

**MARINE NATURA 2000 CONSULTATION :**  
**CAN POTENTIAL SACs FOR THE BOTTLENOSE DOLPHIN BE IDENTIFIED IN UK OFFSHORE WATERS USING EXISTING DATA?**

**Cover note**

As part of the implementation of the Habitats Directive in UK offshore waters, the JNCC provides advice to Defra on sites suitable for selection as Special Areas of Conservation for habitats listed on the Habitats Directive Annex I and species listed on Annex II. Bottlenose dolphin is listed on Annex II and is known to occur regularly in UK offshore waters. JNCC has reviewed data held on bottlenose dolphin in order to evaluate whether sites can be identified for this species on the basis of the application of Habitats Directive Annex III criteria. This paper has already been subject to consultation with country conservation agencies through the Marine Natura Project Group.

Consultees are requested to comment on:

- a) The use of the data held in the Joint Cetaceans Database.
- b) The recommendation that no bottlenose dolphin SACs can be identified on the basis of current data.
- c) The listing of bottlenose dolphin as non-significant presence in the Wyville Thomson Ridge site (as approved by the Joint Nature Conservation Committee in December 2004 [JNCC04P23](#)).

Comments should be sent to the Joint Nature Conservation Committee at [offshore@jncc.gov.uk](mailto:offshore@jncc.gov.uk) or by mail to Caroline Turnbull, JNCC, Monkstone House, City Road, Peterborough, PE1 1JY. For further information or explanation of this paper, please use the same point of contact.

Comments should arrive by the **25<sup>th</sup> February, 2005**.

Comments from this consultation will be incorporated into the final version of guidance which will be presented to the Joint Nature Conservation Committee in 2005.

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# CAN POTENTIAL SACs FOR THE BOTTLENOSE DOLPHIN BE IDENTIFIED IN UK OFFSHORE WATERS USING EXISTING DATA?

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## 1. Introduction

The bottlenose dolphin *Tursiops truncatus* has a worldwide distribution. It occurs in tropical and temperate seas of both the southern and northern hemispheres, and in or over a wide range of habitats, including shallow estuaries and bays, continental shelf edges, and deep, open oceans. In coastal waters, the species often favours large river estuaries, headlands or sandbanks, where there is uneven bottom relief and/or strong tidal currents (Lewis and Evans 1993; Liret *et al.* 1994; Wilson *et al.* 1997).

In the north-east Atlantic, bottlenose dolphins are locally common near-shore off the coasts of Spain, Portugal, north-west France, western Ireland (where the largest numbers have been observed), the Irish Sea (particularly Cardigan Bay), and north-east Scotland (especially the Moray Firth). There are smaller numbers in the Channel, and they also occur around the Faroe Islands (Bloch 1998).

In deeper waters, the species occurs near the shelf break off south-west Ireland southeastwards towards the French coast. Sightings of groups have been observed at various locations offshore including near the Rockall Bank and over the Wyville Thomson Ridge and the Ymir Ridge (see Reid *et al.* 2003).

There appear to be several resident (but highly mobile) groups of bottlenose dolphins in UK near-shore waters, for example in the Moray Firth (*c.* 130 animals; Wilson *et al.* 1997), in Cardigan Bay (130–350 individuals; Lewis 1992, Arnold *et al.* 1997), and in the Channel (including north-west France, at least 85 animals; Liret *et al.* 1998), and off Barra in the Outer Hebrides.

It has been suggested that there are genetic differences between animals that reside offshore and those that inhabit inshore waters; they might possibly be distinct species.

## 2. Protection under the EC Habitats Directive

The bottlenose dolphin is listed in Annex II of the EU Habitats Directive (EC 1992). Consequently, as an animal species of European Community interest, its proper conservation requires the designation of Special Areas of Conservation (SAC) where such areas are “clearly identifiable” and which represent “the physical and biological factors essential to [its] life and reproduction”. The species is also listed in Annex IV of the Directive, which provides for its strict protection more widely.

SACs have already been identified for bottlenose dolphin in inshore waters in the UK. There are resident populations of the species in two SACs (Moray Firth and Cardigan Bay/Bae Ceredigion), and a significant number occur in the Pen Llyn a'r Sarnau/Lleyn Peninsula and the Sarnau SAC. The species is also recorded as present (“non-significant presence”) in a further six candidate SACs identified primarily for other marine features; these are Fal and Helford, Isles of Scilly Complex, Lundy, Pembrokeshire Marine/Sir Benfro Forol, Plymouth Sound and Estuaries, and St Kilda.

Attention is now being directed towards the selection of offshore marine SACs, that is out to 200 nautical miles or the limits of the UK Continental Shelf designated area. The list of Sites of Community Importance for the Atlantic Biogeographic Region was approved in October 2004 by the Commission’s Habitats Committee and adopted by the European Commission in December 2004. However, a ‘reserve’ has been placed on certain marine habitats and species likely to occur in offshore waters (including bottlenose dolphin), which allows for the addition of other sites to the list for these habitat types and species.

This paper addresses the issue of whether currently known patterns of occurrence of bottlenose dolphins in UK offshore waters can be used to identify potential offshore SACs for the species.

## 3. Bottlenose dolphin distribution in UK offshore waters

The most up to date summary of cetacean distribution in the north-east Atlantic lies in the Joint Cetacean Database (JCD), from which Figure 1 is derived (see Reid *et al.* 2003). The JCD contains records of bottlenose dolphin sightings from 1979–1997; Figure 1 depicts the distribution of bottlenose dolphin records and relative sightings rates contained in the database. Although caution must be exercised in interpreting this map, it does accurately show clusters of known bottlenose dolphin occurrence. In UK waters, the resident

populations of north-east Scotland and west Wales are clearly shown in Figure 1, as are clusters associated with the species' presence in other SACs. Year-round, the great majority of sightings of the species are from near-shore waters, but many records also exist for offshore waters. Of the 155 ¼ ICES rectangles (15' x 30' latitude/longitude, approximately 15 x 15 nautical miles, cells) depicted in which bottlenose dolphins are known certainly to occur, about half are in UK waters.

Approximately half of those ¼ ICES rectangles that are contained within whole ICES rectangles that wholly or partly reside within UK waters, and which also have records of bottlenose dolphins in the JCD, are in near-shore waters (defined as containing coastline), and about half are in offshore waters. A complete list of these is available from the Joint Nature Conservation Committee.

As is clear from Fig. 1, the bottlenose dolphin is a wide-ranging species. There are some ¼ ICES rectangles of low sightings rates that are contiguous with rectangles of very high sightings rates and these obviously refer to the same populations of animals. This is clearly the case in the Moray Firth and west Wales areas, and perhaps also south-west England. Some rectangles of low sightings rate are geographically isolated and probably do not indicate regular occurrence of the species; at the very least, there is no evidence to suggest that areas within such rectangles, more than any other, represent any physical and biological factors essential to the life and reproduction of the species.

Clearly, despite roughly equal numbers of near-shore and offshore ¼ ICES rectangles in which the species was recorded, clusters of sightings occur mainly in near-shore ones. Indeed, there is a significant difference between sightings rates in near-shore and offshore ¼ ICES rectangles. Sightings rates in offshore waters are lower than those in near-shore waters (0.33 versus 0.76 animals/hour,  $t = 2.01$ , 70 df,  $p = 0.0487$ ; t-test for unequal variances).

Fig. 1 shows that only one area would appear to indicate a possible offshore cluster of bottlenose dolphins in UK waters, that in the vicinity of the Wyville Thomson and Ymir Ridges to the north-west of Scotland. Sightings rates in the seven ¼ ICES rectangles positive for the species between 59.626° and 60.375° N and 8.25° and 6.75° W, do not differ significantly from those associated with the Moray Firth or west Wales SACs (means of 1.21, 1.39 and 0.73 animals/hour respectively; one-way ANOVA,  $F = 0.24$ , 1 df,  $p = 0.629$ ). Despite there being survey effort in this area for all months of the year, the JCD indicates that animals were recorded in this offshore "cluster" in only four months (September to December), compared with 10 and 12 months respectively in the Moray Firth and west Wales clusters. Mean group size recorded in the offshore cluster is 8.75 animals, whereas in the Moray Firth cluster it is 6.76, and in the west Wales cluster 3.82.

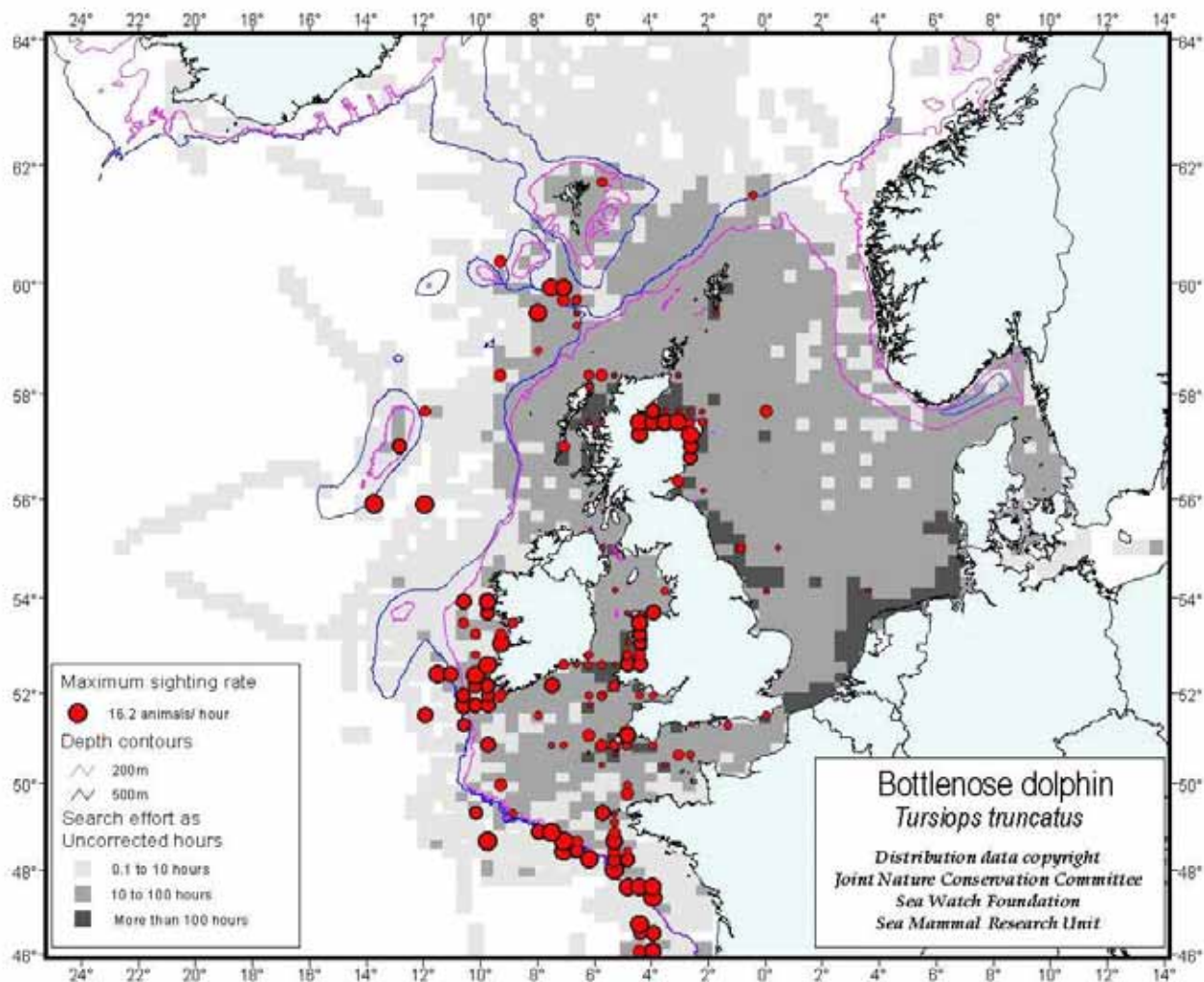


Figure 1 Distribution and relative abundance records of the bottlenose dolphin in north-west European waters (from Reid *et al.* 2003)

Data collected since 1997 (the most recent year of JCD data) confirm that bottlenose dolphins may occur seasonally in deep water along the Wyville Thomson and Ymir Ridges (Pollock *et al.* 2000). Pollock *et al.* (2000) recorded the species here only between September and March. Added to the JCD data, group size in the area ranges from one to 30 animals, with a mean of 6.23.

Although the available data might indicate regular occurrence near the Wyville Thomson and Ymir Ridges it is not possible to define a clearly identifiable area that might represent the physical and biological factors essential to bottlenose dolphin life and reproduction. The bottlenose dolphin is a wide-ranging species and without further study the possibility that such an area exists to the north-west of Scotland remains open. What can be highlighted here is the poor adequacy of the JCD data to fully inform the SAC issue with regard to this species; they exist at too coarse a scale, both spatially and also probably temporally. JCD data could not be (and were not) used to identify the SACs in north-east Scotland or west Wales; the nature of the JCD data place the analyses presented here at the boundary of their (the data) interpretation.

Although there is no clear evidence to identify a specific area for consideration as a SAC for the bottlenose dolphin near the Wyville Thomson Ridge, two possible habitat SACs are being considered there – part of the Wyville Thomson Ridge itself and the Darwin Mounds. The possibility that the species might qualify as a feature of these SACs was investigated by addressing the most recent version (v 4.1, September 2004) of the European Seabirds at Sea (ESAS) database, recalling that the JCD data used in Reid *et al.* (2003), which includes ESAS data, extended only to 1997. Again, there is little unequivocal evidence to suggest that the bottlenose dolphin qualifies as a feature at either site. Of 37 cetacean records (dating from only 1997) within the boundaries of the Darwin Mounds possible SAC, none refer to the bottlenose dolphin, and of 11 cetacean

records (dating from 1985) in the Wyville Thomson Ridge site, only two are of bottlenose dolphins – a sighting of one animal in 1994, and another of five animals in 1997.

#### 4. Summary and recommendations

Although bottlenose dolphins occur at several locations offshore there is little indication, with the possible exception of the vicinity of the Wyville Thomson and Ymir Ridges area, of notable, regularly occurring aggregations in UK offshore waters. There are indications that there might be seasonal movements by the species into the Wyville Thomson Ridge area but the remoteness of the location has precluded detailed investigation. The available information is not adequate to clearly identify any area in UK offshore waters that represents the physical and biological factors essential to the life and reproduction of the bottlenose dolphin. Consequently, we recommend that no offshore SAC be identified for the species using existing data.

However, there are two possible SACs in deep water to the north-west of Scotland in the vicinity of the Wyville Thomson and Ymir ridges: the Darwin Mounds and the Wyville Thomson Ridge itself. There are no records of bottlenose dolphins within the Darwin Mounds proposed SAC. However, there are two records of the species within the Wyville Thomson ridge pSAC shortly to be proposed. Given the presence of the species at this site and that survey effort in this remote location has been relatively low, especially at the time of year when bottlenose dolphins appear to be certainly present in the general area (autumn/winter), we recommend that the species be listed as a non-significant presence for the proposed Wyville Thomson Ridge SAC.

#### 5. References

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