**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:

# S2621 *Balaenoptera physalus* – Fin whale

# S2621 *Balaenoptera physalus* Fin whale

*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]

The fin whale occurs worldwide from polar to tropical seas, but is most common in temperate waters. Around the UK, fin whales are mostly seen in deep waters beyond the edge of the continental shelf and during the summer and autumn (Map 1.1; Weir *et al*. 2001; Reid *et al*. 2003). However, there are also winter records from shelf waters southwest of Britain, including juveniles (Evans *et al*. 2003). Acoustic data show that fin whales are present year round in UK waters (Charif and Clark 2000).

## 1.1 Surface area of range[2.3.1]
**Unknown**
*Balaenoptera physalus* has been recorded throughout UK waters, offshore of the 200m contour (see Map 1.1). However, an area estimate for this is not currently available.

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 Quality of range data[2.3.3]
**Moderate**
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. 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).

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.

## 1.3 Range trend[2.3.4] and range trend magnitude[2.3.5]
**Stable**
There is no evidence of a decline in range in recent years or historically based on whaling records from the early 1900s (Thompson, 1928). 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.

## 1.4 Range trend period [2.3.6]
**1994 – 2001**
This is the time period encompassed by the data in the cetacean Atlas (Reid *et al* 2003) and in Víkingsson *et al*., in press.

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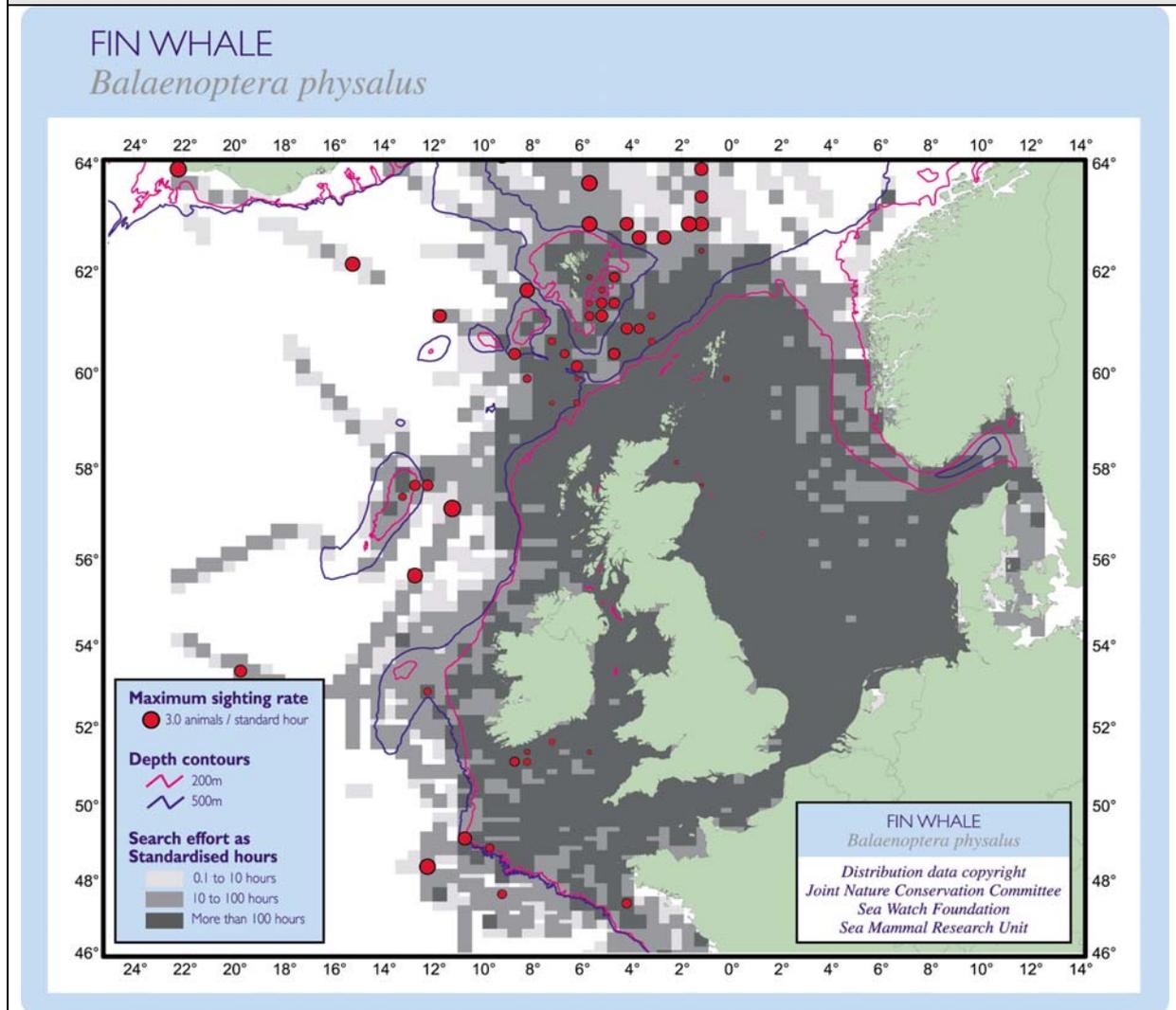


## 1.5 Reasons for reported trend in range[2.3.7]
**Not applicable**

## 1.6 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.

## 1.7 Range conclusion[2.8]
**Favourable**
There has been no evidence of decline in range, and the current range (although not quantified in $km^2$) is considered equivalent to the favourable reference range based on best available information and expert judgement. Therefore, the conclusion for this parameter is Favourable. (Please see section 6: complementary information, regarding the range parameter for marine species).

# 2. Population of the Species[2.4]

## 2.1 Population estimate[2.4.1]
**circa 30,000 individuals (eastern and central North Atlantic)**
Where sufficient information is held, a transfrontier approach to population size reporting has been adopted for marine mammals. The estimate reported here was given as the sum of two population size estimates for an area encompassing the eastern and central North Atlantic. Investigation on the relationship between whales occurring in UK waters and the wider North Atlantic, together with survey data from CODA (Cetacean Offshore Distribution and Abundance) and other projects (e.g. T-NASS) will facilitate detailed assessments of this species in the North Atlantic. These are being conducted by the International Whaling Commission and North Atlantic Marine Mammal Commission (NAMMCO).

The best estimate for the eastern North Atlantic is 4100 (CV=0.21) calculated from surveys between 1996 and 2001, and for the central North Atlantic (including the Faroes and some waters within the UK 200 nm limit) is 25800 (CV=0.13) for the year 2001 (Víkingsson *et al.* in press). However, the relationship between whales that occur in UK waters and the wider North Atlantic is unclear at the moment.

## 2.2 Date of population estimate[2.4.2]
**2001**
Víkingsson *et al*. in press

## 2.3 Method of population estimate[2.4.3]
**2 = Extrapolation from surveys of part of the population, sampling**
The North Atlantic Sightings Surveys (NASS) surveys were carried out 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[2.4.4]
**Good**
The NASS surveys 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[2.4.5] and population trend magnitude[2.4.6]
**Stable**

For an area of the central North Atlantic (which included the Faroes and some waters within the UK 200 nm limit) there is an estimated 4% increase per year in population size between 1987 and 2001, although not found to be statistically significant (Víkingsson *et al*. in press). In contrast, there was no evidence of any trend in abundance in the eastern North Atlantic (Vikingsson et al., in press). The relationship between whales that occur in UK waters and the wider North Atlantic is unclear at the moment.

## 2.6 Population trend period[2.4.7]
**1987 – 2001**
This is the time period encompassed by the survey data analysed in Víkingsson *et al*. in press.

## 2.7 Reasons for reported trend in population[2.4.8]
**Not applicable**
Reduced hunting pressure for fin whales in the North Atlantic since the 1980s is likely to have lead to an increase in population size for the central North Atlantic, although current population trens have not been found to be statistically significant. No trend was observed for the eastern North Atlantic (Víkingsson *et al*. in press).

## 2.8 Justification of % thresholds for trends[2.4.9]
**Not applicable**

## 2.9 Main pressures[2.4.10]
**230 Hunting**
**313 Exploration and extraction of oil or gas**
**520 Shipping**
**701 Water pollution**
**710 Noise nuisance**
**990 Other natural processes**
Individuals have been killed by ship strikes and hunting. Commercial whaling in adjacent waters (e.g. Iceland) has recently resumed in 2006. Other effects such as prey depletion and increase in background noise may also affect this species.

It is unlikely that any one of these pressures will 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]
**230 Hunting**
**520 Shipping**
**710 Noise nuisance**
**990 Other natural processes**
Whaling in adjacent waters, shipping and noise nuisance 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[2.7.2]
**circa 30,000 individuals (Equal to current: eastern and central North Atlantic)**
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').

The current increasing trend (which is not attributed to natural fluctuation) indicates that the population was maintaining itself in 1994, and continues to maintain and perpetuate itself. However, because the 1994 population is not currently known, the favourable reference population has been set using the current estimate.

## 2.12 Population conclusion[2.8]
**Favourable**
Current population is not less than the favourable reference population (for the eastern and central North Atlantic). Therefore, in accordance with Annex C, the conclusion for population is Favourable.

# 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; 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 occurs mainly in deep waters beyond the edge of the continental shelf (Reid *et al*., 2003). The waters north and west of the UK are likely to be important feeding grounds and migration routes (Macleod *et al*, 2003).

## 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 km$^2$)[2.73]
**Unknown**

## 3.8 Habitat conclusion[2.8]

**Favourable**

Based on expert judgement. Although there is an acknowledged difficulty associated with defining habitats for cetaceans, judgement of favourable conservation status was based on the relatively high level of spatial and temporal variability in 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. Additionally, although not statistically significant, the increasing trend in population abundance in the cetral North Atlantic (Víkingsson *et al.*, in press) suggests that fin whales have an area of habitat that is sufficiently large and that habitat quality is suitable for the long term survival of the species.

# 4. Future Prospects[2.6]

**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. Many human activities that have the potential to affect the assessed species are already regulated. Further, potential threats are not expected to affect long term viability (see Section 2.10), assuming that current conservation measures are maintained and further measures are taken should other pressures emerge. 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 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 co-ordinated 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.

## 4.1 Future prospects conclusion[2.8]
**Favourable**

# 5. Overall Conclusion [2.8]
**Favourable**
All parameters are 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 | 2 |
| **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[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.

Where sufficient information is held, a transfrontier approach to population size reporting has been adopted for marine mammals. The estimate reported here was given as the sum of two population size estimates for an area encompassing the eastern and central North Atlantic. Investigation on the relationship between whales occurring in UK waters and the wider North Atlantic, together with survey data from CODA (Cetacean Offshore Distribution and Abundance) and other projects (e.g. T-NASS) will facilitate detailed assessments of this species in the North Atlantic. These are being conducted by the International Whaling Commission and North Atlantic Marine Mammal Commission (NAMMCO).

# 7. References

CHARIF, R.A. & CLARK, C. W., 2000. *Acoustic monitoring of large whales off north and west Britain and Ireland: a two-year study, October 1996-September 1998*. Peterborough: Joint Nature Conservation Committee Report No. 313.

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.

INGRAM, S.N., WALSHE, L., JOHNSON, D. & ROGAN, E., 2007. Habitat portioning 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.

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., SIMMONDS, M.P. & MURRAY, E., 2003 Summer distribution and relative abundance of cetacean populations off north-west Scotland. *Journal of the Marine Biological Association of the UK*, **83**, 1187-1192.

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

THOMPSON D.A.W. 1928. On whales landed at the Scottish whaling stations during the years 1908-1914 and 1920-1927. *Scientific Investigations Fishery Board Scotland* **3**: 3-40

VÍKINGSSON, G.A., PIKE, D.G., DESPORTES, G. ØIEN, N., GUNNLAUGSSON T. & BLOCH, D. (in press). *Distribution and abundance of fin whales (Balaenoptera physalus) in the Northeast and Central Atlantic as inferred from the North Atlantic Sightings Surveys 1987-2001*. NAMMCO Scientific Publications.

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.