

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 :**

**S2618: *Balaenoptera acutorostrata* - Minke whale**

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](http://www.jncc.gov.uk/article17)

## **S2618 *Balaenoptera acutorostrata* Minke whale**

*Audit trail compiled and edited by JNCC and 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<sup>2.3</sup>**

Mainly distributed off western coasts of Britain and Ireland in continental shelf waters, and throughout the north-western and central North Sea (Map 1.1) (Northridge *et al.* 1995; Hammond and Macleod 2006; Reid 2003), with sightings mainly in the summer (Evans *et al.* 2003) although the number using particular areas may vary considerably between seasons and years. They occur also beyond the continental shelf edge.

#### **1.1 Surface area of range<sup>2.3.1</sup>** **759,000km<sup>2</sup>**

*B. acutorostrata* has been recorded throughout UK waters, the estimate for which is ~759,000km<sup>2</sup> (British Fishery limit extent)

#### **1.2 Date of range determination<sup>2.3.2</sup>** **2006**

#### **1.3 Quality of range data<sup>2.3.3</sup>** **Good**

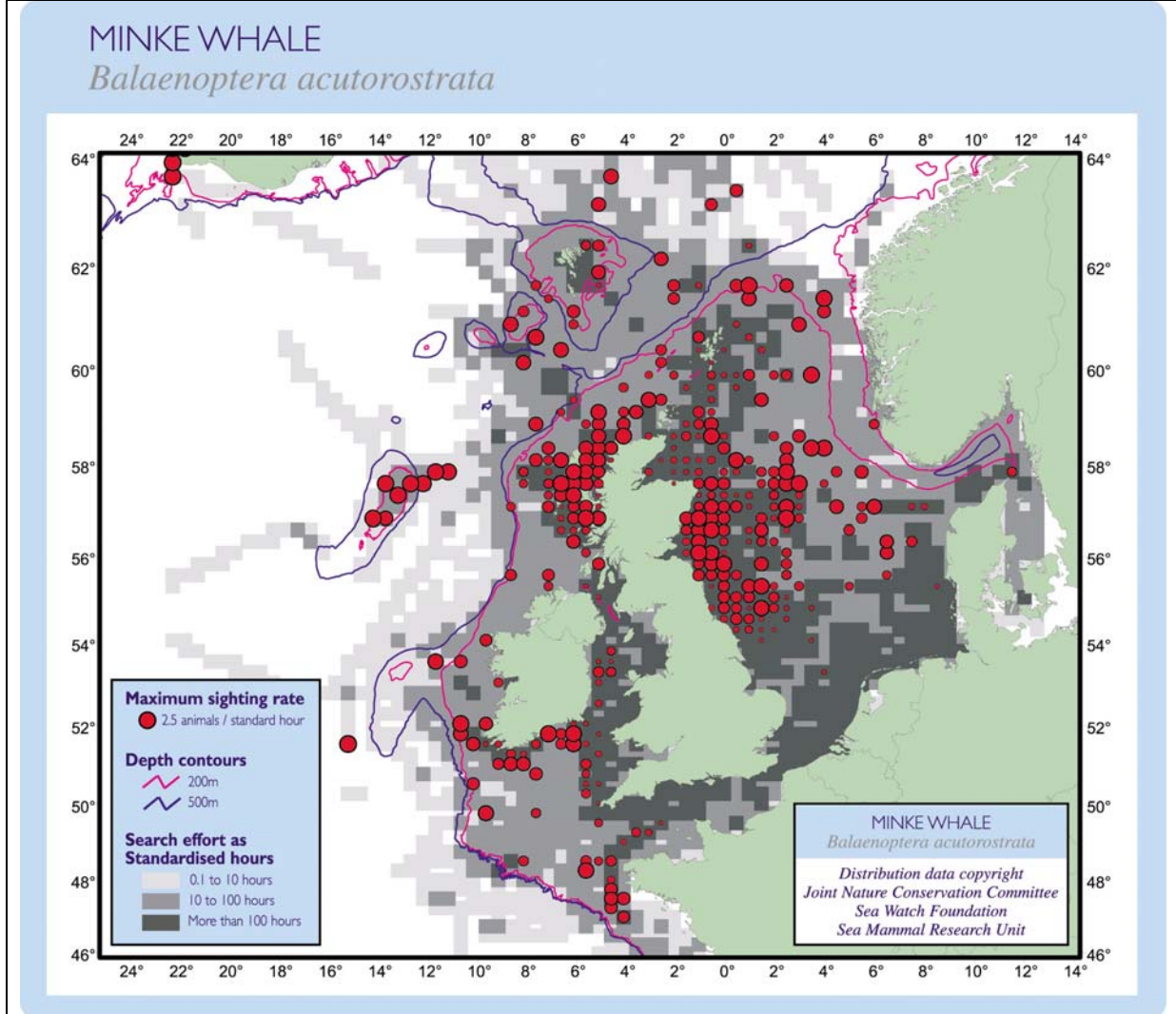
A national sightings database is run by the SeaWatch Foundation. This includes opportunistic sightings at sea by a large number of, mainly amateur, observers, together with some effort related data. Although such a large dataset is useful for showing distributional range, coverage varies between areas and time of the year. The effort related sightings data 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; Map 1.1).

#### **1.4 Range trend<sup>2.3.4</sup> and range trend magnitude<sup>2.3.5</sup>** **Stable**

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

A comparison of SCANS II survey results with the map in the Atlas of cetacean distribution in north-west European waters (Map1.1) reveals no evidence of a decline in range in UK waters. 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.

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



### 1.5 Range trend period <sup>2.3.6</sup>

1994 – 2005

The reported trend has been informed by the cetacean Atlas (Reid *et al.* 2003) and latest SCANS survey, which encompass data from 1979 to 2005.

### 1.6 Reasons for reported trend in range <sup>2.3.7</sup>

Not applicable

### 1.7 Favourable reference range <sup>2.7.1</sup>

759,000km<sup>2</sup> (Equal to current)

The current range estimate is equivalent to the UK waters estimate. Hence, it is an appropriate baseline for the favourable reference range.

### 1.8 Range conclusion <sup>2.8</sup>

Favourable

Range is stable and not smaller than the favourable reference range. Therefore, the conclusion for this parameter is Favourable.

## **2. Population of the Species<sup>2.4</sup>**

### **2.1 Population estimate<sup>2.4.1</sup>**

#### **16,395 individuals (UK and adjacent waters, shelf only)**

A transfrontier approach to population size reporting has been adopted. The estimate reported above is a sum of broad regions (as defined by the SCANS II survey) that includes all the countries bordering the North Sea, Ireland and France. These areas included 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, Irish Sea, covering all of UK continental shelf waters.

The SCANS II survey undertaken in 2005 provided the first comprehensive estimate of abundance of small cetaceans in the whole European Atlantic continental shelf region, including UK waters. A total abundance of 18,600 (Coefficient of Variation (CV) = 0.30) was estimated for *Balaenoptera acutorostrata* in the European Atlantic continental shelf (Hammond and MacLeod, 2006).

The International Whaling Commission are currently undertaking a review of the minke whale populations of the North Atlantic. They estimate that there are 174,000 individuals (95% Confidence Interval ranging from 125,000 to 245,000) for the period 1996 to 2001. However, four differentiated subpopulations of *B. acutorostrata* have been identified in the North Atlantic (west Greenland, central north Atlantic-east Greenland-Jan Mayen area, NE Atlantic, and North Sea) through genetic, diet and contaminant studies (Andersen *et al.* 2003; Born *et al.* 2003). Consequently, data obtained from the two SCANS surveys undertaken in 1994 and 2005 in the North Sea and adjacent European shelf waters is reported here.

### **2.2 Date of population estimate<sup>2.4.2</sup>**

#### **2005**

SCANS II survey.

### **2.3 Method of population estimate<sup>2.4.3</sup>**

#### **2 = extrapolation from surveys of part of the population, sampling**

The SCANS surveys were carried out in the summer by teams of observers onboard research ships and small aircraft. The ships and aircraft used line transect methods to collect distance sampling data to estimate the number of animals in the European Atlantic continental shelf area.

### **2.4 Quality of population data<sup>2.4.4</sup>**

#### **Good**

The SCANS II survey used techniques to minimise known biases 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 obtain a full census.

### **2.5 Population trend<sup>2.4.5</sup> and population trend magnitude<sup>2.4.6</sup>**

#### **Stable**

SCANS 1994 survey estimated the abundance to be 8,445 (CV = 0.24) for the North Sea and adjacent waters (Hammond *et al.*, 2002). In 2005, SCANS II estimated the abundance in a similar area to be 10,541 (CV = 0.32). Although it is not possible to detect trends from only two inter-decadal surveys, the fact that the numbers estimated from the two surveys are not

statistically different suggests that population numbers have remained stable in the last decade in UK waters.

## **2.6 Population trend period<sup>2.4.7</sup>**

**1994 – 2005**

SCANS-94 and SCANS II surveys.

## **2.7 Reasons for reported trend in population<sup>2.4.8</sup>**

Not applicable

## **2.8 Justification of % thresholds for trends<sup>2.4.9</sup>**

Not applicable

## **2.9 Main pressures<sup>2.4.10</sup>**

**210 Professional fishing**

**230 Hunting**

**313 Exploration and extraction of oil or gas**

**420 Discharges**

**490 Other urbanisation, industrial and similar activities**

**520 Shipping**

**690 Other leisure and tourism impacts not referred to above**

**621 nautical sports**

**701 water pollution**

**710 Noise nuisance**

**971 Competition**

**990 Other natural processes**

Entanglement in lines and ropes associated with pot fisheries (SAC, 2000) and ship strikes are the main pressures known to affect this species in UK waters. In addition, *B. acutorostrata* from the northeast Atlantic stock are taken by Norwegian whalers.

The use made of the seas around the UK has been described (see SEA reports) and assessed against possible future hydrocarbon development opportunities. Seismic activity has been shown to date to have no significant effect on minke whale behaviour (Stone, 2003).

Between 2000 and 2004, from the 12 post mortem analysis carried out on stranded animals, the most common cause of death was entanglement in ropes (6) followed by live stranding (2) and starvation (2) (Jepson 2006). From the post mortem results, it was unclear if the entanglement events were associated with commercial fisheries (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<sup>2.4.11</sup>**

**210 Professional fishing**

**230 Hunting**

**701 water pollution**

**971 Competition**

## **990 Other natural processes**

Bycatch, whaling, water pollution, coastal development and increased competition with other top-predators due to changes in prey availability and distribution may continue to affect this species but if controlled it should not threaten the long term viability of the species in UK waters.

### **2.11 Favourable reference population<sup>2.7.2</sup>**

#### **16,395 individuals (Equal to current: UK and adjacent waters, shelf only)**

The decision tree in Note 1 has been used as a guide in determining the favourable reference population estimate (see ‘Assessing Conservation Status: UK Approach’). Based on this and expert judgement, the current population is considered sufficiently large to be considered viable in the foreseeable future.

The population size value provided is a sum of the estimated absolute abundances for each of the SCANS II survey areas that include UK waters. These areas included 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, Irish Sea, covering all of UK continental shelf waters.

### **2.12 Population conclusion<sup>2.8</sup>**

#### **Favourable**

Population trend is stable, and the current population estimate is equal to the favourable reference population. The conclusion is, therefore, Favourable.

## **3. Habitat for the Species in the Biogeographic Region or Sea<sup>2.5</sup>**

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; Robinson & Tetley, 2007; Weir et al., 2007). It is often difficult to determine what features characterise cetacean habitats and in quantifying their extent.

This species has been observed mainly on the continental shelf in water depths of 200 m or less (Weir *et al.* 2001; Reid *et al.* 2003; MacLeod et al., 2007). Evans (1980) proposed that the dominance of summer sightings was related to the inshore presence of herring and mackerel on which the whales feed. More recently, prey distribution and abundance were considered to be the most likely factors governing habitat use by *B. acutorostrata* (Naud *et al.* 2003; Macleod *et al.* 2004; Ingram et al., 2007; Robinson & Tetley, 2007; Weir et al., 2007). This species presents the most catholic diet of all rorqual species.

### **3.1 Surface area of habitat<sup>2.5.2</sup>**

#### **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<sup>2.5.3</sup>**

#### **Not applicable**

### **3.3 Quality of data on habitat area<sup>2.5.4</sup>**

#### **Poor**

No information is available on habitat area.

### **3.4 Habitat trend<sup>2.5.5</sup>**

#### **Unknown**

Habitat trend information is not available.

### **3.5 Habitat trend period<sup>2.5.6</sup>**

1994 – 2006

### **3.6 Reasons for reported trend in habitat<sup>2.5.7</sup>**

Not applicable

### **3.7 Suitable habitat for the species (in km<sup>2</sup>)<sup>2.73</sup>**

Unknown

### **3.8 Habitat conclusion<sup>2.8</sup>**

#### **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<sup>2.6</sup>**

#### **Good prospects**

“Species is expected to survive and prosper”.

Since 1994, conservation measures have been undertaken in the UK and adjacent waters, to protect, survey and monitor marine mammal abundance, health and distribution (see below); stable population trends indicate the effectiveness of such measures. Further, potential threats are not expected to affect long term viability (see Section 2.10). On this basis, prospects over the next 12 years have been identified as good.

#### *Threats, Legislation and Conservation Action*

Many cetaceans occurring in UK waters will also use waters of other Member States and those of non-Members, so co-ordination 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.

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 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 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.

The Joint Nature Conservation Committee (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 2007-08 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, OSPAR).

The UK's position within the International Whaling Commission 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. *B. acutorostrata* from the northeast Atlantic stock are taken by Norwegian whalers, but whalers and international efforts need to ensure any such future take does not impact UK populations.

#### **4.1 Future prospects conclusion<sup>2.8</sup>**

**Favourable**

### **5. Overall Conclusion<sup>2.8</sup>**

**Favourable**

Range, population and habitat for the species are all assessed as Favourable and the future prospects are Unknown at present. The overall assessment is, therefore, Favourable.

**Table 5.1** Summary of conclusions

Parameter	Judgement	Grounds for Judgement (in accordance with Annex C)	Reliability*
Range	Favourable	Range is stable and not smaller than the favourable reference range	2
Population	Favourable	Population is stable and not less than the favourable reference population	2
Habitat	Favourable	Area of habitat is sufficiently large and habitat quality is suitable for the long-term survival of the species	3
Future Prospects	Favourable	Main pressures and threats to the species are not significant; species expected to remain viable over the next 12 years	2
Overall Assessment	Favourable	All Favourable	2

\*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<sup>2.7.4</sup>

A transfrontier approach to population size reporting has been adopted. Estimate given as sum of broad regions (as defined by the SCANS II survey), and which include all the countries bordering the North Sea, Ireland and France.

## 7. References

ANDERSEN, L.W., BORN, E.W., DIETZ, R., HAUG, T., OIEN, N. and BENDIXEN, C. 2003. Genetic population structure of minke whales *Balaenoptera acutorostrata* from Greenland, the North East Atlantic and the North Sea probably reflect different ecological regions. *Marine Ecology Progress Series*, **247**, 263-280.

BORN, E.W., OUTRIDGE, P., RIGET, F.F., HOBSON, K.A., DIETZ, R., ØIEN, N. and HAUG, T. 2003. Population substructure of North Atlantic minke whales (*Balaenoptera acutorostrata*) inferred from regional variation of elemental and stable isotopic signatures in tissues. *Journal of Marine Systems*, **43**, 1-17.

EVANS, P.G.H. 1980. Cetaceans in British waters. *Mammal Review*, **10**, 1-52.

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

HAMMOND, P.S., BERGGREN, P., BENKE, H., BORCHERS, D.L., COLLET, A., HEIDE-JØRGENSEN, M.P., HEIMLICH, S., HIBY, A.R., LEOPOLD, M.F. and ØIEN, N. 2002. Abundance of harbour porpoise and other cetaceans in the North Sea and adjacent waters. *Journal of Applied Ecology*, **39**, 361-376.

HAMMOND, P.S. and 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.

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

MACLEOD, K., FAIRBAIRNS, R., GILL, A., FAIRBAIRNS, B., GORDON, J., BLAIR-MYERS, C. and PARSONS, ECM. 2004. Seasonal distribution of minke whales *Balaenoptera acutorostrata* in relation to physiography and prey off the Isle of Mull, Scotland. *Maine Ecology Progress Series*, **277**, 263-274.

NAUD, MJ; LONG, B; BRETHERS, JC; SEARS, R. 2003. Influences of underwater bottom topography and geomorphology on minke whale (*Balaenoptera acutorostrata*) distribution in the Mingan Islands (Canada). *Journal of the Marine Biological Association of the UK*, **83**, 889-896.

NORTHRIDGE, S.P., TASKER, M.L., WEBB, A. and WILLIAMS, J.M. 1995. Distribution and relative abundance of harbour porpoises (*Phocoena phocoena* L.), white-beaked dolphins (*Lagenorhynchus albirostris* Gray), and minke whales (*Balaenoptera acutorostrata* Lacepède) around the British Isles. *ICES Journal of Marine Science*, **52**, 55-66.

REID, J.B., EVANS, P.G.H. and NORTHRIDGE, S.P. 2003. *Atlas of cetacean distribution in north-west European waters*. Joint Nature Conservation Committee, Peterborough. 76pp.

ROBINSON, K.P. & TETLEY, M.J. 2007. Behavioural observations of foraging minke whales (*Balaenoptera acutorostrata*) in the outer Moray firth, north-east Scotland. *Journal of the Marine Biological Association of the United Kingdom*, **87**, 85-86.

SAC, 2000. *Cetacean strandings investigation Scotland*. Project report to the then Department of the Environment, Transport and the Regions. Reference – CR0179. Scottish Agricultural College, Inverness.

STONE, C.J., 2003. *The effects of seismic activity on marine mammals in UK waters, 1998-2000*. JNCC Report No. 323.

WEIR, C.R., POLLACK, C., CRONIN, C. AND 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.