

3. Habitats Directive Annex II Species

3.1. Species for which SACs will be considered

Annex II of the Council Directive 92/43/EEC (as amended by Directive 97/62/EC) on the conservation of natural habitats and of wild fauna and flora lists those species of Community Interest whose conservation requires the designation of Special Areas of Conservation (SACs).

Annex II species occurring in the marine environment of the UK are listed in Table 3.1.

Table 3.1 Species listed on Annex II of Council Directive 92/43/EEC and known to occur in offshore waters of the UK.

Name	Scientific name	Notes	Existing SAC(s) in UK?
Grey seal	<i>Halichoerus grypus</i>		✓
Common seal	<i>Phoca vitulina</i>		✓
Bottlenose dolphin	<i>Tursiops truncatus</i>		✓
Harbour porpoise	<i>Phocoena phocoena</i>		
Loggerhead turtle	<i>Caretta caretta</i>	R	
Otter	<i>Lutra lutra</i>	I	✓
Lampern	<i>Lampetra fluviatilis</i>	I	✓
Lamprey	<i>Petromyzon marinus</i>	R	✓
Sturgeon	<i>Acipenser sturio</i>	R	
Shad	<i>Alosa</i> spp.	R	✓

Note: R = rare in UK offshore waters, without regular places of occurrence
I = inshore distribution (not found in UK offshore waters)

Of these species, otter and river lamprey (or lampern) occur only in inshore and inland waters. Lamprey, sturgeon and shad are all rare in UK offshore waters and without regular places of occurrence. Loggerhead turtle is primarily a tropical and subtropical species which may wander into temperate waters. It is recorded infrequently in UK waters, mostly as cold-stunned juveniles washed ashore on west coasts during or after periods of stormy weather in winter and spring (Pierpoint 2000). No sites “essential to their life and reproduction” (see Section 3.2 below) are likely to be identifiable in UK offshore waters for any of the above species. Therefore only the first four species in Table 3.1 (two species of seal and two cetaceans) are being considered further for identification of possible SACs in UK offshore waters.

3.2. Site assessment criteria and additional principles used for site selection for Annex II species in the UK

Article 4 of the Habitats Directive, requiring sites (SACs) to be proposed for Annex II species, states that, “For aquatic species which range over wide areas, such sites will be proposed only where there is a clearly identifiable area representing the physical and biological factors essential to their life and reproduction”.

As for Annex I habitats (Section 2.2), the Habitats Directive includes, in Annex III, criteria for selecting sites eligible for identification as Sites of Community Importance and designation as Special Areas for Conservation. As for Annex I habitats, in preparing the UK national list of candidate SACs (for terrestrial and inshore species), as well as the Annex III selection criteria, additional principles for site selection have been developed, which interpret and supplement the Annex III selection criteria. The selection criteria and additional principles relating to Annex II species are listed in Table 3.2 below.

Again, as for Annex I habitats, the process of applying the selection criteria and additional principles to terrestrial and inshore sites in the UK is described in JNCC Report 270 (Brown *et al.* 1997), which is currently being updated (McLeod *et al.* in press).

Table 3.2 Summary of site assessment criteria and additional principles used for site selection in the UK (from McLeod *et al.* (in press))

Site assessment criteria (Annex II species)	References
Proportion of UK population	Annex III Stage 1B(a); Article 1i; Conclusions of 1994 Atlantic Biogeographical Region Meeting (para. 7).
Conservation of features important for species' survival	Annex III Stage 1B(b); Article 1i.
Isolation of species populations	Annex III Stage 1B(c); Conclusions of 1994 Atlantic Biogeographical Region Meeting (para. 7).
Global assessment	Annex III Stage 1B(d).
Additional principles	
Priority/non-priority status	Annex III Stage 1D; Article 1d; Conclusions of 1994 Atlantic Biogeographical Region Meeting (para. 3).
Geographical range	Articles 1e and 3.1.
Special UK responsibilities	Article 3.2; Conclusions of 1994 Atlantic Biogeographical Region Meeting (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).

This section outlines how these site assessment criteria and additional principles will be applied to species and their habitats in the UK offshore area. Relevant extracts of text from the Directive and Annexes, and from the Atlantic Biogeographical Meeting in Edinburgh in 1994 (Hopkins & Buck 1995) are referred to in the following sections. The selection criteria and additional principles outlined above are unlikely to change, and there are currently no indications of imminent changes to the list of species in Annex II to the Directive. The scientific information on the Annex II species which occur in the UK offshore area in the following sections of this paper, however, is based on currently available knowledge, which in the offshore environment is scarce and continually developing. It is provided here only as an *indication* of the aspects of the relevant species and their habitats which are likely to be used to assist in site selection.

3.2.1. Application of Habitats Directive Annex III Stage 1B criteria

3.2.1.1. Proportion of UK population

Habitats Directive Annex III Stage 1B (a): "Size and density of the population of the species present on the site in relation to the populations present within national territory."

Atlantic Biogeographical Region Meeting Conclusions, paragraph 6: "Where Annex II species populations are too small to be naturally viable, or where they occur only as vagrants or reintroduction, Member States may exclude them from consideration for site selection." (Hopkins & Buck 1995).

The Explanatory Notes to the Natura 2000 Standard Data Form (EC 1995) explain that this criterion exists to evaluate the relative size or density of the population in the site with that of the national UK population.

Defining boundaries for sites which support a given percentage of the UK population of any mobile species occurring in UK offshore waters will be extremely difficult. This is due to the lack of natural boundaries (such as coast, topographical boundaries, etc.) in the open sea, the wide ranging behaviour of the species, and the mobile and wide ranging nature of the prey of the Annex II species concerned. In addition, as noted in EC (1995), the size of the national population is often difficult to evaluate, and again, this is likely to be more difficult for wide ranging species occurring in offshore waters than for many terrestrial or inshore species.

3.2.1.2. Conservation of features important for species survival

Habitats Directive Annex III Stage 1B (b): “Degree of conservation of the features of the habitat which are important for the species concerned and restoration possibilities.”

The Explanatory Notes to the Natura 2000 Standard Data Form (EC 1995) explain that this criterion comprises two sub-criteria:

- i. Degree of conservation of the features of the habitat important for the species - a global evaluation of the features of the habitat regarding the biological requirements of a given species;
- ii. restoration possibilities - an evaluation of the viability of the population and potential for restoration; to be taken into account only when the elements are in an average or partially degraded condition.

To define sites using this criterion it is necessary to understand which habitat features are of importance for the species being considered. For wide ranging marine species, identifiable sites used for breeding and feeding are obviously important to that species' life and reproduction. There may also be identifiable sites used for other purposes which may be important for the species. However, whether any such site is “a clearly identifiable area representing the physical and biological factors essential to the life and reproduction” of the relevant species (Habitats Directive Article 4.1) will need to be determined.

If a site's features are seen to be in average or partially degraded condition then an evaluation of how possible it would be to restore the features to a well conserved condition needs to be made.

Grey seal (*Halichoerus grypus*), common seal (*Phoca vitulina*)

Common and grey seals are restricted to breeding on land, and do so in the UK at a number of shore sites, the principal ones of which are already identified as candidate SACs (i.e. submitted to the EC by UK Government) in the terrestrial and inshore SAC series. Current data on the distribution of seals in UK waters (away from breeding and haul-out sites) are relatively sparse, and are not comprehensive in terms of UK coverage. They consist of tagging studies of grey seals from a selection of breeding sites (see Figure 3.1), and of more limited tagging studies of common seals in the Moray Firth (McConnell *et al.* 1999; Thompson *et al.* 1996). These studies indicate that grey seals from those breeding sites studied, forage in a number of known areas, some of them separate from breeding colonies, in inshore as well as offshore waters. Distribution of common seals at sea is not known, although studies have indicated that they tend to have a more inshore distribution and do not appear to travel as widely as do grey seals.

It may be possible to define SACs for essential feeding areas, but there are inherent difficulties in defining fixed sites as feeding areas for mobile species such as seals, which feed on other mobile species such as fish. In the case of sandeels, a known prey species of grey seal, they tend to be less mobile than other fish, and are associated with particular types of seabed and water depth, therefore it may be possible to define areas important for sandeel, and consequently, for grey seals, and then to determine if such areas are “essential to their life and reproduction”.

Bottlenose dolphin (*Tursiops truncatus*)

Bottlenose dolphins breed at sea, and similarly to harbour porpoises, much less is known about their breeding and feeding than is known for seals. There are two main areas of occurrence of bottlenose dolphin in UK nearshore waters – off north-east Scotland/Moray Firth and in Cardigan Bay. Smaller groups occur in other areas (Reid *et al.* in prep., and see Figure 3.2). These inshore groups appear to be reasonably resident within their home ranges, but may be visited by animals from elsewhere. Three SACs have been proposed in the UK waters to protect the two main areas of occurrence in the Moray Firth and Cardigan Bay. There is some evidence of genetic differentiation of animals between these two home ranges in inshore waters. In offshore waters, bottlenose dolphins can occur in large groups, but these groups appear to be very mobile usually in waters beyond the shelf break. This inshore/offshore differentiation in habit has led to suggestions that this might be the result of two separate species. There is currently no evidence in offshore waters for sub-populations of animals occurring in different areas, nor of ‘home ranges’.

Harbour porpoise (*Phocoena phocoena*)

Harbour porpoises breed at sea and much less is known about their breeding and feeding than is known for seals. Harbour porpoises are highly mobile, and well distributed around UK coasts with the exception of the English Channel and the south-east of England (Reid *et al.* in prep. and see Figure 3.3). There is some genetic evidence pointing at some sub-structuring of the population using UK waters. Broadly there is differentiation between those living in the northern and southern North Sea, and those living south-west of the UK (e.g. Andersen *et al.* in press). Too little is known about the biology of the species as yet to draw conclusions about whether some parts of the range are more important for breeding than other parts. There is as yet no evidence of specific habitat requirements for mating and calving in UK waters (DETR *et al.* 2000).

The difficulty of identifying sites ‘essential to the life and reproduction’ of harbour porpoise (see Section 3.2) to propose as SACs, has meant that there have been very few proposals from EU member states for such sites. An ad hoc meeting convened by the European Commission on 14 December 2000 concluded that “it is possible to identify areas representing crucial factors for the life cycle of this species” (see below). These areas would be identifiable on the basis of:

- The continuous or regular presence of the species (although subject to seasonal variations);
- good population density (in relation to neighbouring areas);
- high ratio of young to adults during certain periods of the year.

Additionally, other biological elements are characteristic of these areas, such as very developed social and sexual life. Therefore, DG Environment advocates an approach

based on the above mentioned characteristics and suggests that this be applied with a view to site selection for this species (EC 2001a).

The UK is therefore re-examining distribution data for harbour porpoise in all of its waters (both inshore and offshore), to attempt to identify whether there are areas within which sites may be proposed as SACs for this species, taking the above into account.

3.2.1.3. *Isolation of species populations*

Habitats Directive Annex III Stage 1B (c): “Degree of isolation of the population present on the site in relation to the natural range of the species.”

Atlantic Biogeographical Region Meeting Conclusions, paragraph 7): “Where Annex II species populations are too small to be naturally viable, or where they occur only as vagrants or reintroduction, Member States may exclude them from consideration for site selection.” (Hopkins & Buck 1995)

The Explanatory Notes to the Natura 2000 Standard Data Form (EC 1995) indicate that this is an approximate measure of the contribution of a given population to the genetic diversity of the species and of the fragility of the specific population at the site being considered. This criterion has been found to be relevant to only a small number of terrestrial species populations in the UK in previous selection of sites (Brown *et al.* 1997).

None of the Annex II species occurring in offshore waters are considered to be isolated populations, mainly due to their mobility and the continuous nature of the marine environment.

3.2.1.4. *Global assessment*

Habitats Directive Annex III Stage 1B (d): “Global assessment of the value of the site for conservation of the species concerned.”

The Explanatory Notes to the Natura 2000 Standard Data Form (EC 1995) indicate that this criterion is used to sum up the previous criteria and also to assess other features of the site thought to be relevant for a given species using best expert judgement.

3.2.2. **Additional principles which should be taken into account in site selection for Annex II species**

3.2.2.1. *Priority/Non-priority species*

Habitats Directive Article 1(h): “*priority species* means species referred to in (g) (i) for the conservation of which the Community has particular responsibility in view of the proportion of their natural range which falls within the territory referred to in Article 2;”

Atlantic Biogeographical Region Meeting Conclusions, paragraph 3: “Member States will give significant additional emphasis in number and area to sites containing priority habitat types and species.” (Hopkins & Buck 1995)

None of the species that are being considered in UK offshore waters have priority status.

3.2.2.2. *Geographical range*

Habitats Directive Article 3 (1): “A coherent European ecological network of special areas of conservation shall be set up under the title Natura 2000. This network, composed of

sites hosting the ... habitats of the species listed in Annex II, shall enable the ... species' habitats concerned to be maintained or, where appropriate, restored at a favourable conservation status in their natural range.”

Favourable conservation status of each Annex II species is dependent upon the maintenance of the geographical range of the species. Therefore, the site series for each species should be chosen to reflect its distribution in the UK. However, where a very high proportion of the resource for a relatively widespread species type occurs, a high proportion of sites may be chosen in that vicinity (Brown *et al.* 1997).

Seals

Both common and grey seals occur throughout UK waters, although both are only infrequently seen in the English Channel. Common and grey seals have slightly different breeding and haul-out habitat preferences; grey seals are concentrated in the north and west of the UK, and common seals occur in the north and west, and also occur in more southerly waters of the North Sea. Inshore SACs for breeding and haul-out sites have been selected to represent the geographical range of each species. It is likely that due to the relative lack of knowledge of the distribution of seals in offshore waters, particularly for common seals, there will be little opportunity to select a range of offshore sites to represent the full geographical range for seals in UK offshore waters. If essential feeding sites could be identified, sites would be selected in the North Sea (possibly southern and northern), northern, north-western and western parts of the UK offshore area to reflect the distribution of seal species in UK waters.

Bottlenose dolphin

Bottlenose dolphin are widely distributed in UK waters, with the exception of the southern North Sea and English Channel, where their range and numbers have declined. Inshore SACs have been selected for this species to represent the geographical range for its occurrence inshore. There is a possibility that bottlenose dolphin in offshore waters form a separate population to those recorded in inshore waters. If it is possible to identify sites 'essential to their life and reproduction', offshore sites should be selected as well as those inshore, to represent that part of the species' geographical range.

Harbour porpoise

Harbour porpoise are widely distributed in all continental shelf waters around the UK, with the exception of the southern North Sea and the English Channel, where there has been an apparent reduction in numbers. Given the difficulties in selecting any sites for this species which represent factors 'essential to their life and reproduction', due to lack of knowledge of the ecology and distribution of this species as well as its wide ranging nature, it is likely that the opportunities to select sites representing different parts of its geographical range will be few.

3.2.2.3. Special UK responsibility/proportion of European population

Habitats Directive Article 3 (2): “Each Member State shall contribute to the creation of Natura 2000 in proportion to the representation within its territory of the Habitats of species referred to in paragraph 1.”

Atlantic Biogeographical Region Meeting Conclusions, paragraph 6: “It is acknowledged that certain habitat types and species listed in Annexes I and II are relatively common and extensive in certain Member States. These Member States will have particular

responsibility for proposing a proportion of the resource that is sufficient to contribute significantly to the maintenance of the ... species at a favourable conservation status” (Hopkins & Buck 1995).

In relation to the European Union populations, UK waters probably hold proportions above 30% of all four marine mammal species on Annex II of the Directive, with the grey seal population being of especial importance.

3.2.2.4. *Multiple interest*

Atlantic Biogeographical Region Meeting Conclusions, paragraph 2: “Acknowledging that outstanding single interest sites in terms of quality, extent or range make an important contribution to the Natura 2000 network, special emphasis will be given to identifying and delimiting sites containing complexes of interests on Annexes I and II as valuable ecological functional units.” (Hopkins & Buck 1995)

It is quite likely that foraging sites identified in offshore waters for any of the four Annex II species occurring in offshore waters, would be used by several or all of the species at various times. This is due to the overlap in prey species taken by the Annex II species concerned. It is also quite likely that there may be multiple interest with the Annex I sandbank habitat in shallow offshore waters, as this habitat is used by sandeel, which are a prey item for several of the Annex II species concerned. The latter aspect of multiple interest will be considered when determining any site boundaries for any of the Annex II species. The EU interpretation of the Annex I sandbank habitat as being ‘seldom more than 20m below chart datum’ (EC 1999), will, however, need to be considered when determining the extent of any sandbank site which may also be of importance to Annex II species, as significant sandeel populations occur in sandbank habitat at much greater depths than 20m bcd.

3.2.2.5. *Rarity*

Directive text: None

Atlantic Biogeographical Region Meeting Conclusions, paragraph 5: “Acknowledging that sites containing Annex I habitat types and Annex II species at the centre of their range will make an important contribution to Natura 2000, Member States will take responsibility for proposing sites containing habitats and species that are particularly rare in that Member State with a view to preserving the range.” (Hopkins & Buck 1995)

Grey seal, common seal and harbour porpoise are not considered rare in UK waters. Although widely distributed in UK waters, bottlenose dolphin occur in much lower numbers in UK offshore waters than do harbour porpoise. Numbers and range of both cetacean species appear to be declining, in particular in the English Channel (Evans 1993).

3.3. Information on Annex II species

3.3.1. Grey seal (*Halichoerus grypus*)

The following represents a brief summary of what is known of the distribution of grey seals. It is not a comprehensive review of their biology and distribution in UK waters. Estimates for the UK population of grey seals are obtained by the Sea Mammal Research Unit (SMRU) for the UK Government by modelling the population using annual aerial

surveys of grey seal pups from major breeding colonies in England and Scotland. Figures for Wales are based on annual counts taken between 1991 and 1994 (Baines *et al.* 1995). Information on the distribution of grey seals in marine areas other than at haul-out breeding sites is relatively sparse. Tracking studies by the Sea Mammal Research Unit (McConnell *et al.* 1999 and McConnell pers. comm.) provide some information about the areas where grey seals forage and the distances they travel. However, these studies are restricted to a small number of animals from a small number of haul-out sites, mostly in Scotland and eastern England. Conclusions drawn from these data may, therefore, not be applicable to animals breeding at other sites, nor to non-breeding animals.

Figure 3.1 shows tracks of grey seals from Abertay, Farnes, Orkney, Shetland and the Monach Isles, as an example of their patterns of distribution. The work from which this figure was derived indicates that grey seals are central place foragers, but that the central place can move (McConnell, pers. comm.). The seal movements were on two geographical scales: long and distant travel (up to 2100 km); and local, repeated trips from haul-out sites to discrete offshore areas. Long distance travel (of animals from the Farnes) included visits to Orkney, Shetland and the Faeroes, mostly to other known haul-out sites, and far offshore into the Eastern Atlantic and the North Sea. The large distances travelled indicate that grey seals that haul-out at the Farnes are not ecologically isolated from those at Orkney, Shetland and the Faeroes. Most trips to sea were, however, of 2-3 days duration, less than 40 km from the haul out site, and with the animal returning to the same haul-out site from which it departed. Destinations at sea were often localised areas characterised by a gravel/sand seabed. This is the preferred burrowing habitat of sandeels, which can form an important part of grey seal diet.

Studies of seal movements and diet in the Irish Sea were investigated in a transnational mark-recapture study between 1996 and 1998. Individual seals were observed to have travelled freely across the Irish Sea. Prey occurrence in the diet varied with geographic location of the haul-out site (Kiely *et al.* 2000).

As these studies only relate to a relatively small number of animals from a limited number of haul-out sites, it is not known if these conclusions may be applicable to the rest of the grey seal population in the UK. The ESAS (European Seabirds at Sea) database includes records of seals (both grey and common), but these are too few to be of use in delimiting important areas.

3.3.2. Common (or harbour) seal (*Phoca vitulina*)

The following represents a brief summary of what is known of the distribution of common seals. It is not a comprehensive review of their biology and distribution in UK waters. Population data for common seal are obtained by SMRU by counting seals at haul-out sites during the annual moult. However, these surveys are infrequent (approximately once every 5 or 6 years). Data on the distribution of common seals at sea are even more sparse than for grey seals. Studies at Aberdeen University and the Sea Mammal Research Unit (Thompson 1996) on those in the Moray Firth indicate that common seals have a more inshore distribution at sea than do grey seals, and tend to forage within 75 km of haul-out sites. Moray Firth common seals appeared to be a relatively discrete population, with little exchange of adults between the Moray Firth and adjacent breeding areas in Orkney and the Tay Estuary. To date, there have been no similar satellite tracking studies of common seal, due to technical difficulties in attaching the tracking devices.

Again, studies only relate to a small number of animals from a very limited number of haul-out sites, and it is not known if these conclusions may be applicable to the rest of the common seal population in the UK.

3.3.3. Bottlenose dolphin (*Tursiops truncatus*)

The Joint Cetacean Database, contributed to by the Joint Nature Conservation Committee, SeaWatch Foundation and SMRU contains most, but not all, effort-related cetacean data for north-west European waters up to 1998. Effort-related data from this database have been used to produce Figure 3.2, showing the distribution of bottlenose dolphin for north-west European waters (Reid *et al.* in prep.).

Bottlenose dolphin are distributed throughout UK waters with the exception of the southern North Sea and English Channel, where their range has declined. The estimated population for UK inshore waters is 300-500 individuals (Brown *et al.* 1997). Much less is known about the distribution of this species in offshore waters than in inshore waters. It appears to be widespread in much lower numbers than harbour porpoise (Reid *et al.* in prep.), but with records concentrated inshore around the western coasts of Wales, north-east Scotland and the Moray Firth, and a few other areas. Bottlenose dolphins are present in a wide range of habitats throughout the world and precise habitat requirements for the species are largely unknown. Bottlenose dolphins are generalist and opportunistic feeders (Arnold 2000), and food resources appear to be a primary factor in determining movements and site fidelity (Wells *et al.* 1990).

3.3.4. Harbour porpoise (*Phocoena phocoena*)

The Joint Cetacean Database described above also has records for harbour porpoise in UK waters. Effort-related data from this database have been used to produce Figure 3.3, showing the distribution of harbour porpoise for north-west European waters (Reid *et al.* in prep.). Harbour porpoise are widely distributed throughout the North Sea and in western UK waters (see Figure 3.3). They are rarely recorded in the southern North Sea and eastern English Channel. The estimated numbers of harbour porpoise using UK territorial waters (i.e. within 12 nm of the coast) at any one time, based on one survey, is of the order of 60,000 (DETR *et al.* 2000). Although harbour porpoise are widely distributed in UK offshore waters, current modelling of effort-related distribution data from the Joint Cetacean Database does not indicate any clearly identifiable areas where they are concentrated, and which could be deemed to represent “physical and biological factors essential to their life and reproduction” (see Section 3.2). Further data analysis is underway to try to identify areas for harbour porpoise in UK waters (see Section 6.2.4).

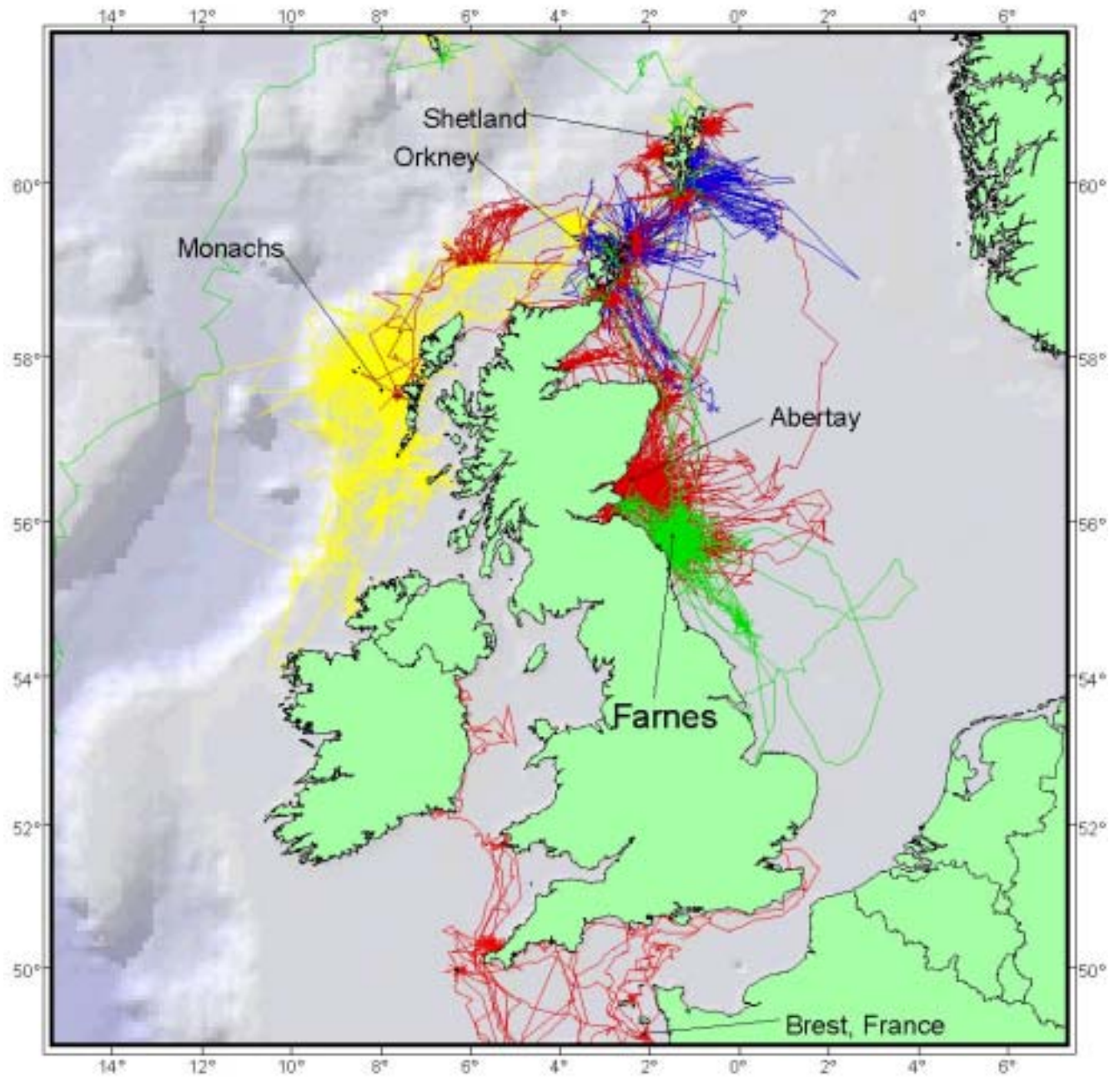


Figure 3.1 Grey seals tagged from colonies in the Farne Islands (green), Abertay (red), Shetland, Orkney, the Monach Isles (yellow) and Brest in France (red). The tracks represent 108 seals, with an average tracking duration of 80 days per seal (Sea Mammal Research Unit, unpublished data)

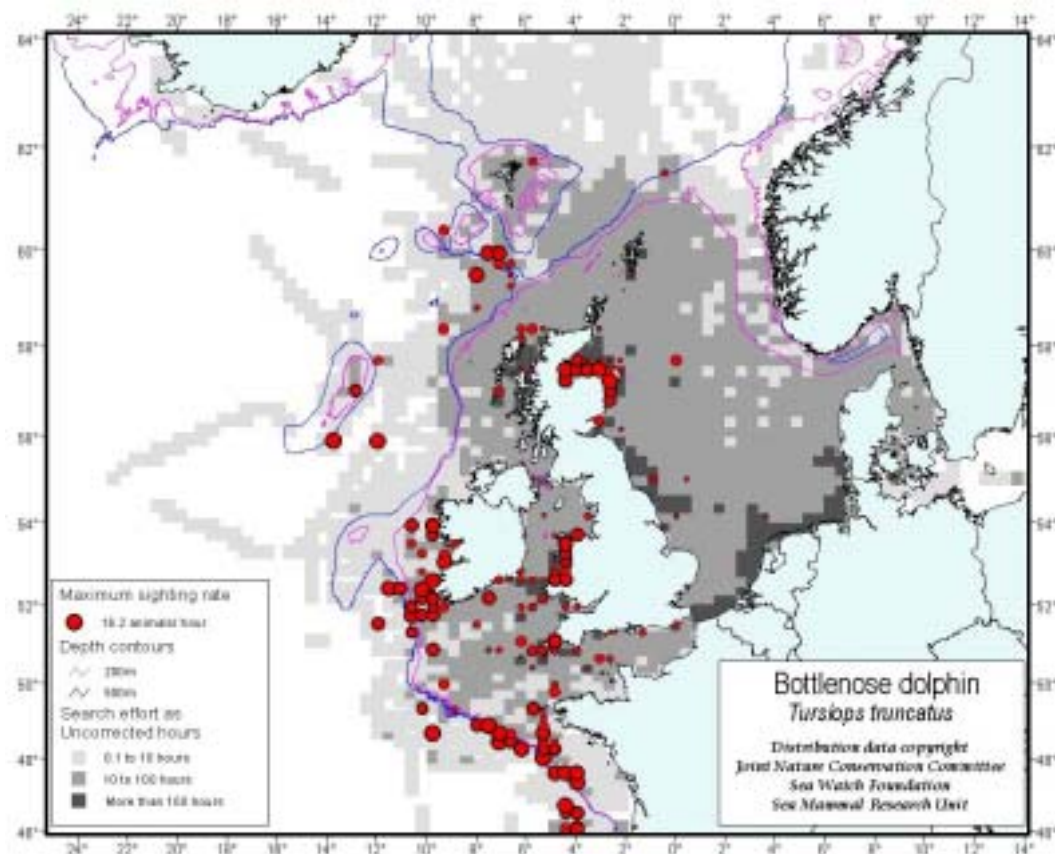


Figure 3.2 Distribution of bottlenose dolphin around the UK (Reid *et al.* in prep) © JNCC, SeaWatch Foundation and Sea Mammal Research Unit.

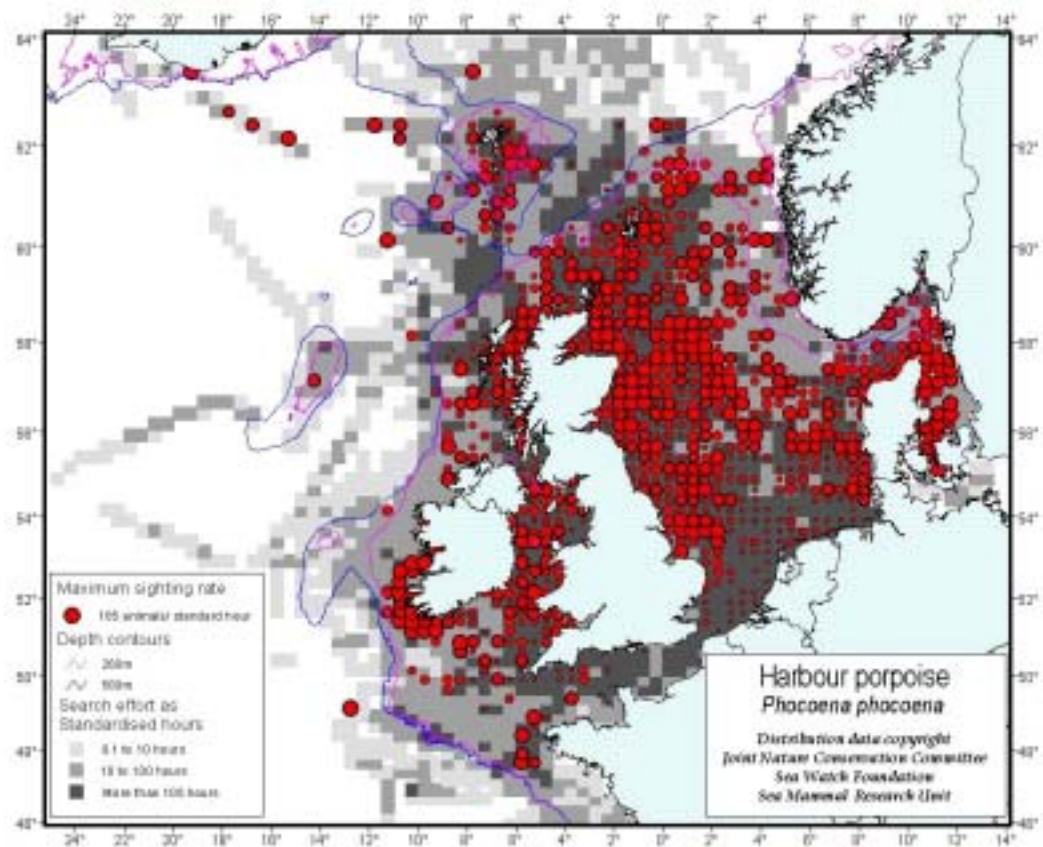


Figure 3.3 Distribution of harbour porpoise around the UK (Reid *et al.* in prep) © JNCC, SeaWatch Foundation and Sea Mammal Research Unit.

