

**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 :

**S2029: *Globicephala melas* - Long-finned pilot
whale**

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

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S2029 *Globicephala melas* Long-finned pilot whale

Audit trail compiled and edited by JNCC and the Marine Mammal Inter-Agency 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}

Generally an oceanic species that comes closer to the shore seasonally, notably in the south-west approaches and the Moray Firth. Greatest numbers have been observed to the north of Scotland and south-east of the Faroes, as well as along the shelf edge from southern Ireland south to the Bay of Biscay (Map 1.1; Weir *et al.* 2001; Reid *et al.* 2003; Macleod *et al.* 2003; Stone 2003).

1.1 Surface area of range^{2.3.1}

Unknown

Globicephala melas has been recorded throughout UK waters, offshore of the 200 m 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 Date of range determination^{2.3.2}

Not applicable

1.3 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. 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).

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.

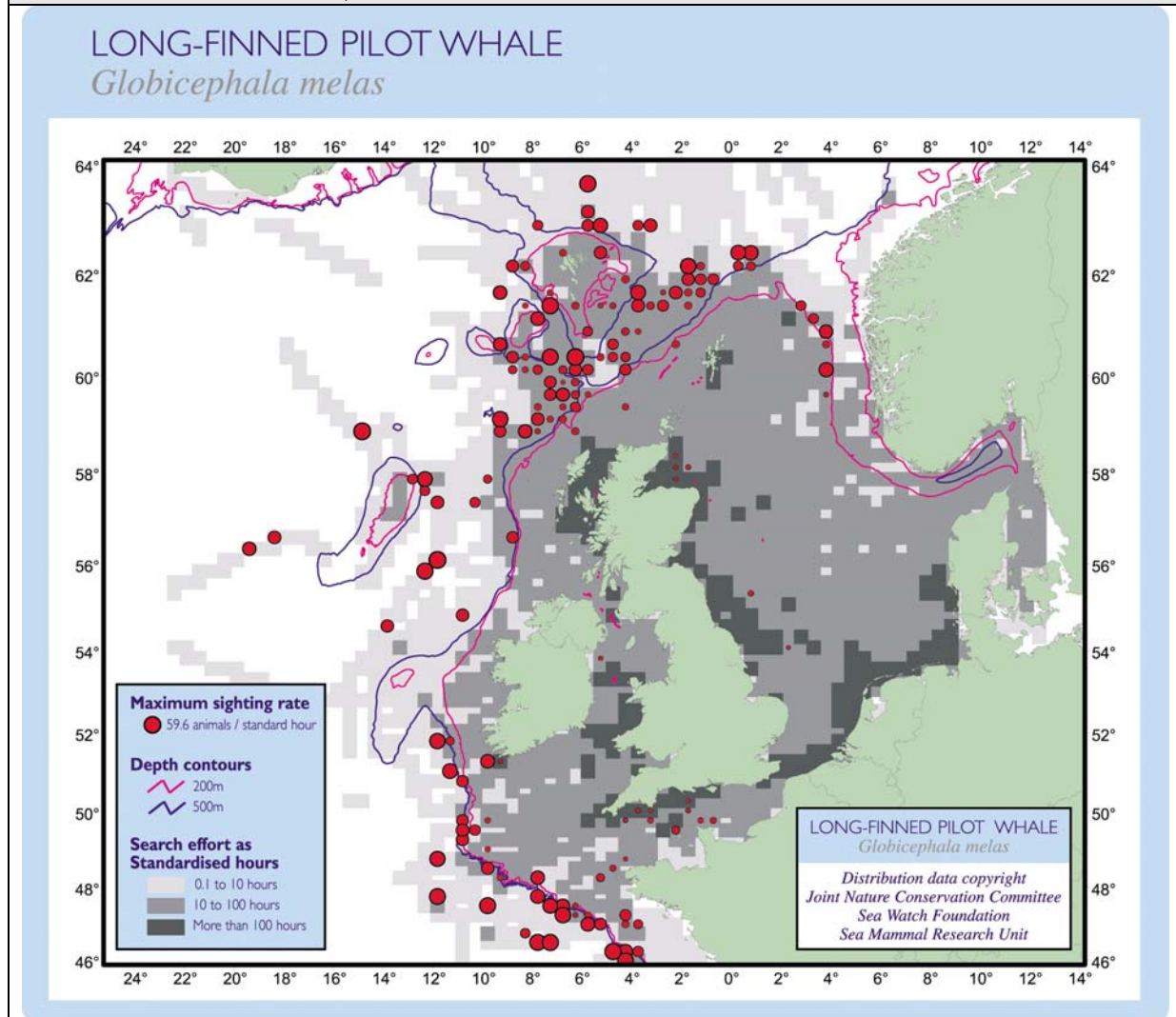
1.4 Range trend^{2.3.4} and Range trend magnitude^{2.3.5}

Stable

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

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 long-finned pilot whales in the north-east Atlantic. Please note that this map potentially hides spatial and temporal variation. *From Reid et al., 2003*



1.5 Range trend period^{2.3.6}

1994 – 2005

Trend was informed by data in the cetacean Atlas (Reid *et al* 2003) and the 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 cannot 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

Due to the difficulties of estimating some parameters such as group size from ship-based surveys, a robust estimate of the total North Atlantic population cannot be made. Buckland *et al.* (1993) provided a best estimate of 778,000 (CV = 0.30) from a survey undertaken in 1989 which covered most of the northern and north-east Atlantic range. However, there have been no comprehensive estimates of abundance for this species since then.

Genetic studies have indicated that there is very little variability in mitochondrial DNA in pilot whales throughout the North Atlantic, and no significant differences between those sampled from the western Atlantic, Iceland and the eastern Atlantic (Fullard *et al.* 2000).

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}

Poor

There is no recent population estimate for this species.

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

Unknown

No long-term trends in abundance have been detected from the Faroe Island catch data (Bloch and Lastein, 1995) and no recent analyses have been published.

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

230 Hunting

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

This species is likely to be affected by bycatch (has been recorded in pelagic trawls), noise disturbance and direct killing. Of these, direct killing in adjacent waters (Faroes) is likely to have the greatest effect on the population using UK waters.

The use made of the seas around the UK has been described (see SEA reports) and assessed against possible future hydrocarbon development opportunities. Observations undertaken before and during seismic activity demonstrate a significant movement away from the vessel when airguns were firing (Stone 2003). All seismic operations in UK waters must be undertaken in accordance with Joint Nature Conservation Committee (JNCC) guidelines which aim to minimise the effect of seismic activity on marine mammals.

Between 2000 and 2005, post mortems to stranded animals indicated that 66.7% of these died as a result of live stranding and a further 11.1% as a result of starvation (Jepson 2006; Sabin *et al.* 2006).

A variety of pollutants have been found in *G. melas* including heavy metals, organochlorines such as DDT and PCBs and polybrominated diphenyl ethers (PBDEs) (Borrell *et al.* 1995; Lindstrom *et al.* 1999; Dam and Bloch 2000). Reproductive transfer of organochlorine compounds (DDT and PCBs) has been reported for this species (Borrell *et al.* 1995). Among marine mammals, pilot whales are characterised by high levels of cadmium in their tissues, probably accumulated from their squid prey (Caurant and Amiardtriquet 1995; Bustamante *et al.* 1998). This species has a remarkable tolerance for heavy metals such as cadmium and mercury (Caurant *et al.* 1996; Amiardtriquet and Caurant 1997; Nielsen *et al.* 2000).

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

230 Hunting

701 water pollution

990 Other natural processes

Hunting, bycatch and water pollution may continue to affect this species but if controlled this should not threaten the long term viability of the species in UK waters.

2.11 Favourable reference population^{2.7.2}

Unknown

In the absence of a current estimate and trend information, the favourable reference population is unknown.

2.12 Population conclusion^{2.8}

Unknown

There is inefficient information to make a valid assessment of population at this time.

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.

The species occurs mainly in deep waters (200-3000 m) and along the continental shelf edge. The species dives to a few hundred meters and its spatio-temporal distribution has been linked to prey, particularly deep water squid such as *Todarodes sagittatus*, *Gonatus* spp. and *Illex* spp. (Bloch *et al.* 1993; Bjørke, 2001; Baird *et al.* 2002). In addition, fish such as mackerel, blue whiting and greater argentine may also be taken seasonally (Waring *et al.* 1990; Desportes and Mouritsen 1993; Abend and Smith 1997). While pilot whales are clearly squid specialists, they can diversify their diet according to prey availability, and may feed exclusively on fish when squid are not readily available (Desportes and Mouritsen 1993).

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, 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

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.

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 (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 2007-08 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, 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

Although Range and Habitat have been assessed as Favourable, the Unknown conclusions for Population and Future Prospects trigger an overall conclusion of Unknown based on Annex C

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 | Two Favourable judgements and two unknowns | 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 aims to estimate abundance of cetaceans, and investigate their habitat preferences in European waters outside the continental shelf. Other planned large scale surveys offshore (e.g. T-NASS) will provide additional information for adjacent regions. Pilot whale abundance estimation is a major priority for T-NASS survey since this species is not assessed since the 1990s and is harvested every year in the Faroes.

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