for designation as an SAC; and
 - v. recommends the process to be followed for possible SACs and SPAs in inshore waters which extend slightly into UK offshore waters.
2. **Process to be followed for submission to Committee of possible habitat and species SACs wholly or partly in UK offshore waters**
 - 2.1 For proposed SACs in UK territorial waters, the process followed by the country agencies is for detailed briefs to be prepared for each SAC for the approval of their Council/Board. Once approved, the site is transmitted to the Joint Committee for endorsement as a component of the UK Natura site series, for inclusion on the list of SACs submitted to Ministers and, after completion of the consultation process, for onward transmission to the European

Commission. For possible sites in UK offshore waters, the approval function of the country agency Council is performed by the Joint Committee.

2.2 The following process outlines the steps to be taken prior to submission to Committee of the list of SACs for onward transmission to Ministers:

- i. as a matter of normal working practice, the Support Unit will elicit the views of a range of relevant marine stakeholders on the aspects relevant to the identification and selection of possible sites. This informal consultation will be as open as practicable, subject to the sensitivity or urgency relating to particular issues, and will include members of the 'marine sub-group' of the UK Natura Steering Group. The purpose of this informal consultation is to i) ensure that available information and expertise is taken fully into account, and ii) involve stakeholders in the selection process to the extent practicable and to avoid exclusion;
- ii. the area to be proposed and the proposed site boundary is considered and agreed by the inter-agency Marine Natura Project Group. In the case of areas wholly or mostly in UK offshore waters, the investigation and proposal will be by the JNCC Support Unit, in conjunction with one or more of the country agencies in the case of 'cross border' areas. Where only a small proportion of the area is in UK offshore waters (for example, less than 10%), the investigation and proposal will be by the relevant country agency in conjunction with JNCC Support Unit;
- iii. for those areas wholly or mostly in UK offshore waters, the JNCC Support Unit will prepare documentation according to the proforma outlined in Section 3 of this paper, and present the proposal to the Joint Committee for approval of the area and the proposed boundary. For sites primarily within territorial waters, the relevant country agency would prepare the documentation and present the proposal to their Council, according to their existing practices;
- iv. once the site has been approved by the Committee or the relevant country agency, as the case may be, (and the Joint Committee has endorsed the site where the site is primarily inshore), Defra and the relevant Devolved administrations would be advised of the recommendation, and public consultation will proceed. In the case of sites wholly in UK offshore waters, and in the absence of Regulations indicating otherwise, Defra will conduct this consultation (as they did for the Darwin Mounds in 2003). Within territorial waters, the country agencies currently perform this function on behalf of Defra and the Devolved administrations;
- v. for inshore sites, once the site consultation has been conducted and any matters arising from this resolved, details of the site (amended as necessary following the consultation) are submitted by the relevant country agency to the JNCC Support Unit which compiles the data forms and maps (in both paper and electronic form) and submits these

to Defra for onward transmission to the European Commission. For sites in UK offshore waters, this step will not be required until Regulations are in place (anticipated to be winter 2004), but it is likely to be a function performed by the JNCC Support Unit;

- vi. the formal list of SACs as submitted to the European Commission is presented to the Joint Committee at appropriate intervals for information.

3. *Proforma* for the submission of offshore habitat SACs to Committee for approval

3.1 The recommended *proforma* for sites to be presented to the Joint Committee draws on the practices of site notification in the country conservation agencies, and provides the information required to be submitted to the European Commission for each Natura 2000 site.

3.2 The *proforma* for sites submitted to Committee for proposal as SACs will include the following items:

- i. **Site name**
The name by which the European Offshore Marine Site should be referred to.
- ii. **Site centre location**
The geographical co-ordinates (longitude and latitude) of the site centre in degrees, minutes and seconds.
- iii. **Site surface area**
In hectares, rounded to the nearest hectare. Also in square kilometres, rounded to the nearest kilometre.
- iv. **General description**
An overall 'picture' of the site.
- v. **Qualifying interest feature(s)**
Habitat and species interest features for which the site is designated, are present at a significant presence and will have conservation objectives set for them. For species this will also include the aspect of life cycle for which the site is important.
- vi. **Assessment against selection criteria**
An assessment against Habitats Directive Annex III selection criteria of each qualifying interest feature. In the case of habitat interest features these will include assessments for:
 - a. Representativity
 - b. Area of habitat
 - c. Structure and function
 - d. Global assessment

In the case Annex II species interest features, these will include assessments for:

- a. Population
- b. Conservation
- c. Isolation
- d. Global

vii. **Vulnerability**

The nature and extent of pressures upon the site from human and other influences and the fragility of habitats and ecosystems found there.

viii. **Boundary justification**

An explanation of the definition of the draft boundary, including reference to the JNCC guidance on defining boundaries for sites away from the coast (see Appendix 2 to this paper).

ix. **Map**

Map of the site including the location of the site in relation to mainland UK and displaying the boundary coordinates.

x. **Supporting scientific information**

Description of biological communities in habitat qualifying features and/or description of population of qualifying feature species.

3.3 A worked example of a completed *proforma* for an offshore habitat SAC is provided in Appendix 3 for the 'Saturn *Sabellaria spinulosa* reef'. This area of habitat is currently threatened by existing fishing practices (bottom trawling), and there are current indications of damage to the site, assumed to be caused by trawling activity. Aggregate extraction has been licensed within the area, and would be subject to environmental assessment under the Government View procedure. Oil and gas developments have been proposed in the vicinity, and are subject to environmental assessment and regulation under the Offshore Petroleum Activities (Conservation of Habitats) Regulations 2001.

3.4 The Committee is requested to note that the quantity of biological information for offshore areas is generally less than and more variable than that available for inshore areas. The information available for both the Darwin Mounds and for the currently proposed 'Saturn *Sabellaria spinulosa* reef' is of high quality and quantity. Possible sites occurring further offshore, whilst deemed to have sufficient biological information to characterise the communities present, may have a less comprehensive spread of data points, and more generalised information on extent of habitat.

4. **Process for submission to Committee of possible SPAs and SACs in inshore waters which extend slightly into UK offshore waters**

SPAs

- 4.1 For selection of proposed SPAs in UK territorial waters, the country agencies prepare detailed briefs for each SPA for the approval of their Council or Board. There is then a delegated procedure, agreed by Committee at its September 2003 meeting (paper JNCC 03 P14), whereby JNCC checks the selection of the site against the UK selection guidelines and the approval procedure set out in paragraph 1.4 above is operated. The relevant country agency then advises either Defra or the devolved administration (as the case may be) of the site, and formal public consultation proceeds. Once any matters arising during the public consultation are addressed, any site to be progressed is classified by the relevant Minister, and the relevant agency then submits the formal documents to JNCC for onward transmission to Ministers and the European Commission.
- 4.2 A consultation draft of Regulations implementing the Habitats and Birds Directives in UK offshore waters was issued by Defra in 2003, and the Regulations are anticipated to be placed before Parliament in autumn 2004. JNCC are developing a procedure, similar to that described in paragraph 4.1 above, for submission of possible offshore SPAs (or parts thereof) to Committee. A paper describing the suggested procedure will be presented to Committee for consideration at a later meeting.
- 4.3 However, work on the identification of inshore SPAs for birds in the non-breeding season has progressed, including completion of the analysis of data for birds such as common (black) scoter, red throated diver and other species within Liverpool Bay. An area has been identified, using the methodology approved by Committee in March 2004, which qualifies as an SPA according to the published JNCC guidelines on selection of SPAs. The area identified is largely within the territorial seas of England and Wales, but there is a small part (less than 10%) of the area which falls in UK offshore waters.
- 4.4 English Nature and the Countryside Council for Wales are well advanced in the preparation of documentation (subject to clarification on some aspects of the science behind the boundary definition) to submit the relevant parts of the Liverpool Bay area identified to their Councils for approval for selection as an SPA, following the process outlined in paragraph 4.1 above. To avoid delaying the submission of this site to Government unnecessarily, it is proposed, that where 10% or less of the proposed SPA area extends into UK offshore waters, the delegated procedure as outlined in paragraph 1.4 above should apply not only to proposed sites wholly in territorial waters, but also to those where 90% or more of the proposed area is within territorial waters.

- 4.5 The detailed documentation for the site for submission to the country agency Councils is prepared jointly by agency staff and the JNCC Support Unit for sites within territorial waters. It is proposed that the documentation for sites where less than 10% of the proposed area is in UK offshore waters would include information relevant to the offshore part as well as that part within territorial waters. The documentation would be submitted to the relevant agency Council(s) for approval for selection as an SPA following the existing process outlined in paragraph 4.1 above, which includes the delegated procedure agreed by Committee in September 2003.
- 4.6 Following approval of selection of the whole site by the relevant country agency and JNCC as described above, the relevant agency would advise Defra or the devolved administrations of the proposed site. In the case of the small part of the proposed site within UK offshore waters, JNCC would advise Defra of the selection of the offshore part of the proposed site. The process by which public consultation on the part of the proposed SPA within UK offshore waters would be achieved, by Defra and/or the devolved administrations, is yet to be determined, and will depend on the final form of the Regulations implementing the Birds Directive in UK offshore waters.

SACs

- 4.7 It is probable that sites for possible submission as SACs will straddle the 12n mile boundary. In a process similar to that proposed for SPAs in paragraph 4.4, it is proposed that, where 10% or less of a possible SAC lies within offshore waters, the documentation considered and approved by the country agency Council/Board should relate to both the offshore area as well as the inshore area, and that, where the Council/Board approves the site, the Joint Committee delegates to the Chairman JNCC authority to approve the offshore area of the site.

JOINT NATURE CONSERVATION COMMITTEE

SUMMARY OF THE WORKING METHODOLOGY FOR IDENTIFYING HABITAT
SACS IN UK WATERS (adopted March 2003)

1. Offshore habitat SACs selection criteria, and guiding principles for selecting sites and site assessment

Selection criteria and guiding principles for selecting sites

- 1.1 Site selection criteria for Annex I habitats are prescribed by Annex III of the Habitats Directive, and are listed in Table 1 below along with guiding principles in the Directive's text and agreed at the 1994 Atlantic Biogeographical Region meeting.

Table 1: Summary of site assessment criteria and additional principles used for site selection in the UK (from McLeod *et al*, 2002)

Site assessment criteria (Annex I habitats)	Reference
Representativity	Annex III Stage 1A(a); Article 1e; Conclusions of 1994 Atlantic Biogeographical Region Meeting (para.4)
Area of habitat (Relative surface)	Annex III Stage 1A(b); Article 1e; Conclusions of 1994 Atlantic Biogeographical Region Meeting (para.4)
Conservation of structure and functions	Annex III Stage 1A(c); Article 1e
Global assessment	Annex III Stage 1A(d)
Additional principles	
Priority/non-priority status	Article 1d; Annex III Stage 1D; Conclusions of 1994 Atlantic Biogeographical Region Meeting (para. 3)
Geographical range	Article 1e and 3.1
Special UK responsibilities	Article 3.2; Conclusions of 1994 Atlantic Biogeographical Region (para. 6)
Multiple interest	Annex III Stage 2.2(d); Conclusions of 1994 Atlantic Biogeographical Region Meeting (para. 2)
Rarity	Conclusions of 1994 Atlantic Biogeographical Region Meeting (para. 5)

*Assessing areas of Annex I habitat against the selection criteria and principles*1.2 *Representativity and geographical range*

- i. A suite of sites for each Annex I habitat should, ideally, cover the geographical and ecological range of variation present in the territory of the Member States. This can be achieved by looking at prospective

sites, firstly in terms of the geographic location of areas of habitat in UK waters, and secondly in terms of their physical and ecological characterisations.

- ii. Assessment in terms of geographic location can be assisted by reference to the biogeographic regions being developed under Defra's Review of Marine Nature Conservation (RMNC) in their work on 'Regional Seas'. The most recent version of these 'Regional Seas' (which have regard to English Nature's Natural Areas) is shown in Figure 1 as Sea Areas.
- iii. Assessment in terms of physical and ecological characteristics can utilise topographic form, structural character and substratum type, as is most appropriate to the habitat under consideration.

1.3 *Area of habitat, conservation of structure and function, and global assessment*

These selection criteria are currently much harder to apply in the offshore marine environment due to uncertainty about the extent of the habitat across prospective sites and the relationships between the habitat and adjacent areas of seabed. In Sections 2 to 4 below, the methodology used to apply the selection criteria and guiding principles is summarised for the three Annex I habitat types occurring in the offshore environment.

1.4 *Priority/non-priority status, UK responsibility and rarity*

None of the Annex I habitats occurring in the offshore environment is a priority habitat, and neither the special UK responsibilities nor the rarity principles apply to the *Sandbanks which are slightly covered by seawater all the time* or to *Reefs* habitats. The UK may have special responsibility for the *Submarine structures made by leaking gases* habitat, as this habitat may be considered rare. This statement may need to be amended following EU 'marine expert group' discussions on the definitions of Annex I habitats.

Availability of data for habitat identification and assessment

- 1.5 Potential Annex I habitat has been identified using the British Geological Survey (BGS) seabed sediment dataset which has been modelled from point surveys, bringing an inherent level of uncertainty to the areas identified. In some areas, further survey has been conducted which can 'ground truth' the BGS data and confirm the presence of Annex I habitat.
- 1.6 In some cases, survey has also provided biological information about the areas of Annex I habitat, although such biological information is patchy. JNCC has spent considerable effort collating biological information about these areas from the range of available sources. The European Seminar on offshore Natura 2000 sites hosted by Defra in June 2002 concluded that 'the need for biological data for SAC identification was widely recognised', but did not reach a conclusion on the level of biological data needed to select a site.

- 1.7 In this paper, the test for whether there is sufficient biological information to make an assessment against the selection criteria has been set at whether biological data is sufficient to provide a picture of the community present on the Annex I feature, while information which is confined to a few easily-observed species is deemed insufficient to make an evaluation.
- 1.8 Applying the foregoing process to the areas of Annex 1 habitat identified in the 12-200 n mile zone, it is currently possible to allocate areas to one of two groups as follows:

Group 1

Areas of habitat can be allocated to Group 1 where:

- i. presence of Annex I habitat has been confirmed;
- ii. sufficient biological information is available to satisfy the test described in paragraph 1.7; and
- iii. sites of this character do not occur in territorial waters (0-12nm).

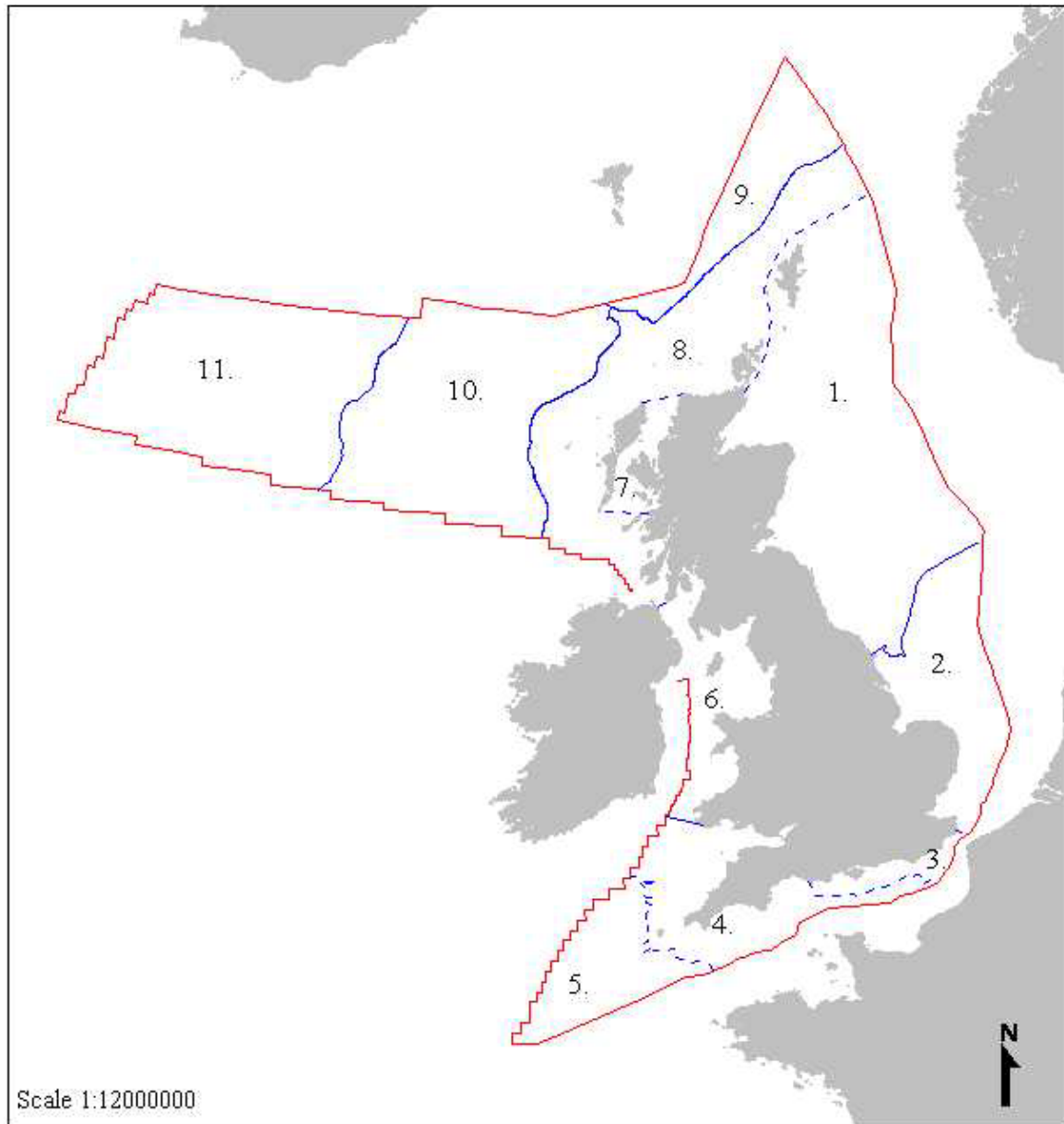
Group 2

Areas of habitat are allocated to Group 2 where either:





- i. conditions in i. and ii. above are fulfilled, but areas of similar habitat character may occur within territorial waters, and therefore assessment will need to be carried out jointly with country conservation agencies; or
- ii. the condition in i. above is satisfied, but insufficient biological information exists; or
- iii. survey is required to confirm the presence of Annex I habitat.

Sites will need to be selected from Group 2 as well as areas of habitat in Group 1 to fully represent the range of marine habitat types under Annex I of the Directive in UK waters. Areas containing rare habitats, such as *Sabellaria spinulosa* reefs may be allocated to Group 1 even if existing cSACs containing similar features are present within inshore waters.

Figure 1: Sea areas used to determine a representative suite of sites for Annex I habitat interest features (numbers correspond to the list below)



Key

-  Land
-  UK Continental Shelf Designated Areas
-  Sea area limit
-  Sea area limit (location under discussion)

World Vector Shoreline © US Defense Mapping Agency.

The exact limits of the UKCS are set out in orders made under section 1(7) of the Continental Shelf Act 1964 (© Crown).

1. Northern North Sea
2. Southern North Sea
3. Mid and eastern English channel
4. Mid and western English Channel & Celtic sea
5. South west approaches
6. Irish Sea
7. The Minches
8. Continental shelf and shelf break north and west of Scotland
9. Faroe-Shetland Channel
10. Rockall Trough and bank
11. North west approaches west of Rockall

2. Sandbanks which are slightly covered by sea water all the time

2.1 This habitat is defined in the Interpretation manual (EC, 1999) and is clearly orientated towards inshore waters. In offshore waters, the habitat type has been taken to include areas of sandy sediment (according to the Folk classification used by BGS) in less than 20 metres of water which are elevated from the surrounding seabed, together with the seabed around these areas necessary to preserve structure and function of the unit.

2.2 *Representativity and geographical range*

- i. The first step in achieving a representative suite of sandbank sites in UK waters is to identify where Annex I sandbank habitat is present within each sea area. This has been done using the areas of sandy sediment identified from BGS seabed sediment maps (Johnston *et al*, 2002).
- ii. The second step is to identify, within each sea area, sandbanks of different topographic types. The following topographic types have been identified as being present in UK waters:
 - sandy mounds; and
 - the following tidal current sandbank types (from Dyer & Huntley, 1999):

Type 1 open shelf ridge sandbanks

Type 2 estuary mouth sandbanks

Type 3 headland associated banks

Of these topographic forms, only sandy mounds and Type 1 tidal current sandbanks are found in UK offshore waters (the outer banks in the Thames estuary were Type 2 but have been sufficiently modified by open shelf currents to be considered as Type 1, Dyer & Huntley, 1999).

- iii. The third step is to sub-divide the sandbanks by gross sediment type of the bank. Sediment composition (according to the modified Folk classification used by BGS) is known for each bank using the 1:250,000 BGS seabed sediment data (Graham *et al*, 2001a). Sediments in Annex I sandbank habitat can range from gravelly sand to muddy sand (Johnston *et al*, 2002).

2.3 Areas identified as being within the scope of this Annex I habitat have been assigned to sea area, topographic type and gross sediment type.

3. **Reefs**

3.1 *Representativity and geographical range*

- i. The first step in achieving a representative suite of reef sites in UK waters is to identify where Annex I reef habitat is present within each sea area. This has been done using the areas of gravel and rock identified from BGS seabed sediment maps and other information gained from scientific research (Johnston *et al*, 2002).
- ii. The second stage in achieving a representative suite of sites for reef, is to clarify which sub-types of the habitat occur in each area. Reef sub-types in the offshore include: bedrock (including different topographical forms, e.g. bedrock outcrops, seamounts, pinnacles and banks), stony reef (boulder and cobble mounds and iceberg ploughmarks) and biogenic reefs (cold water coral thickets and banks, Ross worm *Sabellaria spinulosa* reef and horse mussel *Modiolus modiolus* reef) (Johnston *et al*, 2002).

3.2 Areas identified as being within the scope of this Annex I habitat have been assigned to sea area and structural type.

4. **Submarine structures made by leaking gases**

4.1 Only two examples of the pockmark variant of this habitat are currently known in UK waters. Both of these examples occur within the same sea area - northern North Sea. The UK may be regarded as having special responsibility for this habitat type. Further sites may need to be selected if they are discovered. Both of the known sites for this habitat have sufficient data to be assessed against Annex III selection criteria and can be included in Group 1.

5. **Developing a site series for Annex I habitats**

5.1 Taking into account the information, it is possible to determine which areas of habitat wholly in UK offshore waters can be considered against Annex III selection criteria immediately (group 1) and those which require new survey or consideration in collaboration with country conservation agencies before an assessment against selection criteria can be made (group 2). Group 1 includes those areas wholly in UK offshore waters for which sufficient data (confirmed presence of habitat with knowledge of sub-type and information on faunal

communities present) is held to assess the area against selection criteria and where there is no comparative area of habitat within territorial waters.

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JOINT NATURE CONSERVATION COMMITTEE**UK GUIDANCE ON DEFINING BOUNDARIES FOR MARINE SACs FOR ANNEX I HABITAT SITES FULLY DETACHED FROM THE COAST (adopted March 2003)****1. Introduction**

Previous UK guidance on defining SAC boundaries states that 'as a general principle, site boundaries have been drawn closely around the qualifying habitat types ... for which the sites have been selected, taking into account the need to ensure that the site operates as a functional whole for the conservation of the habitat type ... and to maintain sensible management units'. Further 'the seaward boundaries of the sites have been drawn as straight lines, to ensure ease of identification on charts and at sea' (Brown *et al.*, 1997, McLeod *et al.*, 2002). The guidance presented below is an expansion of previous guidance on defining boundaries for marine SACs, specifically for sites which are not connected to the coastline, and which may be in deep water (200m to more than 1000m).

2. Guidance

Actual site boundaries will be determined on a site specific basis, following the general guidance set out below:

- 2.1 The habitat area of interest will be identified and mapped. In many cases in waters away from the coast, this will involve some form of modelling, such as use of seabed geological data (interpolated from seismic tracks and samples), interpreted sidescan sonar, acoustic and/or bathymetric data.

The minimum area necessary in order to ensure the essential level of protection for the habitat of interest will be defined. Boundaries should be as simple as possible, drawn using defined latitude/longitude co-ordinates (degrees and minutes to two decimal places) and a minimum number of straight lines. Where practical, sites should be square or rectangular, and aligned vertically/horizontally with latitude/longitude. However, other simple shapes and alignments may also be used where necessary to avoid inclusion of unreasonably large areas not containing SAC interest.

- 2.2 The area defined under 2.1 above may then be extended if necessary in the following circumstances:
 - i. to ensure an essential level of protection from potentially damaging activities at the site, taking into account water depth at the site and possible location of mobile gear on the seabed in relation to location of a vessel at the sea surface. Activities which are location specific,

always subject to prior consent and have clear reliable methods of enforcement are already controlled under existing procedures such as licensing of these activities. Mobile activities which may affect seabed habitats, such as fishing and anchoring, are not subject to prior consent procedures and therefore need special consideration. The length of warp used by boats when trawling is largely determined by water depth. The following table gives the appropriate distance beyond the seabed extent of the habitat by which the site boundary at the sea surface may be extended (based on generalised trawl warp lengths, SERAD 2001):

Water depth	Ratio warp length: depth	Approx. length of trawl warp	Boundary extension to be added to the habitat area of interest
Shallow waters (≤ 25 m)	4:1	100 m at 25 m depth	4 x actual depth
Continental shelf (25-200 m)	3:1	600 m at 200 m depth	3 x actual depth
Deep waters (200 to over 1000 m)	2:1	2000 m at 1000 m depth	2 x actual depth

- iii. For mobile habitats (for example, sandbanks), to ensure the minimum area necessary to allow conservation of the structure and functions of the habitat. Such extension will be determined on scientific understanding of the structure and functions of the habitat.

References

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APPENDIX 3

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JOINT NATURE CONSERVATION COMMITTEE

EXAMPLE PROFORMA FOR SUBMISSION OF HABITAT SACS TO
COMMITTEE FOR APPROVAL: SATURN *SABELLARIA SPINULOSA* REEF

1. **Site name:**
Saturn *Sabellaria spinulosa* reef
2. **Site centre location**
53.483° N 1.950° E
3. **Site surface area**
1,641 hectares/16 km²
4. **General description**
Sabellaria spinulosa biogenic reefs are colonies of polychaete worms consisting of thousands of fragile sand-tubes consolidated together to create a solid structure rising above the seabed. The extensive area of this type of reef discovered as part of the survey for Saturn pipeline by Subsea 7 under contract to ConocoPhillips is located in the southern North Sea between Swarte and Broken banks and lies on the edge of a small sandbank. The density of *Sabellaria spinulosa* reef varies across the area from a main central area with very dense coverage (90%), to more patchy areas with 10-50% coverage, and sparser reef patches (<10%) around the outer edge of the area (BMT Cordah, 2003). Video and photographic images taken during the survey in 2003 clearly demonstrate the nature and extent of the reef, and its associated fauna.

Candidate SACs in the southern North Sea for which reef was the primary reason for site selection are shown below along with their notable characteristics:

cSAC	Notable characteristics of Reef interest feature
Flamborough Head	Bedrock and boulder chalk reefs and northern species which reach the edge of their range at this site.
Thanet coast	Chalk bedrock reefs and associated chalk-boring fauna and flora.
The Wash and North Norfolk coast	<i>Sabellaria spinulosa</i> biogenic reefs and associated epibenthic and crevice fauna.

In character, the 'Saturn' reef is most similar to the reef in The Wash and North Norfolk coast cSAC. Well developed *Sabellaria spinulosa* reef is not represented in SACs in other parts of UK waters.

The Saturn *Sabellaria spinulosa* biogenic reef is partially located on a sandbank which fits the Annex I habitat definition of 'Sandbanks which are slightly covered by sea water all the time' (habitat 1110) due to it being in a water depth of less than 20 m (LAT) and being composed of gravelly sand. Little is known of the biological community of this sandbank, and it is very small (15.2 hectares/0.2 km²). However, one of the requirements for development of *Sabellaria spinulosa* reef is a supply of sand particles, so it is recommended that the sandbank is included within the proposed site boundary to help to ensure the maintenance of the structure and function of the reef, but that it is listed as a non-significant presence (grade D).

5. **Qualifying interest feature(s)**

Reefs

6. **Assessment against selection criteria**

a) **Representativity**

The 'Saturn' *Sabellaria spinulosa* reef occurs in the southern North Sea. A SAC containing this feature would represent *Sabellaria spinulosa* biogenic reef in an open, tide-swept situation on sand/gravelly sand habitat. Images of the reef show the structure to rise well above the seabed (c. 30 cm) and densely cover the substratum. Despite the widespread occurrence of records of the species *Sabellaria spinulosa*, there are only four other known areas of well developed *Sabellaria spinulosa* reef in UK waters (and very few in other European waters). The Saturn reef is one of the two best developed examples, the other being partly within the Wash and North Norfolk cSAC. Due to the scarcity of this sub-type of reef habitat in UK and European waters, a high proportion of the habitat should be protected. The scarcity of the habitat is believed to be in part attributable to its vulnerability to damage from bottom trawling. The grade for the feature is A as it is a typical example of this type of Annex I reef habitat.

b). **Area of habitat**

The reef feature has an area of approximately 115 hectares (based on interpreted sidescan with ground validation and including areas of both dense and less dense clumps). This area is small when compared to the extent of all types of reef in UK waters, however, it is one of the largest areas of the *Sabellaria spinulosa* subtype of reef in UK waters. An estimate of the entire reef resource in UK waters is 8.7 million hectares¹ giving the following thresholds for the grades of this criterion:

A – extents between 8,700,000 and 1,305,000 ha

B – extents between 1,305,000 and 174,000 ha

C – extents less than 174,000 ha

A site for this feature falls between the 0 and 2% bracket on the Natura 2000 Data Form and is therefore graded as C.

¹ Total extent calculated from offshore resource identified by BGS contract plus total extent of habitat in current cSACs.

c) Structure and function

Degree of conservation of the structure: The biological and physical structure of the biogenic reef in this area is mainly intact although there is an area which has been fragmented, presumably by bottom trawling (Subsea7, 2003), in the south. The underlying sandbank structure is likely to be significant in providing conditions suitable for the reef formation and maintain the structure and function of the reef. Assuming no further damage has occurred, the grading is II: structure well conserved.

Degree of conservation of the functions: The prospects of this feature to maintain its structure in the future, taking into account unfavourable influences and reasonable conservation effort are moderate. A mechanism is available through the European Commission to modify fishing activity in the area if this is deemed to be necessary. The oil and gas and aggregates industries' operations are subject currently to Environmental Assessment, and would be subject to appropriate assessment if within an SAC. The area is quite distant from terrestrial sources of pollution, and potential local sources of pollution (from oil & gas industry activities) are also be subject to regulation. However, *Sabellaria spinulosa* is vulnerable to mechanical damage from storms and this feature could be degraded in spite of reasonable conservation effort. The grading is II: good prospects.

Restoration possibility: Restoration of the biogenic reef habitat should be possible accepting that restoration methods in the offshore area will focus on the removal of impacts which should allow recovery where the habitat has not been removed. The grading is II: restoration possible with an average effort.

Overall grade: When grade II for the first sub-criterion and grade II for the second sub-criterion are combined, the overall grade for the criterion is B: good conservation.

d) Global assessment

For the reef, suggested grades for Stage 1A criteria a) (representativity) and c) (structure and function) are A and B respectively, and the grade for criterion b) (area of habitat) is C. Given these gradings, the rarity of *Sabellaria spinulosa* biogenic reef in UK waters, and the large extent and good development of this example of the subtype of the feature, the Global Assessment grade is A.

Summary of scores for Stage 1a criteria

'Saturn' <i>Sabellaria spinulosa</i> reef	Representativity (a)	Relative surface (b)	Structure and function (c)	Global assessment (d)
Reef	A	C	B	A

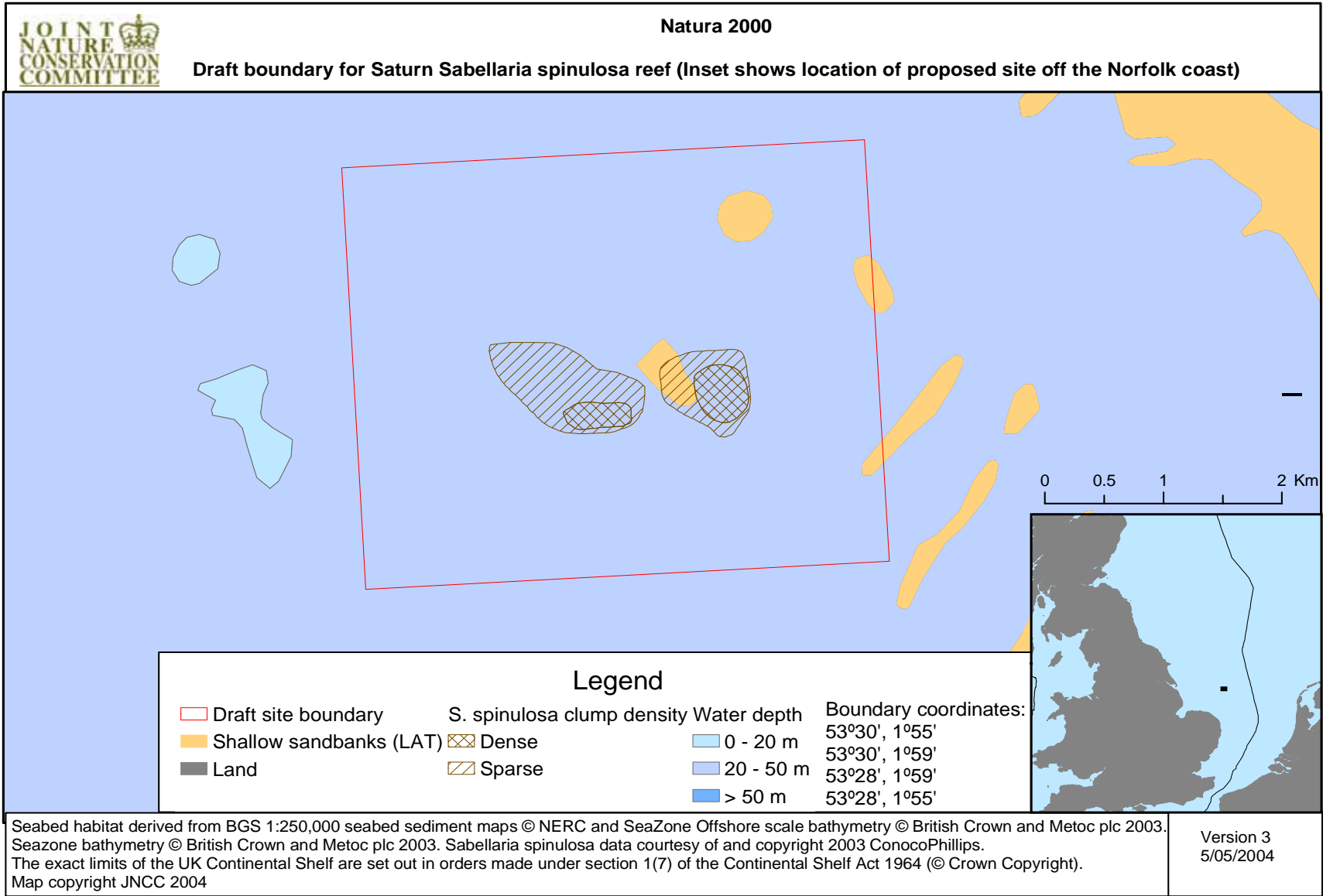
7. Vulnerability

The biogenic reef is vulnerable to mechanical disturbance from human activity such as bottom trawling and aggregates extraction as well as from the natural activity of storm waves. The area is located in an area subject to moderate fishing pressure and

clearly supports commercial species of fish. The reef is located in an area which is under application for a licence to extract marine aggregates.

8. **Boundary justification**

The proposed boundary for 'Saturn' *Sabellaria spinulosa* biogenic reef has been defined using the boundary definition guidelines agreed by the Joint Nature Conservation Committee in March 2003. Therefore, the proposed boundary is a simple rectangle defined by whole degrees and minutes, fully enclosing the minimum area necessary to ensure protection. The habitat is mapped with high degree of confidence due to the focused nature of the survey which identified the reef. Bottom trawling is a threat to the reef and therefore the proposed boundary includes a margin to ensure protection of the feature. The maximum depth of water around the feature is 30 m (LAT), therefore assuming a ratio of 3:1 fishing warp length to depth, the proposed boundary is defined to include a margin of 90 m from the feature. The boundary resulting from these considerations also includes the area of shallow sandbank which the reef overlaps.



9. **Supporting scientific information**

Scientific information comes from BMT Cordah (2003).

An environmental survey undertaken for ConocoPhillips and showed the area to support dense aggregations of ross worm *Sabellaria spinulosa*. The aggregations were sufficiently established to be definable as constituting a reef structure and in places had a profile of around 10cm. Reef patches were either broken by various shaped 'holes' or were elongated strips, raised above surrounding seabed, in addition to the height of the tubes. Non-tube sediment was variously silty sand/stones. Sediment included tube debris.

The survey identified a core area of near continuous and high profile reef and areas less densely colonised and patchier. The extent of the reef was established along with the presence of two main patches. Damage to the reef structure, believed to be the result of trawling, was also observed, particularly in the south west portion of the area.

In all, the extent of the ross worm reef along the primary survey area was determined to cover much of a 750m x 500m area, the core part of which was nearly 50% (500m x 250m).

10. **Qualitative assessment of reef fauna**

Though *Sabellaria spinulosa* reefs are of interest because of their biodiversity, it is recognised that the fauna found in and on the reef are not exclusive to this habitat (Foster-Smith and Hendrick, 2003; George and Warwick, 1985).

Samples of the reef were taken and 103 species were identified with a breakdown into major faunal groups as indicated in Table 1.

Table 1: Percentage distribution of species recorded

Faunal group	Percentage of total species
Polychaetes	58
Crustaceans	16
Molluscs	8
Echinoderms	6
Others	13

Notable species which were seen to be more abundant were:

Worms: *Pholoe synophthalmica*, *Mediomastus fragilis*, *Notomastus* sp. A, and *Scalibregma inflatum*.

Decapods: *Galathea intermedia*, *Pisidia longicornis*, *Upogebia deltuara*, *Ebalia cranchii*, and *Pilumnus hirtellus*.

Bivalve molluscs: *Abra alba*, *Mysella bidentata*, *Tapes rhomboides* and *Mya truncata*.

Gastropod molluscs: *Noemiamea dolioliformis*.

These worms and bivalve molluscs are typical of soft sediments. The reef structure allows for the accumulation of fine sediments and hence facilitates colonisation and proliferation of these species. In adjacent, reef-free, sediments they are unlikely to be present in such high numbers.

The reef also supports epifaunal species, especially small crabs such as *Pisidia longicornis*, *Ebalia cranchii*, and *Pilumnus hirtellus*. Also present were squat lobsters (*Galathea intermedia*) which are otherwise abundant only where stones, cobbles and rocks offer hideaways.

The gastropod mollusc *Noemiamea dolioliformis* is believed to be an ectoparasite of *Sabellaria* (Killeen and Light, 2000).

References

- BMT Cordah (2003). *Ross-worm non-technical report*. Report to Subsea 7 as part of contract for ConocoPhillips. 8 pp.
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