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

Third Report by the United Kingdom under Article 17

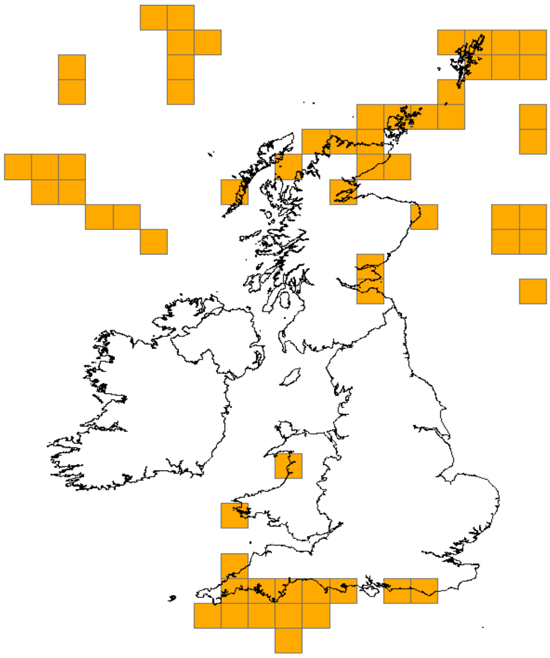
on the implementation of the Directive
from January 2007 to December 2012
Conservation status assessment for

Species:

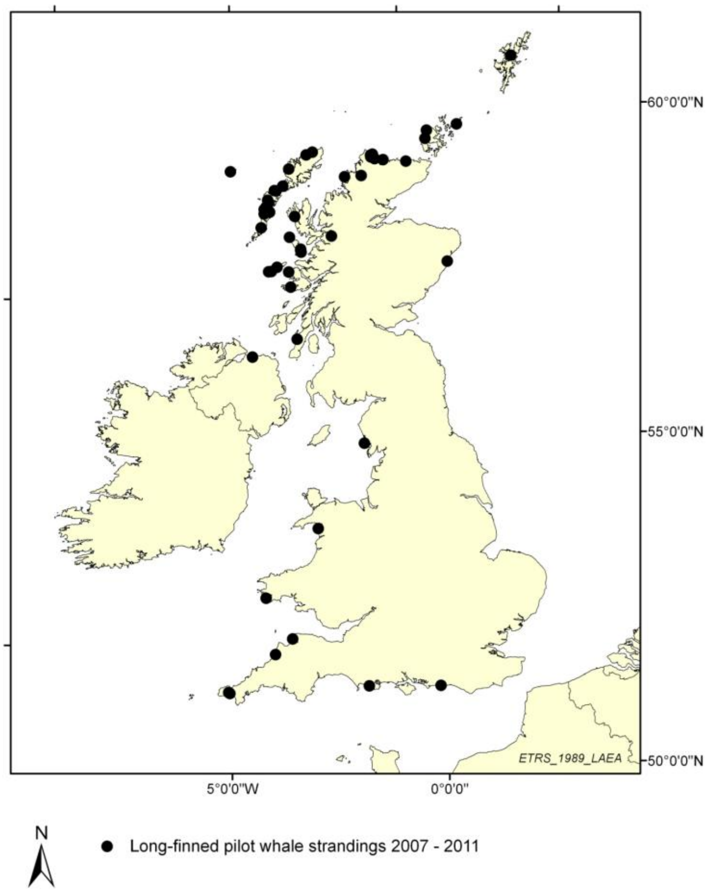
S2029 - Long-finned pilot whale (*Globicephala melas*)

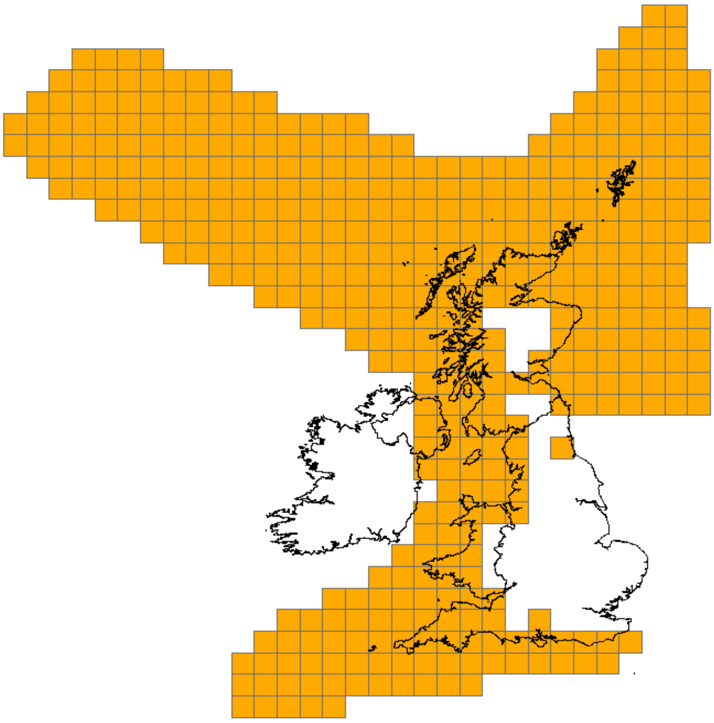
Reporting format on the 'main results of the surveillance under Article 11' for Annex II, IV & V species

Field name	***Brief explanations***	
0.2 Species	**0.2.1 Species code**	**S2029**
	0.2.2 Species scientific name	***Globicephala melas***
	0.2.3 Alternative species scientific name Optional	
	0.2.4 Common name Optional	

1.1 Maps			
1.1.1 Distribution map		**Sensitive**	**False**
	In the North Atlantic, long-finned pilot whales are a predominantly offshore species, occurring in greatest numbers over deep areas between 500-2000m. The main concentrations of long-finned pilot whales around the UK are off Northern Scotland, in the Faroe-Shetland Channel, Rockall Trough, Porcupine Bight and southwest approaches to the English Channel (Evans, 2008; Reid et al., 2003). However,		

	seasonal movements on to the slope, shelf edge and the continental shelf do occur (Evans 1980). Sightings in the central and southern North Sea are rare.

1.1.2 Method used - map	**Estimate based on partial data with some extrapolation and/or modelling**
	A national sightings database is collated by the SeaWatch Foundation. This includes opportunistic sightings at sea and on land by a large number of, mainly amateur, observers, together with some effort related data. Sightings held within the SeaWatch Foundation database for the 2007-2012 reporting period were mapped. Additionally, sightings of long-finned pilot whales from the Cetacean Offshore Distribution and Abundance (CODA) survey in July 2007 were also used. All sightings were converted to presence in 50x50km grid cells to represent distribution over the period. There were a string of sightings along the northwestern boundary of the UK EEZ which were counted as within the EEZ.
1.1.3 Year or period	**2006-2012**
1.1.4 Additional distribution map Optional	**Additional Map 1** 
	Globicephala melas is one of the most frequently stranded cetacean species on the UK coastline (mainly due to mass stranding events), with 74 individuals stranded between 2000-2004 (Jepson, 2005), 54 between 2005-2010 (52 of which in Scotland) (Deaville and Jepson, 2011), 44 in 2011 alone (39 of which mass stranded in Kyle of Durness, North West Scotland) (Deaville, 2011), and 7 between January and June 2012

	(Deaville, 2012). A further mass stranding of 31 long-finned pilot whales occurred in September 2012 along the coast of Fife (SMASS, 2013). A seasonality of strandings has been noted, with peaks between December and March/April (Leeney et al., 2008). The distribution of strandings for the reporting period is shown in Additional Map 1.
1.1.5 Range map	

2.1 Biogeographical region & marine regions	**MATL**
2.2 Published sources	**"Abend AG, Smith TD. 1997. Differences in stable isotope ratios of carbon and nitrogen between long-finned pilot whales (Globicephala melas) and their primary prey in the western north Atlantic. J Mar Sci 54:500–503.** **Aguilar, A., Jover, L. and Borrell, A. 1993. Heterogeneities in organochlorine profiles of Faroese long-finned pilot whales: indication of segregation between pods? Rep.Int.Whal.Comm.Spec.Issue No. 14. Pp. 359-367.** **Baird, R. W., Borsani, J.F.,Hanson, M.B. and Tyack, P.L. 2002. Diving and night-time behavior of long-finned pilot whales in the Ligurian Sea. Mar. Ecol. Prog. Ser. 237: 301–305.** **Baird, R. W., Ligon, A.D., Hooker, S.K. and Gorgone, A.M. 2001. Subsurface and nighttime behaviour of pantropical spotted dolphins in Hawaii. Can. J. Zool. 79: 988–996.**

Baker, J.R. 1992. Skin disease in wild cetaceans from British waters. Aquatic Mammals. 18:27-32.

Balbuena, J.A., Aznar, F.J., Fernández, M. and Raga, J.A. 1995. Parasites as indicators of social structure and stock identity of marine mammals. pp. 133-9. In: A.S. Blix, L. Walloe and O. Ulltang (eds.) Developments in Marine Biology. 4. Whales, Seals, Fish and Man: Proceedings of the International Symposium on the Biology of Marine Mammals in the Northeast Atlantic. Tromso, Norway, 29 November-1 December, 1994. Elsevier, Amsterdam. xiii+720pp.

Bjorke, H. 2001. Predators of the squid Gonatus fabricii (Lichtenstein) in the Norwegisn Sea. Fisheries Science, 52, 113-120.

Bloch, D, Desportes, G., Mouritsen, R., Skaaning, S. and Stefansson, E. 1993. An introduction to studies of the ecology and status of the long-?nned pilot whale (Globicephala melas) off the Faroe Islands. 1986–88. Reports of the International Whaling Commission Special Issue, 14, 1–32

Bloch, D. and L. Lastein. 1993. Morphometric segregation of long-finned pilot whales in eastern and western North Atlantic. Ophelia, 38: 55-68.

Caurant, F., Amiard-Triquet, C. and Amiard J.-C. 1993. Factors influencing the accumulation of metals in pilot whales (Globicephala melas) off the Faroe Islands. Rep. Int. Whal. Commn. (special issue 14):369-390.

CODA. 2009. Cetacean Offshore Distribution and Abundance in the European Atlantic. Final Report. 43pp. [Available from http://biology.st-andrews.ac.uk/coda/documents/CODA_Final_Report_11-2-09.pdf]

Couperus, A.S., 1997. Interactions between Dutch midwater trawl and Atlantic White-sided dolphins (Lagenorhynchus acutus) southwest of Ireland. J. Northw. Atl. Fish. Sci. 22, 209-218.

Dam, M. and Bloch, D. 2000. Screening of mercury and persistent Organochlorine pollutants in Long-finned pilot whale (Globicephala melas) in the Faroe Islands. Marine Pollution Bulletin. 40(12):1090-1099.

Deaville, R.and Jepson, P.D. 2011. Final report for the period 1st January 2005-31st December 2010. UK Cetacean Strandings Investigation Programme (CSIP).

Deaville, R. 2011. Quarterly report for the period 1st October-30th December 2011. UK Cetacean Strandings Investigation Programme (CSIP).

Deaville, R. 2012. Quarterly report for the period 1st April-30th June 2012. UK Cetacean Strandings Investigation Programme (CSIP).

Desportes, G. and Mouritsen, R. 1993. Preliminary results on the diet of long-?nned pilot whales off the Faroe Islands. Reports of the International Whaling Commission Special Issue, 14, 305–324.

Duguy, R., Hussenot, E., 1982. Occasional captures of delphinids in the northeast Atlantic. Rep. Int. Whal. Comm. 32, 461-462.

Evans, P.G.H. 1980. Cetaceans in British waters. Mammal Review. 10: 1–52

Evans, P. G. H. 2008. Whales, porpoises and dolphins Order Cetacea. In Harris, S. & Yalden, D.W. (eds) Mammals of the British Isles. Chapter 12, pp 655-779. The Mammal Society.

Fernandez, A., Esperon, F., Herraez, P., Espinosa De Los Monteros, A., Clavel, C., Bernabe, A., Sanches-Vizcaino. J.M., Verborgh, P., De Stephanis, R., Toledano, F. and Bayon, A. 2005. Morbillivirus and pilot whale deaths, Mediterranean Sea. Emerging Infectious Diseases. 14:792-794.

Fullard, K. J., Early, G., Heide-Jørgensen, M. P., Bloch, D., Rosing-Asvid, A. and Amos, W. (2000), Population structure of long-finned pilot whales in the North Atlantic: a correlation with sea surface temperature?. Molecular Ecology, 9: 949–958.

Gannon, D.P., Read, A.J., Craddock, J.E., Fristrup, K.M. and Nicolas, J.R. 1997a. Feeding ecology of long-finned pilot whales Globicephala melas in the western North Atlantic. Marine Ecology Progress Series, 148, 1-10.

Hammond, P.S., Berggren, P., Benke, H., Borchers, D.L., Buckland, S.T., 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.

ICES WGMME. 2010. Report of the Working Group on Marine Mammal Ecology (WGMME), 12-15 April 2010, Horta, The Azores.

ICES WGMME. 2011. Report of the Working Group on Marine Mammal Ecology (WGMME), 12–24 February 2011, Berlin, Germany

ICES WGMME. 2012. Report of the Working Group on Marine Mammal Ecology (WGMME), 5-8 March 2012, Copenhagen, Denmark.

Ingram, S. N., Walshe, L., Johnson, D. and 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.

Jepson, P.D. 2005. Report to Defra for the period 1st January 2000-31st December 2004. UK Cetacean Strandings Investigation Programme (CSIP).

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. and Cunningham, A.A. 2005. Acute and chronic gas bubble lesions in cetaceans strandend in the United Kingdom. Vet Pathol. 42:291

JNCC, 2010. JNCC guidelines for minimising the risk of injury and disturbance to marine mammals from seismic surveys. Available from http://jncc.defra.gov.uk/pdf/JNCC_Guidelines_Seismic%20Guidelines_Aug%202010.pdf.

JNCC, 2010a. Statutory nature conservation agency protocol for minimising the risk of injury to marine mammals from piling noise. http://jncc.defra.gov.uk/pdf/JNCC_Guidelines_Piling%20protocol_August%202010.pdf.

Kasuya, T., Sergeant, D.E. and Tanaka, K. 1988. Re-examination of life history parameters of long-finned pilot whales in the Newfoundland waters. Scientific Reports of the Whales Research Institute, Tokyo, 39, 103-119.

Leeney, R.H., Amies, R., Broderick, A.C., Witt, M.J., Loveridge, J., Doyle, J. and Godley, B.J. 2008. Spatio-temporal analysis of cetacean strandings and bycatch in a UK fisheries hotspot. Biodivers Conserv. 17:2323-2338.

Macleod, K., Simmonds, M.P. and Murray, E. 2003. Summer distribution and relative abundance of cetacean populations off north-west Scotland. J Mar Biol Assoc UK 83:1187–1192

MacLeod, C.D., Weir, C.R., Pierpoint, C. and Harland, E.J. 2007. The habitat preferences of marine mammals west of Scotland (UK). Journal of the Marine Biological Association of the United Kingdom 87: 157–164.

MacLeod, C. D. 2009. Global climate change, range changes and potential implications for the conservation of marine cetaceans: a review and synthesis. Endang Species Res. 7: 125–136.

Macleod, K., Burt, M.L., Cañadas, A., Rogan, E., Santos, B., Uriarte, A., Van Canneyt, O., Vázquez, J. A. and Hammond, P. S. 2009. Design-based estimates of cetacean abundance in offshore European Atlantic waters. Appendix I in the Final Report of the Cetacean Offshore Distribution and Abundance in the European Atlantic. 16pp.

Muir, D.C.G., Wagemann, R., Grift, N.P., Norstrom, R.J., Simon, M. and Lien, J. 1988. Organochlorine chemical and heavy metal contaminants in white-beacked dolphins (Lagenorhynchus albirostris) and pilot whales (Globicephala melas) from the coast of Newfoundland, Canada. Archives of Environmental Contamination and Toxicology. 17(5):613-629.

Northridge, S.P., 1991. An updated world review of interactions between marine mammals and fisheries. FAO Fisheries Technical Paper 251, Suppl. 1.

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.

Reid, J.B. 2000. Potential mitigation measures for reducing the by-catch of small cetaceans in ASCOBANS waters. Report to ASCOBANS.

SCANS-II. 2008. Small Cetaceans in the European Atlantic and North Sea (SCANS-II). Final report to the European Commission LIFE Nature programme on project LIFE04NAT/GB/000245. Report available from SMRU, Scottish Oceans Institute, University of St Andrews, St Andrews, Fife KY16 8LB, UK or http://biology.st-andrews.ac.uk/scans2/.

Simmonds, M.P., Johnston, P.A., French, M.C., Reeve, R. and Hutchinson, J.D. 1994. Organochlorines and mercury in pilot whale blubber consumed by Faroe islanders. Science of the Total Environment. 149:97-111.

Simmonds, M. P. and Isaac, S. J. 2007. The impacts of climate change on marine mammals: early signs of significant problems. Oryx. 41 (01):19-26

SMASS, 2013. Scottish Marine Animal Stranding Scheme Annual Report; 1st January - 31st December, 2012. Prepared by SRUC Wildlife Unit for Marine Scotland, Scottish Government. 41pp.

Stone, C.J. 2003. Marine Mammal observations during seismic surveys in 2000. JNCC Report No. 322.

Stone, C.J. in prep. Marine mammal observations during seismic surveys from 1995-2010. JNCC Report.

Taubengerger, J.K., Tsai, M.M., Atkin, T.J., Fanning, T.G., Krafft, A.E., Moeller, R.B., Kodsi, S.E., Mense, M.G. and Lipscomb, T.P. 2000. Molecular genetic evidence of a novel morbillivirus in a Long-finned pilot whale (Globicephala melas). Emerging Infectious Diseases. 6:42-45.

Wada, S. 1988. Genetic differentiation between forms of short-finned pilot whales off the Pacific coast of Japan. Sci. Rep. Whales Res. Inst. 39:91-101.

	Waring, G.T., Gerrior, P., Payne, P.M., Barry, B.L. and Nicolas, J.R. 1990. Incidental take of marine mammals in foreign fishery activities off the northeast United States, 1977–1988. Fish. Bull., 88: 347–360. **Weihe, P., Grandjean, P., Debes, F. and White, R. 1996. Health implications for Faroe Islanders of heavy metal and PBCs from pilot whales. Science of the Total Environment. 186:141-148.** **Weir, C.R., Pollock, C., Cronin, C. and Taylor, S. 2001. Cetaceans of the Atlantic Frontier, north and west of Scotland. Continental Shelf Research, 21, 1047–1071** **Weir, C.R., Stockin, K.A. and Pierce, G.J. 2007. Spatial and temporal trends in the 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 UK, 87, 327-338.** **Weisbrod, A.V., Shea, D., Moore, M. J. and Stegeman, J. J. 2000. Bioaccumulation patterns of polychlorinated biphenyls and chlorinated pesticides in Northwest Atlantic pilot whales. Environmental Toxicology and Chemistry, 19: 667–677.** **Würsig, B. and Richardson, W.J. 2009. Noise, effects of. Pp. 765–772. In: Perrin, W.F., Würsig, B., and J.G.M. Thewissen, Eds. The Encyclopedia of Marine Mammals, Ed. 2. Academic/Elsevier Press, San Diego, Ca. 1316 pp** **Zollett, E.A. 2009. Bycatch of protected species and other species of concern in US east coast commercial fisheries. Endangered Species Research. 9:49-59."**

2.3 Range	
2.3.1 Surface area Range	**979770**
	Generally an oceanic species that comes closer to the shore seasonally, notably in the southwest 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 (Weir et al. 2001; Reid et al. 2003; Macleod et al. 2003; Stone 2003).
2.3.2 Method used Surface area of Range	**Estimate based on partial data with some extrapolation and/or modelling**
	The range of mobile species often varies seasonally and annually; therefore, the approximation of range was based on interpolation of distribution in this and previous reporting periods and bounded by the EEZ. Although the SeaWatch dataset is useful for showing distributional range, coverage varies between areas and time of the year. The CODA data are restricted to July 2007. Therefore, range estimation also took into account the distributional data shown in Reid et al. (2003) which

	incorporated sightings data from a range of sources spanning 1979-2001.	
2.3.3 Short-term trend Period	**2001-2012**	
2.3.4 Short term trend Trend direction	**unknown**	
2.3.5 Short-term trend Magnitude Optional	**a) Minimum**	
	b) Maximum	
2.3.6 Long-term trend Period Optional	**1988-2012**	
2.3.7 Long-term trend Trend direction Optional	**unknown**	
2.3.8 Long-term trend Magnitude Optional	**a) Minimum**	
	b) Maximum	
2.3.9 Favourable reference range	**a) Value in km²**	
	b) Operator for FRR	**approximately equal to**
	The FRR is considered approximately equal to current range of this species in UK waters.	
	c) FRR is unknown (indicated by "true")	**False**
	d) Method used to set FRR	**Based on expert judgement, the current range for long-finned pilot whales in UK waters 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. However, the range in UK waters is only a proportion of the total range of this species in the**

		Marine Biogeographical region and the required area is therefore greater than the UK range in isolation.
2.3.10 Reason for change Is the difference between the reported value in 2.3.1 and the previous reporting round mainly due to…	**a) Genuine change?**	**False**
	b) Improved knowledge/more accurate data?	**False**
	c) Use of different method (e.g. "Range tool")?	**False**

2.4 Population		
2.4.1 Population size estimation (using individuals or agreed exceptions where possible)	**a) Unit**	**number of individuals**
	b) Minimum	**20091**
	c) Maximum	**76158**
2.4.2 Population size estimation (using population unit other than individuals) Optional *(if 2.4.1 filled in)*	**a) Unit**	
	b) Minimum	
	c) Maximum	
2.4.3 Additional information on population estimates / conversion Optional	**a) Definition of "locality"**	
	b) Method to convert data	
	c) Problems encountered to provide population size estimation	

2.4.4 Year or period	**2007-**	
2.4.5 Method used Population size	**Estimate based on partial data with some extrapolation and/or modelling**	
	There are no estimates of long-finned pilot whale abundance from a single survey that covered its entire UK range. The Cetacean Offshore Distribution and Abundance (CODA) survey sampled offshore waters beyond the continental shelf edge of the UK, Ireland, France and Spain (CODA, 2009). Block 1 of this survey, included part of the UK's EEZ beyond the shelf edge primarily to the west of Scotland (Shetland Islands south to mid-west Ireland). Density estimates for Block 1 were used to estimate abundance of long-finned pilot whales throughout their UK range. The area of the long-finned pilot whale range beyond the continental shelf edge was measured in GIS (ArcMap 10.1). Similarly, the continental shelf area included within the range was also measured. The estimate of density from Block 1 for long-finned pilot were assumed representative of the offshore area of this species range in the UK EEZ. This value was multiplied by the offshore range area to calculate abundance. For the shelf area, only the lower 95% confidence interval estimate of density was used and an estimate of abundance was calculated by multiplying by the area. Density of long-finned pilot whales on the shelf is expected to be much lower than offshore areas and applying a lower estimate of density was considered appropriate. For example, it was not possible to estimate abundance of long-finned pilot whales from the SCANS surveys (Hammond et al. 2002; SCANS-II, 2008) of the continental shelf due to very low sightings. The shelf abundance estimate was added to the offshore abundance estimate to give total range area abundance. The associated CV and 95% confidence intervals were calculated; the lower and upper 95% confidence interval abundance estimates are presented as the minimum and maximum abundance estimates for the long-finned pilot whale population in UK waters.	
2.4.6 Short-term trend Period	**2001-2012**	
2.4.7 Short-term trend Trend direction	**unknown**	
2.4.8 Short-term trend Magnitude Optional	**a) Minimum**	
	b) Maximum	
	c) Confidence interval	
2.4.9 Short-term trend	**Absent data**	

Method used		
2.4.10 Long-term trend – Period Optional	**1988-2012**	
2.4.11 Long-term trend Trend direction Optional	**unknown**	
2.4.12 Long-term trend Magnitude Optional	**a) Minimum**	
	b) Maximum	
	c) Confidence interval	
2.4.13 Long term trend Method used Optional	**0**	
2.4.14 Favourable reference population	**a) Number of individuals/agreed exceptions/other units**	
	b) Operator	
	c) FRP is unknown (indicated by "true")	**True**
	A minimum and maximum estimate of abundance throughout this species UK range was derived from the CODA estimate (CODA, 2009) by making the strong assumption that the lower 95% confidence interval estimate for the CODA offshore survey block 1 was representative of density on the shelf. Until there are more survey data to support this assumption and estimate a more robust population abundance, the FRP is reported unknown.	
	d) Method used to set FRP	**There is no estimate of long-finned pilot whale abundance for all of its UK range. There have been surveys that have covered parts of it range, namely the SCANS surveys (Hammond et al. 2002; SCANS-II,2008) and CODA (CODA, 2009). The CODA area included offshore waters (beyond the continental shelf edge) from the Faroe-Shetland Channel, south into the Bay of Biscay; the area is much**

		greater than the UK EEZ and therefore, does not represent the population in UK waters. The best estimate of abundance for long-finned pilot whales in the entire CODA area in July 2007 was 25,101 (CV = 0.33). The UK animals are part of a much larger population but the population structure within the North Atlantic is unclear. Fullard et al. (2000) suggested that long-finned pilot whales were divided into at least 2 populations based on genetic differences; a cold water one off Greenland and the other ranging the entire width of the North Atlantic. Other studies using morphometric differences suggested a division between Northwest and Northeast Atlantic long-finned pilot whales (Bloch and Lastein 1993). At a finer scale, studies of contaminant (Aguilar et al. 1993, Caurant et al. 1993) and parasite burdens (Balbuena et al. 1995) between schools of whales landed in the Faroe Islands at different times and locations, showed significant differences. This further suggests that smaller scale structuring may exist. In the absence of a robust estimate of abundance for UK waters and lack of information on population structure in the wider Northeast Atlantic, the FRV is currently reported as unknown.
2.4.15 Reason for change Is the difference between the value reported at 2.4.1 or 2.4.2 and the previous reporting round mainly due to:	**a) Genuine change?**	**False**
	b) Improved knowledge/more accurate data?	**False**
	c) Use of different method (e.g. "Range tool")?	**False**

2.5 Habitat for the species	
2.5.1 Area estimation	**979770**
	The area of suitable habitat is assumed to equate to the range of this

	species in the absence of data to define 'habitat'.	
2.5.2 Year or period	**2007-2012**	
2.5.3 Method used Habitat for the species	**Estimate based on partial data with some extrapolation and/or modelling**	
2.5.4 Quality of the habitat	**a) Habitat quality**	**Unknown**
	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 metres 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 (Scombridae), blue whiting (Micromesistius poutassou) and greater argentine (Argentina silus) 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).	
	b) Assessment method	**Pilot whale distribution has been correlated to sea surface temperatures (Kasuya et al. 1988) which may be a proxy for the distribution and behaviour of preferred prey, squid (Desportes & Mouritsen 1993; Gannon et al. 1997). The influence of sea temperatures is sufficient to drive segregation between populations and has been documented in short-finned pilot whales off the Pacific coast of Japan (Wada, 1988). Therefore, whilst the range for long-finned pilot whales in UK waters approximates 'habitat' where this species occurs, it will be temporally and spatially changing. Expert opinion suggests that the range of temperatures within its current range is sufficiently variable to support this species.**
2.5.5 Short-term trend Period	**2001-2012**	
2.5.6 Short-term trend Trend direction	**unknown**	
2.5.7 Long-term trend Period Optional	**1988-2012**	
2.5.8 Long-term trend Trend direction Optional	**unknown**	

2.5.9 Area of suitable habitat for the species	**a) Value in km²**	
	b) Absence of data indicated as '0'	
2.5.10 Reason for change Is the difference between the value reported at 2.5.1 and the previous reporting round mainly due to	**a) Genuine change?**	**False**
	b) Improved knowledge/more accurate data?	**False**
	c) Use of different method (e.g. "Range tool")?	**False**

2.6 Main pressures		
a) Pressure	**b) Ranking**	**c) Pollution qualifier**
	H = high importance (max 5 entries) M = medium importance L = low importance	
H03: Marine water pollution	M	X
XE: Threats and pressures from outside the EU territory	M	
C02: Exploration and extraction of oil or gas	L	
F02: Fishing and harvesting aquatic resources	L	
G04: Military use and civil unrest	L	

Between 1991-2010, 33 post mortem examinations were undertaken on long-finned pilot whales stranded in the UK. The main causes of death were live stranding (67%), infectious disease (6%), bycatch (3%) and starvation (3%) (Deaville and Jepson, 2011).

Bycatch of long-finned pilot whales has been documented from strandings and also from direct observation of fisheries. Individuals have been accidentally caught in demersal and mid-water on the French Atlantic Coast in the 1970s (Duguy and Hussenot, 1982) and in a demersal trawl off southwest England (Northridge, 1991). Bycatch has also been recorded in pelagic drift nets, pelagic long lines, pelagic trawls and drift net fisheries (Reid, 2000). Couperus (1997) reported that 12% of bycatches in the Dutch pelagic fishery between 1989 and 1994, mainly off southwest Ireland, involved this species. More recently, an atypical bycatch of five pilot whales was reported in a German midwater otter-trawl targeting mackerel off south west Ireland (WGBYC, 2013). There has been an increase in bycatch of this species in some areas of the US east coast since circle hooks became mandatory in pelagic long line fishing (Zollett, 2009).

Pilot whales are also susceptible, among other infectious diseases (Baker, 1992), to morbillivirus, which has caused significant mortality in the Mediterranean and a number of cases in US waters. Severity of morbillivirus infections in marine mammals has been linked to high levels of pollutants, particularly PCBs (Taubenberger et al., 2000; Fernandez et al., 2005). High level of pollutants, including heavy metals such as cadmium and mercury, and organochorines such as DDT and PCBs, have been found in the tissues of Globicephala melas (Muir et al., 1988; Dam and Bloch, 2000; Weisbrod et al., 2000), partly due to their position at the apex of the marine food chain, which renders them liable to accumulate toxic chemicals (Simmonds et al., 1994; Weihe et al., 1996). Long-finned pilot whales in UK waters are thought to be part of a wider northeast Atlantic population. The Faroese currently exploit pilot whales through direct kills. A recent assessment of the sustainability of this hunt by the NAMMCO Scientific Committee concluded that a population size in the range of 50 000 – 80 000 long-finned pilot whales will sustain the annual Faroese drive hunt. The most recent scientific estimate of abundance for the pilot whale stock is 128 000 in the Iceland-Faroese survey area. This estimate is based on data from the latest T-NASS in 2007. However, there is limited information regarding the stock structure of this species in the northeast Atlantic which hinders a robust assessment of the sustainability of the fishery.	
2.6.1 Method used – Pressures	**mainly based on expert judgement and other data**
	Pressure ranking for Globicephala melas is mainly based on expert opinion and data from post mortem of stranded animals, which indicate sources of mortality for this species. Ranking of Low for fishing relates to the impact of bycatch for this species which is currently rarely recorded in fisheries operating in the UK EEZ. The threats and pressures beyond the EU territorial waters, relates primarily to the Faroese drive hunts. Although they are considered sustainable given current knowledge, there is uncertainty surrounding stock structure of this species and a more recent abundance estimate is required.

2.7 Threats		
a) Threat	**b) Ranking**	**c) Pollution qualifier**
	H = high importance (max 5 entries) M = medium importance L = low importance	
H03: Marine water pollution	M	X
M01: Changes in abiotic conditions	M	
M02: Changes in biotic conditions	M	
XO: Threats and pressures from outside the Member State	M	
C02: Exploration and extraction of oil or gas	L	
F02: Fishing and harvesting aquatic resources	L	
G04: Military use and civil unrest	L	

Pressures identified are expected to continue in the long term. New threats from climate change are expected but the impacts are largely unknown; abiotic effects on sea temperature and knock on effects for prey are potential outcomes (Simmonds and Isaac, 2007). MacLeod (2009) concluded that climate change driven changes in sea-surface temperature may result in a poleward shift in distribution of long-finned pilot whales. This species inhabits waters of intermediate temperature and do not cross the equator at any point or extend into cooler waters closer to the poles. Therefore, the northerly and southerly limit of their range is likely limited by waters that are too cool or too warm, respectively. As a result of general warming, this species may redistribute into more northerly waters, vacating the warmer south (MacLeod 2009).		
2.7.1 Method used – Threats	**expert opinion**	
	Expert opinion and published literature.	

2.8 Complementary information	
2.8.1 Justification of % thresholds for trends	
2.8.2 Other relevant information	
2.8.3 Trans-boundary assessment	**The distribution of long-finned pilot whales is continuous in offshore waters beyond the shelf west of the UK and Ireland. Therefore, the future prospects of this population are also dependent, most directly, on the actions within the Irish EEZ.**

2.9 Conclusions ***(assessment of conservation status at end of reporting period)***		
2.9.1 Range	**a) Conclusion**	**Favourable**
	There has been no evidence of decline in range, and the current range is considered equivalent to the favourable reference range based on best available information and expert judgement. Therefore, the conclusion for this parameter is Favourable.	
	b) Qualifier	
2.9.2 Population	**a) Conclusion**	**Unknown**
	Given that there are insufficient data to estimate a Favourable Reference Population or trends in population, the conclusionfor this parameter is unknown.	
	b) Qualifier	
2.9.3 Habitat for the species	**a) Conclusion**	**Unknown**
	Both range and population must be considered to be in a Favourable in order for habitat (in the absence of data) to be considered Favourable. Therefore, as the conclusion for population is unknown, then the conlusion for habitat is also unknown.	
	b) Qualifier	

2.9.4 Future prospects	**a) Conclusion**	**Unknown**
	Following the EU guidance, the overall conclusion for future prospects is unknown.	
	b) Qualifier	
2.9.5 Overall assessment of Conservation Status	**Unknown**	
	Conservation measures have been undertaken in the UK and adjacent waters, to protect, survey and monitor marine mammal abundance, health and distribution as part of the requirements of the Habitats Directive. 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 or existing pressures change, 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 of the Baltic, North East Atlantic, Irish 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. 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. To further implement the directive, a surveillance strategy for cetaceans is being developed linking to the Joint Cetacean Protocol which ultimately aims to enable transboundary approaches to evaluating the conservation status of cetaceans. The JCP Phase III analysis has proved the value of the approach in enabling assessment of range and trends over the short and long-term in the UK EEZ for the first time. Ultimately, the JCP will broaden its data providers to other European Member States. This is reliant on data contributions from European Member States and will be progressed in 2013. 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 2014. In 2005, the UK was a major supporter of the EU LIFE Nature project SCANS-II which completed a survey for cetaceans in the European Atlantic continental shelf to generate precise estimates of abundance, primarily for the purposes of assessing cetacean bycatch. In 2007, the Cetacean Offshore Distribution and Abundance (CODA) project conducted surveys in European Atlantic offshore waters and estimated abundance of cetaceans and investigated habitat preferences in European Atlantic offshore waters. The UK DECC has provided funding to initiate plans for the third SCANS survey, scheduled for July 2016. 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. A dedicated monitoring scheme is operated by the SMRU, while collaborative links with the three fishery research laboratories in the UK also allow selected observations from the Discard Sampling Programmes to be included in assessments of cetacean bycatch. Data from discard surveys conducted by the Centre for Environment, Fisheries and Aquaculture Science (CEFAS), Marine Science Scotland (MSS) and the Agri-Food and Biosciences Institute of Northern Ireland (AFBINI) are used with discretion because discard sampling is not always compatible with protected species monitoring. The UK observer monitoring programme is also designed to fulfil the UK's obligations under Article 12 of the Habitats Directive. Monitoring under Regulation 812/2004 is done largely in collaboration with the fishing industry. Bycatch mitigation work is a key complementary programme of work that is intended to ensure any problem that is identified with protected species bycatch can be addressed in an equitable and expedient manner to meet the UK's obligations under Regulation 812/2004 and Article 12 of the Habitats Directive. The observer scheme relies upon good collaborative links with industry. Nevertheless fisheries regulations were enacted in England and Scotland to ensure that there is also a legal obligation for skippers and owners to take observers when asked to do so. Bycatch monitoring in the UK fisheries of static nets in IVa (west Scotland) and Via (northern North Sea) as required by EU Reg 812/2004 has not demonstrated a single cetacean bycatch event since the programme began in 2005. Additionally, monitoring of the main herring and mackerel pelagic trawl fisheries in VIa and IVa has been reduced because there is now good evidence that cetacean bycatch rates in these fisheries are very low. The lack of observed bycatch in UK fisheries under current monitoring programmes coupled with the low percentage of bycaught animals in the strandings record suggests that bycatch is not a major pressure for this species in UK waters. Concern regarding the impact of anthropogenically derived sound on marine mammals has been rising in recent decades. The range of sources of anthropogenic noise in the marine environment is many and varied. Some activities, e.g. shipping and other motorised vessels, use of explosives, drilling, dredging and construction, all produce noise indirectly. Other sources, such as active sonars operating at a variety of frequencies, air guns and boomers used in seismic surveys, pingers and acoustic harassment devices, are sources of deliberately introduced sound in the marine environment. The impact of this noise varies from nil (or attraction, e.g. bow riding) to severe depending on the type, frequency and duration of the noise, as well as the relation to the species of concern. Noise can be tolerated, with normal activity patterns being maintained and evidence of an overt response being observed (Würsig and Richardson 2009). Oil and gas exploration and production generates a variety of noise, including initial geophysical surveys (using seismic methodologies), rig construction and drilling, and, finally, structure removal. Of greatest concern is the noise associated with the seismic surveys which use airguns to generate low frequency sound. The Offshore Petroleum Activities (Conservation of Habitats) Regulations 2001 implements the EU Habitats Directive for all oil and gas activities within the UKCS. As

	part of these regulations any company wishing to carry out a seismic survey must apply for consent from the Department of Energy and Climate Change (DECC, formerly the DTI), the JNCC are consulted on whether consent should be granted for each individual seismic survey and if a consent is granted, a standard condition is that the operator must follow the JNCC guidelines for minimising the risk to marine mammals during seismic surveys (JNCC, 2010). The guidelines advise on conducting marine mammal observations prior to and during seismic activity and utilizing procedures such as soft start (gradually increasing the number of active airguns to allow animals nearby to move away) to reduce and avoid direct harm to animals. Over the years, most recently in 2010, these guidelines have been reviewed and revised in the light of scientific evidence, technical developments and operational understanding. A recent review of the marine mammal observer data collected between 1995-2010 onboard seismic vessels (Stone, in prep) documents the responses of cetaceans to seismic surveys. Long-finned pilot whales showed a general avoidance and slower swimming patterns in response to firing airguns. The review has also demonstrated the effectiveness of soft start approach. This review will be published in 2013. The main concern with aggregate extraction is noise generation during survey work. Non-intrusive studies utilise shallow seismic surveys with boomers, which are considerably quieter than the deep seismic surveys undertaken by the oil and gas industry. Currently, consideration is being given to the possible impact of aggregate extraction works on cetaceans with a view to guidelines being developed for UK waters. However, by comparison to other anthropogenic sound in the marine environment, aggregate extraction is not considered to be a major threat at this time. Marine renewable energy generation is a rapidly evolving industry, with some developments amongst the largest offshore engineering projects ever undertaken. The marine renewables industry encompasses three major sectors: offshore wind, tidal-stream and wave energy. The ICES Working Group on Marine Mammal Ecology (WGMME) assessed the effects of construction and operation of windfarms (ICES WGMME 2010), tidal devices (ICES WGMME 2011) and wave energy converters (ICES WGMME 2012) on marine mammals, work that was synthesised by Murphy et al. (2012a). To date, pile driving constitutes the single most important type of impact. In the UK, operators are required to follow the JNCC guidelines for pile driving (JNCC, 2010a). With the amendments to the Habitats Regulations for England and Wales and the new Offshore Marine Regulations in 2007 (and subsequent amendments in 2010), the offences relating to the protection of European Protected Species (EPS) were revised. EPS are species listed on Annex IV. In the territorial waters of Scotland and Northern Ireland, the offence of intentional or reckless disturbance has been incorporated together with the deliberate injury and disturbance regulations. In England and Wales, this offence is covered by the Wildlife and Countryside Act 1981 (as amended). The JNCC, Natural England and the Countryside Council for Wales have provided advice on interpreting these regulations from the point of view of nature conservation. Guidance was developed for those carrying out activities in the marine environment, to help determine the likelihood of committing an offence, how this can be avoided, and, as a last resort, whether the activity could go ahead under licence. In addition, good

	practice guidelines and protocols were developed for specific activities (pile driving, seismic surveys and use of explosives) to minimise the risk of injury and reduce disturbance to cetaceans. With respect to the consequence of certain developments, if the activities involved are not likely to be detrimental to the Favourable Conservation Status of a population but an EPS could still be harmed (injured or significantly disturbed), then the applicant should apply for a licence from the relevant regulator to undertake these activities should mitigation or alternative solutions not be viable. Currently, a draft version of these guidelines is being used by industry until they formally receive Cabinet clearance. Similar guidelines have been developed for Scottish waters. The impact of military activity and, in particular, use of low- and mid-frequency active sonar of high-intensity has become a major issue in recent years. The UK Ministry of Defence (MOD) has developed a number of measures to address the potential impact of military sonar and noise in the marine environment, including the developed a real-time alert procedure for naval training operations. This enables local information on unusual cetacean sightings, such as the presence of a species group closer to shore than usual, to be incorporated into the training schedule and for operations to be relocated if necessary. Such continual improvement of mitigation strategies by the military themselves is probably the best way to limit future impacts. 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.
2.9.6 Overall trend in Conservation Status	

3 Natura 2000 coverage & conservation measures - Annex II species ***(only applies to species listed under Annex II of the Directive)***

3.1 Population		
3.1.1 Population size Estimation of population size included in the SAC network	**a) Unit**	

	b) Minimum	
	c) Maximum	
3.1.2 Method used		
3.1.3 Trend of population size within the network (short-term trend) Optional		

3.2 Conservation measures
Conservation measures taken (i.e. already being implemented) within the reporting period and provided information about their importance, location and evaluation.

3.2.1 Measure	**3.2.2 Type**					**3.2.3 Ranking** H = high importance M = medium importance L = low importance	**3.2.4 Location** where the measure is PRIMARILY applied			**3.2.5 Broad evaluation of the measure**					
	a) Legal/statutory	**b) Administrative**	**c) Contractual**	**d) Recurrent**	**e) One-off**		**a) Inside**	**b) Outside**	**c) Both inside & outside**	**a) Maintain**	**b) Enhance**	**c) Long term**	**d) No effect**	**e) Unknown**	**f) Not evaluated**