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JOINT NATURE CONSERVATION COMMITTEE

MARINE NATURA 2000

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1. Introduction

1.1 This paper summarises the progress of work towards completing the Marine Natura 2000 site series, the process for which was outlined in JNCC 02 D01 and agreed by Committee in March 2002.

1.2 The Committee has been kept informed of progress through updates within the Matters Arising papers at meetings in June 2000 and December 2000 and 2001, and through more detailed information papers presented to Committee at its meetings in September 2001 (Progress with Offshore Natura 2000), March 2002 (Process for completing Natura 2000 site series) and June 2002 (Darwin Mounds proposed SAC).

1.3 The ultimate responsibility for developing the UK site list lies with Government. However, the provision of formal advice to Government on nature conservation issues at the UK level is the responsibility of JNCC, and it is essential not only that the Joint Committee agrees this advice, but is fully and sufficiently involved its formulation. It is also essential that the advice is objective and scientifically robust.

1.4 Because the work crosses the inshore/offshore divide, and because the regulators and users of the marine environment in the inshore and offshore areas are often the same, it is vitally important that JNCC and the country agencies collaborate in this work to the fullest extent.

1.5 The proposals outlined in this paper will be considered at the first meeting of the JNCC led inter-agency Marine Natura Project Group on 25th September 2002, chaired by Jan Pentreath. The SPA Scientific Working Group (inter-agency and NGO) is considering the proposals outlined in this paper, insofar as they relate to SPAs, at its meeting on 24th September 2002. The recommendations and conclusions from both the Marine Natura Project Group and the SPA Scientific Working Group will be presented orally to the Joint Committee due to the close proximity of both meetings to the September 2002 Joint Committee meeting.

1.6 The following aspects of the work are presented:

i. draft guidance on the identification of habitat SAC site boundaries with regard to marine habitat sites fully detached from the coast;

ii. draft guidance on the definition of seaward extensions to existing seabird breeding colony SPAs;

iii. Carmarthen Bay proposed SPA;

iv. further work on the Marine Natura 2000 site series.

2. Marine SACs

2.1 The Government intends to bring in Regulations analogous to the Conservation (Natural Habitats &c) Regulations 1994, to implement the Habitats and Birds Directives beyond territorial waters. It is understood that these Regulations are currently undergoing internal governmental consultation, and will be consulted upon amongst interested bodies in Autumn 2002. Regulations are unlikely to be laid before Parliament before Spring 2003.

2.2 The intentions of Government and the European Commission as to how they propose to regulate activities affecting marine SACs and SPAs beyond territorial waters are still uncertain, as are the details of who will be responsible for implementing such regulations. It is unlikely that clarification will be available much before the consultation mentioned in 2.1 above.

2.3 To date, the Darwin Mounds is the only site completely detached from the coast which the Committee has recommended for inclusion on the UK list of SACs under the Habitats Directive. The proposed boundary for this site has not yet been formulated.

3. Draft guidance on the identification of habitat SAC site boundaries with regard to marine habitat sites fully detached from the coast

3.1 Previous guidance on identification of 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).

3.2 The draft guidance presented below is an expansion of previous guidance, to aid in defining boundaries for marine SACs where the habitat in question is not connected to the coastline. This guidance will be discussed and refined at the meeting of the Marine Natura Project Group on 25th September 2002.

3.3 The habitat area of core interest will be identified and mapped. In most, if not all cases in waters away from the coast, this will involve some form of modelling, such as use of BGS seabed geological data (interpolated from seismic tracks and samples at 5-10km spacing), interpreted sidescan sonar or bathymetric data.

3.4 The SAC boundary will be drawn to encompass the minimum area necessary in order to ensure the essential level of protection for the area of core interest. 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. If practical for the particular site, oil & gas industry licensing blocks could be used. However, other simple shapes and alignments may also be used where more practical.

3.5 Control of fisheries activities in relation to offshore SACs will be the responsibility of the EU under the Common Fisheries Policy, and will be likely to consist of EC fisheries regulations, using the relevant SAC site boundary. Enforcement of fisheries regulations in offshore waters will necessarily be by observation of the location of the fishing vessel, rather than the location of its fishing gear on the seabed. This needs to be borne in mind when considering the boundaries of marine habitat SACs that are fully detached from the coast.

3.6 In determining the minimum area necessary, account will be taken of the fact that the most likely cause of damage to marine habitat SACs detached from the coast is demersal fishing by trawling or dredging. Other activities likely to damage habitats, such as oil and gas developments, are already strictly licensed and subject to appropriate assessment. The length of trawl warp used by boats when trawling is largely determined by water depth. The following Table provides generalised trawl warp lengths for information.

Water depth	Ratio warp length:depth	Approx. length of trawl warp
Shallow waters (≤ 25m)	4:1	100m
Continental shelf (50-200m)	3:1	600m
Deep waters (200 to over 1000m)	2:1	2000m

Reference: SERAD 2001 A fishing industry guide to offshore operators, Scottish Executive, Edinburgh

3.7 Actual site boundaries will be determined on a site specific basis, following the general guidance set out in paragraphs 3.1 and 3.3 to 3.6 above.

4. Marine SPAs

4.1 JNCC has not yet recommended any sites for inclusion on the UK list of SPAs which are wholly marine in character. Some 87 coastal classified or proposed SPAs on the UK list have seabird qualifying interests; these sites relate to breeding seabird colonies, and are essentially terrestrial in nature. With few exceptions, they do not extend below low water.

4.2 As explained in JNCC 00 P04, there are likely to be three main types of marine SPA, namely:

i. seaward extensions of existing seabird breeding colony SPAs beyond low water mark;

ii. inshore marine areas used by birds in the non-breeding seasons (e.g. divers, grebes and seaduck); and

iii. marine feeding areas.

4.3 Strategic work is currently under way in support of identifying generic guidelines for the first and second of these. A possible approach to the third has been identified but no analytical work has yet been undertaken.

4.4 Although a strategic approach to the second type of marine SPA has been adopted, a recent EC opinion has demanded that we address one such inshore area, Carmarthen Bay, as a matter of priority.

4.5 In contrast to the situation with respect to birds in the terrestrial environment, survey data for marine birds tends to be collected at lower resolutions and may exhibit greater spatial and temporal variability. The reasons for this include the extent of the marine environment, the dynamic nature of (three-dimensional) marine habitats, and, consequently, the high costs of survey. Marine bird dispersion patterns are, therefore, sampled at relatively coarse scales.

4.6 Other marine data which could have a bearing on marine SPAs (e.g. seabed habitat type) are also collected at low resolutions for the same or similar reasons. In order to improve the resolution of marine survey data various spatial modelling tools have been applied. For example, British Geological Survey seabed substratum maps are interpolated from seismic tracks and sample points 5-10 km apart.

4.7 Historical and recently-collected data in the European Seabirds at Sea database held by JNCC are being used in spatial interpolation analyses to inform the development of selection criteria and the process of boundary identification for marine SPAs.

5. Draft guidance on the definition of seaward extensions to existing seabird breeding colony SPAs

5.1 Seabirds use the waters immediately adjacent to their breeding colonies for a variety of purposes during the breeding season. Essential activities that take place here include courtship, plumage and body maintenance and feeding. All birds breeding at a colony will use these waters to some extent.

5.2 The pattern of seabird use of the waters around colonies is determined by a combination of activities that are site-specific, and those that are not site-specific (i.e. not specific to an individual site). For example, the distribution of foraging birds will be governed by the distribution of prey, which is in turn dependent upon site-specific features of the habitat. Such features may be relatively fixed, such as water depth and substrate type, or more dynamic, such as the presence of hydrographic fronts.

5.3 Activities that are not site-specific (i.e. are 'generic' in character and likely to apply to most sites) may be carried out on any area of sea (at least theoretically) around breeding colonies. In reality, these areas might vary with respect to prevailing weather or tidal conditions but the pattern of seabird distribution resulting from birds engaged in non site-specific behaviour will, by definition, depend little on the habitat characteristics of the colony waters. Site-specific seabird distribution patterns will pertain only to those colonies at which they occur whereas non site-specific patterns should apply more widely.

5.4 Seabird distribution patterns immediately adjacent to breeding colonies have been much less well surveyed than distribution patterns further offshore. At-sea surveys generally do not include areas close inshore for navigation/safety reasons, so the distances from the colony at which most seabirds engage in various activities have not been well recorded. To address this gap in information, JNCC surveyed seabird distribution around six seabird colony SPAs during 2001.

5.5 The data from these surveys were analysed using spatial interpolation tools in order to identify patterns of non site-specific use that seabirds make of colony waters. Sufficient data were obtained to enable robust analyses of such distributions for four species of seabirds (common guillemot, razorbill, Atlantic puffin and northern gannet). There are fewer data available for three species (northern fulmar, European shag and black-legged kittiwake) but these datas are sufficient, combined with a knowledge of the ecology of the species concerned, to indicate significant use of sea areas immediately around the colonies.

5.6 There is not sufficient data on the use of coastal sea areas for several Annex I and migratory species which breed at SPAs (mostly at coastal colonies) in the UK (e.g. several species of terns, gulls, shearwaters, petrels, skuas and red-throated divers). Further work will be required to identify SPAs for these species.

5.7 Patterns of interpolated mean seabird densities (of birds engaged in non site-specific activity) in the waters of the six SPAs studied were similar. As the distribution patterns studied pertain to non site-specific use of the waters around the seabird colonies studied, it is considered that they are generally applicable to all seabird colonies at which the species recorded breed.

5.8 Highest interpolated mean densities of common guillemot, razorbill and Atlantic puffin engaged in non site-specific activity occurred within 1 km of their colonies. Highest interpolated mean densities of northern gannet engaged in non site-specific activity occurred within 2 km of their colonies. Although the data did not allow similar analyses, they did indicate that highest densities of northern fulmar, European shag and black-legged kittiwake engaged in non site-specific activity occurred within 1 km of their colonies.

5.9 It is recommended, therefore, that all existing colony SPAs at which common guillemot, razorbill and Atlantic puffin are qualifying species, be extended by 1 km from mean low water mark (mean low water springs in Scotland). Similarly, it is recommended that all existing colony SPAs at which northern gannet is a qualifying species, be extended by 2 km from mean low water mark (mean low water springs in Scotland).

5.10 It is also recommend that all existing colony SPAs at which northern fulmar, European shag and black-legged kittiwake are qualifying species, be extended by 1 km from mean low water mark (mean low water springs in Scotland).

5.11 A full report on this work has been circulated to country agency and external colleagues, including those in NGOs, for comment and consideration.

5.12 We recommend that the boundary of a seaward extension to an existing coastal or island breeding seabird colony SPA should be defined by a square or rectangle whose limits at no point occur less than 1 km or 2 km from the boundary of the existing SPA (whether on land or sea). The distance to be used would depend on the relevant species for the colony, as mentioned in paragraphs 5.8 and 5.9 above. The land area within this box not part of the existing SPA, would be excluded from the extension. The corners of the square or rectangle should be defined using latitude/longitude degrees and minutes to two decimal places.

5.13 The above guidance can be modified to address the particular circumstances or requirements of individual sites.

6. Carmarthen Bay proposed SPA

6.1 Carmarthen Bay was included on the list of potential SPAs published in Commons Hansard 11 May 1987 Col. 78-85, and subsequent Hansard lists, and the site was also included in the 1990 NCC review of the SPA network. However, the site was note included in the list of terrestrial and freshwater SPAs published by JNCC in 2001, because this list did not include sites which were primarily marine in character where the SPA selection guidelines would have had to be applied to an open sea area.

6.2 An EC Reasoned Opinion addressed to the UK on 26 June 2002 on its failure to apply Article 4 of the Birds Directive in respect of Carmarthen Bay has prompted recent re-prioritisation of work in support of identification of a boundary for this site.

6.3 We consider in principle that the guidelines for the designation of terrestrial SPAs can be applied to inshore areas used by birds such as seaduck, divers and grebes in the non-breeding seasons.

6.4 Applying these guidelines to Carmarthen Bay, the site qualifies as a potential SPA on the basis that surveys indicate a winter population of a regularly occurring migratory species, the black (or common) scoter, in excess of the 1% of the biogeographical population threshold (in this case 16, 000 birds) in two recent winters for which good data are available.

6.5 While analyses of the relevant data have been undertaken in pursuit of identifying a likely boundary for the site, we have adopted an approach that may allow identification of generic criteria for the identification of boundaries for other, similar, sites, i.e. those inshore areas used by birds such as seaduck, divers and grebes in the non-breeding seasons.

6.6 Again, given that marine survey data are collected at low spatial resolutions, we used spatial modelling to identify the likely distribution of black scoter in Carmarthen Bay. The best available data were used, those from aerial surveys undertaken in winter 2001/02; previous data are being used to check against and corroborate these findings.

6.7 The spatial analyses produce a regular grid of interpolated relative bird density values at points 100 m apart across the survey area. In addition to modelling relative bird densities in the site, we applied other tools that enable estimation of absolute numbers in different parts of the site. This is important to ensure that the options we propose for the site boundary include qualifying numbers of birds.

6.8 We have identified three possible approaches to the resolution of the site boundary:

i. boundaries based on lines of latitude and longitude;

ii. boundaries based on (diagonal) lines drawn between headlands on opposite sides of Carmarthen Bay; and

iii. boundaries based on a combination of both of these.

6.9 Within each of these approaches, we have identified a conservative boundary option and a more inclusive option for the boundary. The latter option includes most ‘satellite’ clusters of scoter density that are disjunct from the core concentration as indicated by spatial analysis of the aerial survey data.

The former consists largely of the non-disjunct core concentration of scoter density.

6.10 Data for density modelling was from aerial surveys in October and December 2001 and February 2002. Only the analysis of the October 2001 data indicates that the conservative boundary would hold qualifying numbers of scoter. Land-based counts from 1998 onwards indicate that the conservative boundaries hold qualifying numbers.

6.11 Each boundary option for the site includes 95 percent of the estimated population in the survey area, comprising the highest ranked points of modelled density values, a possible criterion which might be applied to other similar sites (although this is dependent on the nature of bird concentrations that prevail at other sites).

6.12 The results of our work are being reported to CCW and the other country agencies. In the light of comment received, a joint decision on the location of the boundary to be proposed will then be enabled and corroborated with respect to other relevant data from previous surveys of Carmarthen Bay.

6.13 Based on the final boundary being identified by 1 October 2002, CCW has indicated that the earliest timetable for classification of the site would see the site citation being sent to JNCC by 31 October 2002, the final citation being sent to National Assembly for Wales by 24 January 2003 and then onwards to the EC via UKREP by 10 February 2003. This completion date for the process, however, is dependent on the outcome of the formal consultation process undertaken by CCW.

7. Further work on the Marine Natura 2000 site series

7.1 Government has not set a specific timetable for the completion of the marine Natura 2000 site series, although it wishes the work to progress as rapidly as possible.

7.2 Further work on selection of marine SACs and SPAs is outlined in the Table at Annex I. Rate of progress on these items will depend on availability of funds.

References

Brown, A.E., Burn, A.J., Hopkins, J.J. & Way, S.F. 1997 The Habitats Directive: selection of Special Areas of Conservation in the UK. JNCC Report 270, Peterborough.

McLeod, C.R., Yeo, M, Brown, AE, Burn, AJ, Hopkins, JJ, & Way, SF (eds.) (2002) *The Habitats Directive: selection of Special Areas of Conservation in the UK.* 2nd edn. Joint Nature Conservation Committee, Peterborough. www.jncc.gov.uk/SACselection.

Stroud, D.A., Chambers, D., Cook, S., Buxton, N., Fraser, B., Clement, P., Lewis, P., McLean, I., Baker, H. & Whitehead, S. (2001) (eds.) *The UK SPA network: its scope and content*. Joint Nature Conservation Committee, Peterborough (3 volumes).

ANNEX A

MARINE NATURA SITES: PROGRESS CHART SEPTEMBER 2002

SPECIAL AREAS OF CONSERVATION			
Feature category	**SAC selection guidelines**	**Site list**	**Boundary determination guideline**
Marine coastal habitats	✔	✔	✔
Marine habitats outside coastal waters	✔	[1]	*
Harbour porpoise			
Other marine species outside coastal waters (bottlenose dolphin, grey seal, common seal)			
SPECIAL PROTECTION AREAS			
Category	**SPA selection guidelines**	**Site list**	**Boundary determination guideline**
Coastal SPAs	✔	✔	✔
Seabird breeding colony extensions	✔	*	*
Non-breeding aggregations			
Feeding areas			

Note:

* = subject presented in this Committee paper and requiring agreement by country agencies. Further work to be completed on these feature categories

[1] = Darwin Mounds pSAC approved by Committee June 2002