

**European Community Directive
on the Conservation of Natural Habitats
and of Wild Fauna and Flora
(92/43/EEC)**

**Second Report by the United Kingdom under
Article 17
on the implementation of the Directive
from January 2001 to December 2006**

**Conservation status assessment for :
S1350: *Delphinus delphis* - Common dolphin**

Please note that this is a section of the report. For the complete report visit <http://www.jncc.gov.uk/article17>

Please cite as: Joint Nature Conservation Committee. 2007. *Second Report by the UK under Article 17 on the implementation of the Habitats Directive from January 2001 to December 2006*. Peterborough: JNCC. Available from: www.jncc.gov.uk/article17

S1350 *Delphinus delphis* Common dolphin

Audit trail compiled and edited by JNCC and the UK Inter-Agency Marine Mammal Working Group

This document is an audit of the data and judgements on conservation status in the UK's report on the implementation of the Habitats Directive (January 2001 to December 2006) for this species. Superscript numbers accompanying the headings below, cross-reference to headings in the corresponding Annex B reporting form. This supporting information should be read in conjunction with the UK approach for species (see 'Assessing Conservation Status: UK Approach').

1. Range Information^{2,3}

Delphinus delphis is mainly distributed off western coasts of Britain and Ireland in continental shelf waters and beyond the continental shelf edge (Map 1.1) (Weir *et al.* 2001; Reid *et al.*, 2003; Stone 2003), but the number using particular areas may vary considerably between seasons and years. The species occurs notably in the Celtic Sea and western approaches to the English Channel and off southern and western Ireland. Small numbers are also found close inshore in the Sea of the Hebrides.

1.1 Surface area of range^{2,3,1}

Unknown

D. delphis is known to use only a portion of UK waters (see Map 1.1), and this is highly variable both seasonally and inter-annually. Because of the migratory nature of this species, it would be difficult to estimate UK surface area with any degree of accuracy or certainty. For this reason, range area has been reported as unknown.

Range is a difficult parameter to define for marine mammals since they are highly mobile and their distribution can vary considerably in time and space across Member States. While understanding the distribution of marine mammal species might be helpful in assessing their conservation status and while range can be subjected to qualitative assessment, the data do not enable a quantitative estimate of surface area at present.

1.2 Date of range determination^{2,3,2}

Not applicable

1.3 Quality of range data^{2,3,3}

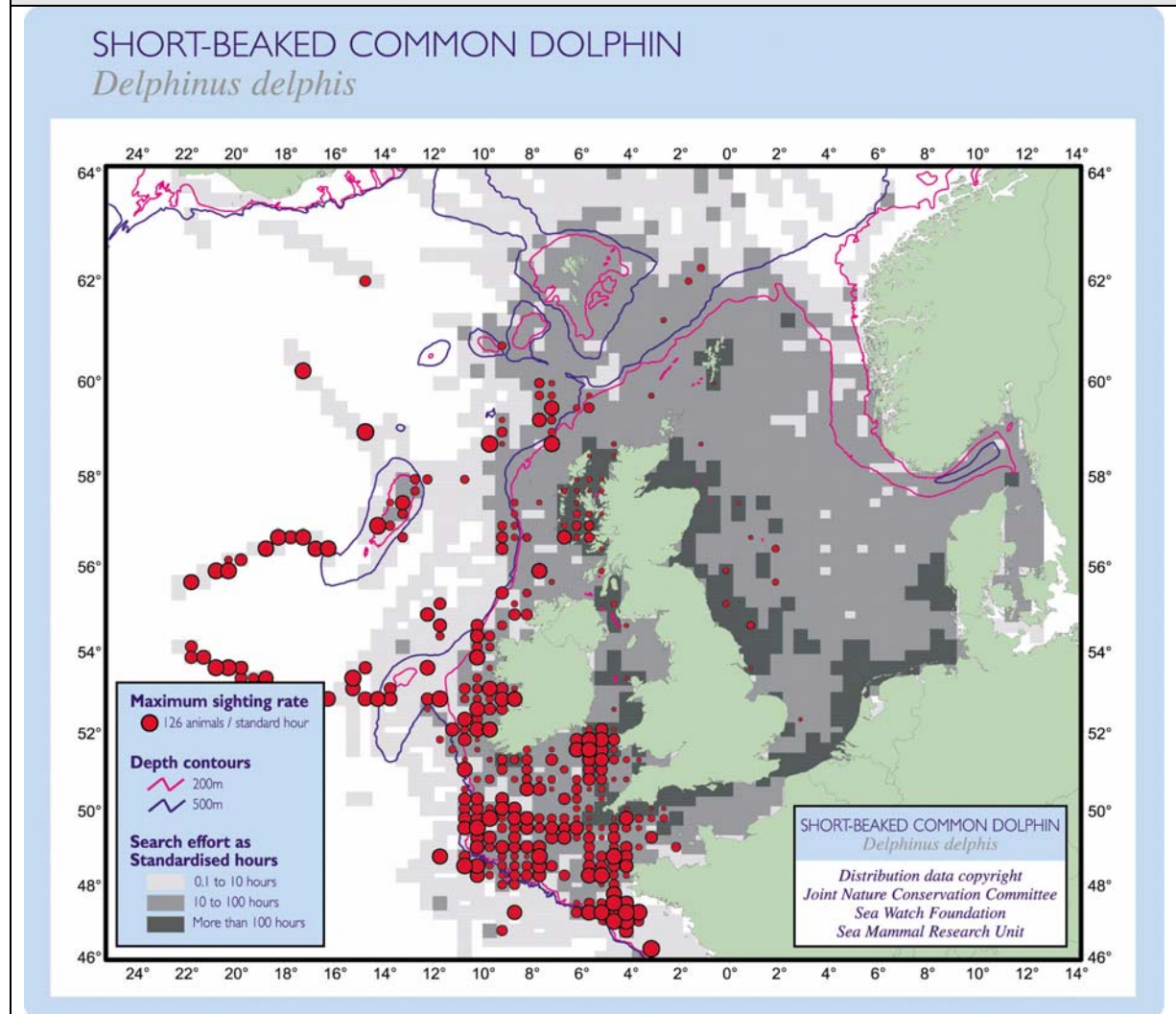
Moderate

As can be seen from Map 1.1, data does exist. However, it does not translate well to the proforma of this report. The SCANS and SCANS II survey has provided information on the distribution of this species in the European Atlantic continental shelf waters, in the summers of 1994 and 2005 respectively (Hammond and Macleod 2006). In addition, the SeaWatch Foundation national sightings database includes opportunistic sightings at sea by a large number of, mainly amateur, observers, together with some effort related data. This data (from 1979 up to 1998) was incorporated along with other datasets (SCANS and European Seabirds at Sea (ESAS) records) to produce the *Atlas of Cetacean Distribution in North-West European Waters* (Reid *et al.* 2003). The occurrence and range of this species off the continental shelf is not so well understood.

An area estimate for this species is not presented here. This could be done by modelling the area of occupancy using the data available, but it is considered that the effort involved in the modelling exercise would not justify the outcome.

A new project, Cetacean Offshore Distribution and Abundance (CODA), will start survey work in 2007 on the offshore distribution and abundance of dolphins which will improve our knowledge of this species.

Map 1.1. Known distribution of common dolphin in north-east Atlantic. Please note that these maps potentially hide spatial and temporal variation.
From Reid et al. 2003.



1.4 Range trend^{2.3.4} & Range trend magnitude^{2.3.5}

Stable

There has been no evidence of decline in range during recent years, or historically.

No apparent difference in range in the continental shelf area, when comparing the two SCANS surveys. However, there was no effort west of Britain and Ireland (except Celtic Sea) in 1994 and no effort in waters off the continental shelf. Marine mammals are wide-ranging, with large spatio-temporal variations in distribution and therefore it is very difficult to detect

trends in range, or to know if apparent changes are long-term changes in range or in distribution within their range.

1.5 Range trend period^{2.3.6}

1994 – 2005

The reported trend has been informed by the cetacean Atlas (Reid *et al.* 2003) and latest SCANS survey.

1.6 Reasons for reported trend in range^{2.3.7}

Not applicable

1.7 Favourable reference range^{2.7.1}

Unknown

Although a quantitative area estimate can not be provided, based on best expert judgement, current range has all significant ecological variations of the species included for a given biogeographical region, and is sufficiently large to be considered suitable for the survival of the species for the foreseeable future.

1.8 Range conclusion^{2.8}

Favourable

There has been no evidence of decline in range, and the current range (although not quantified in km²) is considered equivalent the favourable reference range based on best available information and expert judgement. Therefore, the conclusion for this parameter is Favourable.

2. Population of the species^{2.4}

2.1 Population estimate^{2.4.1}

Unknown

There is no reliable UK estimate for this species at present.

The sum of the estimated absolute abundances for all of the SCANS II survey areas that include UK waters was 29,600 individuals; but this only includes continental shelf waters in the following areas: south-central North Sea, north-central North Sea, northern North Sea, western Scotland and Irish outer shelf, Celtic Sea, southern North Sea and Channel, Scottish Northern Isles, coastal western Scotland and the Irish Sea.

SCANS II covered all European Atlantic continental shelf waters in June/July 2005 and estimated total abundance in the area as 63,366 (CV=0.46) (Hammond and MacLeod, 2006). Highest densities were recorded in the coastal waters of Ireland (0.40 per km²). Densities in the Channel area were 0.12 per km², 0.008 per km² in the Irish Sea and 0.076 per km² in coastal western Scotland. In the Celtic Sea, abundance was estimated to be 11,141 (CV = 0.61).

Common dolphins are also widely distributed offshore and the number of animals in the continental shelf area may vary substantially from year to year. Currently there are no abundance estimates for total UK waters since offshore areas were not surveyed during SCANS II.

In the north-east Atlantic this species is the most numerous offshore cetacean species (Weir *et al.* 2001; Reid *et al.* 2003).

There are no known local populations in UK waters, and those animals occurring in UK waters are part of a wider north-east Atlantic population.

2.2 Date of population estimate^{2.4.2}

Not applicable

2.3 Method of population estimate^{2.4.3}

Not applicable

2.4 Quality of population data^{2.4.4}

Moderate

The SCANS II survey used techniques to minimise known biases (missed animals and responsive movement were corrected for) together with extensive survey coverage and so provide the most precise absolute abundance estimates currently available and possible for cetaceans. For cetaceans it is impossible to get a full census. Improvements to current surveillance would include monitoring the waters off the continental shelf which so far have little survey effort and extend effort in coastal areas outside summer months to all seasons.

2.5 Population trend^{2.4.5} & Population trend magnitude^{2.4.6}

Unknown

The 1994 SCANS survey estimated abundance in the Celtic Sea to be 75,450 (CV = 0.67); the 2005 estimate was 11,141 (Hammond *et al.*, 1995). However, the 1994 estimate was not corrected for animals missed on the transect line or for responsive movement, and this is now known to generate significant positive bias. Therefore, it is unknown whether these results are indicative of a change in abundance. In addition, *D. delphis* is known to occur offshore and numbers on the continental shelf may vary considerably

2.6 Population trend period^{2.4.7}

1994 – 2006

2.7 Reasons for reported trend in population^{2.4.8}

Not applicable

2.8 Justification of % thresholds for trends^{2.4.9}

Not applicable

2.9 Main pressures^{2.4.10}

210 Professional fishing

313 Exploration and extraction of oil or gas

420 Discharges

490 Other urbanisation, industrial and similar activities

520 Shipping

701 water pollution

710 Noise nuisance

990 Other natural processes

Bycatch by a variety of fishing gear is the greatest anthropogenic threat to this species in the UK and adjacent waters. All other pressures, with the possible exception of noise, are believed to be potential threats with no evidence of actual harm to common dolphin conservation status. Between 2000 and 2004, post mortems of stranded animals indicated that 61.1% of these died as a result of bycatch and a further 15.3% as a result of live strandings (Jepson, 2006). Additionally, two incidences of death as a result of gas emboli were also reported during this period (Jepson et al., 2005). The UK has been concerned about the levels of cetacean bycatch in fisheries for a number of years, funding research to identify which fisheries are responsible for bycatch and research on mitigation measures to reduce this bycatch to as low a level as possible. In recent years the UK has been monitoring many fisheries in the south-west of England during the winter to fulfil its obligations under the 812/04 regulation and the Habitats Directive. A very high proportion of fishing effort (>90% in 2005/6) in the bass pair trawl fishery has been monitored, and annual estimates of bycatch have been produced since 2001, averaging just under 200 per year. It is clear that several other fisheries operating in this general area also have some level of bycatch but this has yet to be quantified.

As most fisheries in which cetacean bycatch is an issue are also targeted by other Member States of the European Union, it is important that coordinated action is taken such as that proposed by Regulation 812/2004. The UK is currently monitoring dolphin bycatch in particular fisheries, and has gone beyond that required by 812/2004, with the inclusion of vessels <15m.

In other areas there is evidence that the decline of high-order marine predators such as *D. delphis* feeding on epipelagic prey could be linked to prey depletion, likely resulting from intensive exploitation of local fish stocks, particularly anchovies and sardines in the central Mediterranean (Bearzi *et al.* 2006).

Between 1992 and 2004, five incidences of gas embolism have been identified in *D. delphis* in UK waters. Although the causes are unknown, a decompression-related mechanism involving embolism of intestinal gas or de novo gas bubble (emboli) development derived from tissues supersaturated with nitrogen during rapid surfacing is suspected (Jepson *et al.* 2005; Jepson 2006).

It is unlikely that any one of these pressures could affect this species long-term viability in UK waters, but the combined action of the pressures might possibly affect the species. Often with cetaceans it is difficult to link cause and effect and to distinguish natural from human impacts.

2.10 Threats^{2.4.11}

210 Professional fishing

701 water pollution

971 Competition

990 Other natural processes

Bycatch, water pollution and changes in prey availability and distribution may continue to affect this species but if controlled this should not threaten the long term viability of the species in UK waters. An analysis of stranding records between 1948 and 2003 in north-west Scotland found an increase in common dolphin recorded strandings in recent years, associated with increased sightings which could be linked with local increases in water temperature (MacLeod *et al.* 2005).

2.11 Favourable reference population^{2.7.2}

Unknown

Post-1994 population abundance trends are unknown. In addition, there is currently insufficient information available on *D. delphis* numbers in offshore waters

2.12 Population conclusion^{2.8}

Unknown

There is currently insufficient information available on *D. delphis* numbers in offshore waters as well as on trends in abundance to assess their conservation status with any degree of confidence.

3. Habitat for the species in the Biogeographic region or sea^{2.5}

Cetacean habitats (e.g. feeding and breeding areas) vary temporally and spatially and are influenced by natural and anthropogenic factors (e.g. Ingram et al., 2007; MacLeod et al., 2007; Weir et al., 2007). It is often difficult to determine what features characterise cetacean habitats and in quantifying their extent.

This species is widely recorded over continental shelf waters and offshore. There appears to be a winter aggregation in the western channel, where densities are much higher than in summer. Common dolphin distribution has been linked to prominent topography such as sea mounts and escarpments (Evans *et al.* 2003) and also to sea surface temperature and local primary productivity (MacLeod et al., 2007).

There are possible limiting factors to use of some areas such as bycatch, prey depletion and pollution.

3.1 Surface area of habitat^{2.5.2}

Unknown

As with other cetaceans, the surface area of their habitat is difficult to quantify and may vary significantly seasonally and between years.

3.2 Date of estimation^{2.5.3}

Not applicable

3.3 Quality of data on habitat area^{2.5.4}

Poor

No information is available on habitat area.

3.4 Habitat trend^{2.5.5}

Unknown

Habitat trend information is not available.

3.5 Habitat trend period^{2.5.6}

1994 – 2006

3.6 Reasons for reported trend in habitat^{2.5.7}

Not applicable

3.7 Suitable habitat for the species (in km²)^{2.73}

Unknown

3.8 Habitat conclusion^{2.8}

Favourable

Although there is an acknowledged difficulty associated with defining habitats for cetaceans, the judgement of Favourable was based on the relatively high level of spatial and temporal variability in the behaviour and ecology of all cetaceans. Additionally, where range and/or population is considered to be in a Favourable condition, it has been assumed that habitat must also be considered to be Favourable.

4. Future Prospects^{2.6}

Unknown

There is insufficient information to make a judgement on future prospects at this time.

Since 1994, conservation measures have been undertaken in the UK and adjacent waters, to protect, survey and monitor marine mammal abundance, health and distribution. These are discussed below. However, in the absence of current population trend data, and uncertainty about the effects of bycatch it is not possible to make a confident judgement regarding their effectiveness in protecting this species, or likely success over the next 12 years. For this reason, despite the measures discussed below, prospects have been reported as unknown for this reporting round.

Threats, Legislation and Conservation Action

It is important to stress that many human activities that have the potential to affect the assessed species are already regulated with the conservation of marine mammals and other wildlife in mind. Assuming that these measures are maintained and further measures are taken should other pressures emerge, then the future prospects for cetacean species in UK waters should be favourable. However, the effects of lesser understood impacts are hard to predict. Many cetaceans occurring in UK waters will also use waters of other Member States and those of non-Members, so coordination of conservation measures through, for instance ASCOBANS (Agreement on the Conservation of Small Cetaceans in the Baltic and North Seas) is essential to avoid activities in other waters affecting the animals occurring in UK waters.

In the UK, the Habitats Directive is being implemented by identifying and protecting appropriate sites and monitoring bycatch. To further implement the directive, a surveillance strategy for cetaceans is being developed linking to a proposed Joint Cetacean (data handling) Protocol that hopes to get contributors from different countries in Europe in order to enable transboundary approaches to evaluating the conservation status of cetaceans. It is expected that an update of the *Atlas of cetacean distribution in north-west European waters*, published by Joint Nature Conservation Committee (JNCC) in 2003, will result from this project. In 2005, the UK was a major supporter of the EU LIFE Nature project SCANS-II project which completed a survey for cetaceans in the European Atlantic continental shelf and will make recommendations for monitoring cetacean populations. A new project, CODA 2007 (Cetacean Offshore Distribution and Abundance) aims to estimate abundance of cetaceans, and investigate their habitat preferences in European Atlantic waters off the continental shelf to the north of Portugal.

The UK is implementing the European Council Regulation EC 812/2004, which lays down measures concerning incidental catches of cetaceans in fisheries, and more generally the bycatch obligations within the Habitats Directive. The *UK small cetacean bycatch response strategy* was published in 2003 and is being implemented through research and monitoring into the extent of bycatch and mitigation measures.

Legislation has been reviewed in order to provide these species with extra protection from disturbance. In addition, Scottish Natural Heritage (SNH) recently produced the *Scottish Marine Wildlife Watching Code*, designed to protect and promote enjoyment and to raise awareness about how best to watch marine wildlife with minimal disturbance.

JNCC has developed guidelines aimed at minimising the risk of acoustic disturbance to marine mammals from seismic surveys that are being implemented by the Department of Trade and Industry. Further guidance will be developed in 2007-2008 on other activities that disturb cetaceans. The UK Ministry of Defence (MOD) has undertaken a number of measures during 2005 to address the potential impact of military sonar and noise in the marine environment.

The UK government funds a national strandings scheme which aims to provide a coordinated approach to the investigation of cetacean strandings in order to assess the number and trends of stranded cetaceans, and potential causes of death.

As a response to the 1992 Convention on Biological Diversity the UK has developed biodiversity action plans (BAP) for all cetacean species. The long term goal of these plans is to increase the range and number of cetaceans in UK waters, ultimately via reducing anthropogenic mortalities and impacts. The UK has been committed to supporting several international agreements and conventions on the conservation of marine mammals and the marine environment in general (e.g. ASCOBANS, The Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR)).

The UK's position within the International Whaling Commission (IWC) has been, amongst others, to support the moratorium on commercial whaling, to work towards placing the issue of environmental threats to cetaceans permanently on the IWC agenda and to ensure that international trade in whale products is prohibited.

4.1 Future prospects conclusion^{2.8}

Unknown

5. Overall Assessment^{2.8}

Unknown

Range and Habitat have been reported as Favourable; Population and Prospects have been reported as Unknown. Therefore, in accordance with the guidance, the Overall Conclusion is Unknown.

Table 5.1 Summary of conclusions

Parameter	Judgement	Grounds for Judgement (in accordance with Annex C)	Reliability*
Range	Favourable	Current range is stable and not smaller than the favourable reference range	2
Population	Unknown	No or insufficient reliable information available	N/A
Habitat	Favourable	Area of habitat is sufficiently large and habitat quality is suitable for the long term survival of the species	2
Future Prospects	Unknown	No or insufficient reliable information available	N/A
Overall Assessment	Unknown	No or insufficient reliable information available	N/A

*1=High, 2=Moderate, 3=Low

High – Expert opinion is that the concluding judgement accurately reflects the current situation based on a professional understanding of the species. For range, population, and habitat, quality of data used to establish the current estimate has been identified as “good”; data used to inform trends is comprehensive and up to date.

Moderate – A greater understanding of the feature, or the factors affecting it, is required before a confident concluding judgement can be made by experts. For range, population, and habitat, the current estimate and/or trend are based on recent, but incomplete or limited survey data; or alternately, a comprehensive, but outdated (pre-1994) review.

Low – Judgements, and comprising estimates, are based predominately on expert opinion.

N/A – Assessment conclusion is “unknown”, on the basis of insufficient reliable information.

6. Other relevant information^{2.7.4}

Range is a difficult parameter to define for marine mammals since they are highly mobile and their distribution can vary considerably in time and space across Member States. While understanding the distribution of marine mammal species might be helpful in assessing their conservation status and while range can be subjected to qualitative assessment, the data do not enable a quantitative estimate of surface area at present.

A new project, CODA (Cetacean Offshore Distribution and Abundance) 2007 - in which the common dolphin is a target species - aims to estimate abundance, and investigate habitat preferences in European waters outside the continental shelf.

7. References

BEARZI, G., POLITI, E., AGAZZI, S. & AZZELLINO, A. 2006. Prey depletion caused by overfishing and the decline of marine megafauna in eastern Ionian Sea coastal waters (central Mediterranean). *Biological Conservation*, **127**, 373-382.

EVANS, P.G.H., ANDERWALD, P. & BAINES, M.E. 2003. *UK Cetacean Status Review*. Report to English Nature and the Countryside Council for Wales. 159

HAMMOND, P.S., BENKE, H., BERGGREN, P., BORCHERS, D.L., BUCKLAND, S.T., COLLET, A., HEIDE-JØRGENSEN, M.P., HEIMLICH-BORAN, S., HIBY, A.R., LEOPOLD, M.F. & ØIEN, N. 1995. *Distribution and abundance of the harbour porpoise*

and other small cetaceans in the North Sea and adjacent waters. Final report under European Commission, Project LIFE 92-2/UK/027. Sea Mammal Research Unit, Gatty Marine Laboratory, University of St Andrews, Fife, UK.

HAMMOND, P.S. & MACLEOD, K. 2006. *SCANS II – Report on Progress*. Document Paper prepared for ASCOBANS 5th Meeting of the Parties, Netherlands, September, 2006. MOP5/Doc. 26.

INGRAM, S.N., WALSH, L., JOHNSON, D. & ROGAN, E., 2007. Habitat partitioning and the influence of benthic topography and oceanography on the distribution of fin and minke whales in the bay of Fundy, Canada. *Journal of the Marine Biological Association of the United Kingdom*, **87**, 149-156.

JEPSON, P.D. (Ed) 2006. *Trends in cetacean strandings around the UK coastline and cetacean and marine turtle post-mortem investigations, 2000 to 2004 inclusive*. Defra Contract CRO 238.

JEPSON, P.D., DEAVILLE, R., PATTERSON, I.A.P., POCKNELL, A.M., ROSS, H.M., BAKER, J.R., HOWIE, F.E., REID, R.J., COLLOFF, A. & CUNNINGHAM, A.A. 2005. Acute and chronic gas bubble lesions in cetaceans stranded in the United Kingdom. *Veterinary Pathology*, **42**, 291-305

MACLEOD, C.D., BANNON, S.M., PIERCE, G.J., SCHWEDER, C., LEARMONTH, J.A., HERMAN, J.S. & REID, R.J. 2005. Climate change and the cetacean community of north-west Scotland. *Biological Conservation*, **124**, 477-483.

MACLEOD, C.D., WEIR, C.R., PIERPOINT, C. & HARLAND, E.J., 2007. The habitat preferences of marine mammals west of Scotland. *Journal of the Marine Biological Association of the United Kingdom*, **87**, 157-164.

REID, J.B., EVANS, P.G.H. & NORTHRIDGE, S.P. 2003. *Atlas of cetacean distribution in north-west European waters*. Joint Nature Conservation Committee, Peterborough.

STONE, C.J., 2003. *The effects of seismic activity on marine mammals in UK waters, 1998-2000*. Peterborough: Joint Nature Conservation Committee Report No. 323

WEIR, C.R., POLLACK, C., CRONIN, C. & TAYLOR, S. 2001. Cetaceans of the Atlantic Frontier, north and west of Scotland. *Continental Shelf Science*, **21**, 1047-1071.

WEIR, C.R., STOCKIN, K.A. & PIERCE, G.J., 2007. Spatial and temporal trends in distribution of harbour porpoises, white-beaked dolphins and minke whales off Aberdeenshire (UK), north-western North Sea. *Journal of the Marine Biological Association of the United Kingdom*, **87**, 327-338.