

**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:

S2034 - Striped dolphin (*Stenella coeruleoalba*)

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

<i>Field name</i>	<i>Brief explanations</i>	
0.2 Species	0.2.1 Species code	S2034
	0.2.2 Species scientific name	<i>Stenella coeruleoalba</i>
	0.2.3 Alternative species scientific name Optional	
	0.2.4 Common name Optional	

1.1 Maps				
1.1.1 Distribution map		<table border="1"> <tr> <td style="text-align: center;">Sensitive</td> <td style="text-align: center;">False</td> </tr> </table>	Sensitive	False
Sensitive	False			
<p>The UK is at the northern limit of normal distribution and most sightings in British waters are in the southwest approaches with occasional records from deep waters west of Britain and further north (Reid et al., 2003; Stone 2003). However, an increase in sightings and strandings in the UK and Ireland since the 1970s and 1980s suggests that the species' range is extending northwards (Berrow & Rogan 1997; Muir et al., 2000;</p>				

Evans et al., 2003; Jepson 2006) and records of sightings and strandings have occurred as far north as Shetland. Striped dolphins have occurred in most months of the year, although most near shore records from the UK have been between July and December with a strong peak in August (Evans et al., 2003; Evans, 2008; Reid et al., 2003). Between 2005-2010, 55 striped dolphins stranded around the UK coast and 23 were on the Scottish coastline (Deaville and Jepson, 2011). Twelve strandings occurred in 2011, 8 of which occurred in Scotland, 4 in England (Deaville, 2011), while 4 individuals stranded in 2012, 3 of which were in Scotland and 1 in Wales (Deaville, 2012). This distribution is reflected in the distribution map which has been created primarily from strandings data for the 2007-2012 reporting period. Only 2 sightings were in the Joint Cetacean Protocol (JCP, 2012) from 2003 and the scarcity of sightings probably reflects the largely offshore distribution of this species and lower survey effort in the offshore region.

<p>1.1.2 Method used - map</p>	<p>Complete survey/Complete survey or a statistically robust estimate</p> <p>The distribution map is based primarily on the distribution of stranded striped dolphins on the UK coastline for the reporting period 2007-2012. An additional six records were recorded by the Sea Watch Foundation within this period; 3 in the northern Minch off the west of Scotland and a further 3 off southwest England. Although strandings may not accurately reflect true distribution, in the absence of sufficient sightings data, it was used to approximate distribution. Strandings have been converted to presence/absence on a 50x50km grid.</p>
<p>1.1.3 Year or period</p>	<p>2006-2012</p> <p>All records (strandings and sightings) are from the reporting period 2007 - October 2012.</p>
<p>1.1.4 Additional distribution map</p> <p>Optional</p>	<p>Additional Map 1</p>

	<p>During the Cetacean Offshore Distribution and Abundance (CODA) survey in July 2007, no sightings of this species were recorded within the UK EEZ; a few sightings were recorded to the west of Ireland but most occurred to the southwest and south (Hammond et al. 2009). Modelled density of this species using the CODA data (Figure 4, pg. 25 at http://biology.st-andrews.ac.uk/coda/documents/CODA_Final_Report_11-2-09.pdf) highlight the Bay of Biscay and offshore waters to the north west of Spain as the main areas of this species distribution in the European Atlantic.</p> <p>Reid et al. (2003) map the number of individuals sighted per unit time of observation resolved into ¼ International Council for the Exploration of the Sea (ICES) rectangles (15' latitude x 30' longitude). All sightings are restricted to the southwest shelf and shelf edge of the UK.</p> <p>Sightings and strandings are now much more common in UK waters. Additional map 1 shows the distribution of strandings along the UK coastline for the current reporting period (CSIP database). Most occur on the west coast, particularly on the southwest, but extend as far north as the Shetland Islands.</p>
1.1.5 Range map	<p>False</p> <p>The range map has only been reported for Gibraltar – ie within the Marine Mediterranean biogeographic region of UK waters. This species is an occasional species in UK waters, and as such its distribution/range in the Marine Atlantic biogeographic region is unknown and therefore has not been reported</p>

2.1 Biogeographical region & marine regions	MATL
2.2 Published sources	<p>Aguilar, A. and Borrell, A. 1994. Abnormally high polychlorinated biphenyl levels in striped dolphins (<i>Stenella coeruleoalba</i>) affected by the 1990-1992 Mediterranean Epizootic. <i>Science of the Total Environment</i> 154(2-3): 237-247.</p> <p>Antoine, L., Goujon, M. and Massart, G. 2001. Dolphin bycatch in tuna driftnet in North East Atlantic. ICES report, Copenhagen, Denmark 8 pp.</p> <p>Berrow, S. D and Rogan, E. 1997. Cetaceans stranded on the Irish coast. <i>Mammal Review</i>, 27, 51-75.</p> <p>Buckland, S. T. and Turnock, B. J. 1992. A robust line transect method. <i>Biometrics</i> 48:901-909</p> <p>CSIP database. Cetacean Strandings Investigation Programme. Database available on request http://ukstrandings.org/</p> <p>Deaville, R. And Jepson, P. D. (Eds). 2011. Final Report for the period 1st January 2005 – 31st December 2010. Cetacean Stranding Investigation Programme CSIP, Defra contracts CR0346 and CR0364.</p> <p>Deaville, R. 2011. Quarterly report for the period 1st October-30th December 2011. UK Cetacean Strandings Investigation Programme (CSIP).</p>

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

Domingo, M., Visa, J., Pumarola, M and Marco, A. J. 1990. Pathologic and Immunocytochemical Studies of Morbillivirus Infection in Striped Dolphins (*Stenella coeruleoalba*). Vet Pathol 29: 1-10

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.

Goujon, M. 1996. Driftnet incidental catch and population dynamics of dolphins off the Bay of Biscay. Publ Lab Halieut Ec Natl Super Agron, Ecole Nationale Supérieure Agronomique De Rennes, Rennes France, no 15, 239 pp.

Hammond, P. S., Macleod, K., Gillespie, D., Swift, R., Winship, A., Burt, M.L., Cañadas, A., Vázquez, J.A., Ridoux, V., Certain, G., Van Canneyt, O., Lens, S., Santos, B., Rogan, E., Uriarte, A., Hernandez, C. and Castro, R. 2009. Cetacean Offshore Distribution and Abundance in the European Atlantic (CODA). Final Report available from the Sea Mammal Research Unit, University St Andrews, Fife, UK.

Hedley, S. L. and Buckland, S. T. 2004. Spatial models for line transect sampling. Journal of Agricultural, Biological, and Environmental Statistics 9:181-199

Isaksen, K. and Syvertsen, P.O. 2002. Striped dolphins *Stenella coeruleoalba* in Norwegian and adjacent waters. Mammalia. 66(1): 33-41.

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

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

Muir, A.I., Chimonides, P. D. J. and Spurrier, 2000. Trends in cetacean strandings on the British Coastline, 1994-1999. Defra Report No. ECM 516/00.

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.

Rogan, E. and Mackey, M. 2007. Megafauna bycatch in drift nets for albacore tuna (*Thunnus alalunga*) in the NE Atlantic. Fish Res 86: 6-14.

Storelli, M. M., Barone, G., Giacomini-Stuffler, R. and

	Marcotrigiano, G.O. 2012. Contamination by polychlorinated biphenyls (PCBs) in striped dolphins (<i>Stenella coeruleoalba</i>) from the Southeastern Mediterranean Sea. Environ Monit Assess. 184 (9):5797-805.

2.3 Range	
2.3.1 Surface area Range	
2.3.2 Method used Surface area of Range	Absent data
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
	c) FRR is unknown (indicated by "true") True

	d) Method used to set FRR	There has been an increase in sightings of striped dolphin since the 1970s, and since 1990 it is ranked as the sixth most frequently stranded cetacean on the UK coast. The increase in records on the North European continental shelf has been linked to the increase in sea temperature associated with climate change (Evans et al., 2003; Jepson, 2005; Isaksen and Syvertsen, 2002). Sightings and strandings records within the UK are increasingly occurring further north and so the range for this species appears to be extending, although given the limited data currently available this can not be quantified.
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	32543
	c) Maximum	139653
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	The estimates do not equate to the population in UK waters. They are for the entire CODA survey area (see 2.4.12 d)
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 The population estimate is derived from survey data collected during the Cetacean Offshore Distribution and Abundance in the European Atlantic (CODA) project (Hammond et al. 2009). As part of this project, large scale line transect surveys were carried out in offshore waters to the west of the UK, Ireland, France and Spain during July 2007. The survey methods (modified Buckland and Turnock, 1992) and analytical methods (density surface modelling, Hedley and Buckland, 2004) enabled precise, unbiased estimates of abundance to be generated for the more commonly encountered species in this area. The abundance estimates were corrected for animals missed on the transect line and responsive movement to the survey vessels.	
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 Method used	Absent data	

2.4.10 Long-term trend – Period Optional	1988-2007	
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	Absent data	
2.4.14 Favourable reference population	a) Number of individuals/agreed exceptions/other units	
	b) Operator	
	c) FRP is unknown (indicated by "true")	True
	d) Method used to set FRP	The minimum and maximum population size estimates are derived from density surface modelling of the data collected during the Cetacean Offshore Distribution and Abundance in the European Atlantic project (CODA) (Hammond et al. 2009). The area surveyed includes 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 striped dolphins in the entire CODA area in July 2007 was 67,414 (CV= 0.38).

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		
2.5.2 Year or period		
2.5.3 Method used Habitat for the species	Absent data	
2.5.4 Quality of the habitat	a) Habitat quality	Unknown
	b) Assessment method	
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	1988-2012	
Optional		
2.5.8 Long-term trend Trend direction	unknown	
Optional		
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	a) Genuine change?	False

value reported at 2.5.1 and the previous reporting round mainly due to		
	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	
F02: Fishing and harvesting aquatic resources	M	
H03: Marine water pollution	M	X
K03: Interspecific faunal relations	M	
M01: Changes in abiotic conditions	L	
M02: Changes in biotic conditions	L	

Very little information is available on threats for this species. One of the biggest pressures internationally comes from bycatch in fishing gear. In the northeast Atlantic, bycatch was significant in the French, Irish and UK driftnet fisheries, primarily for tuna during the 1990s (Goujon, 1996; Antoin et al., 2001; Rogan and Mackey, 2007). This played a role in the decision to prohibit the use of driftnets in the albacore and similar fisheries which came into force in January 2002. Bycatch of this species still occurs in pelagic trawls, particularly in the Bay of Biscay (ICESBYC, 2012).

Unlike elsewhere in its range, bycatch does not appear to be a significant pressure in UK waters at present. This is probably due to a combination of the low density of animals in UK waters and the distribution of fisheries; however, this may become an issue if the number of animals increases in response to climate driven range shift/expansion (Isaksen and Syvertsen, 2002). The results of 110 post mortem examinations (1991-2010) of UK stranded striped dolphins show that the main causes of death were live stranding (34%), infectious disease (18%), starvation (11%) and bycatch (7%) (Deaville and Jepson, 2011). In 2011, 7 post mortem examinations were undertaken. Of these, 2 were linked to live stranding, 1 to starvation, 1 to physical trauma, 1 to meningoencephalitis (*Brucella* sp.), and the remaining 2 results are pending (Deaville, 2011). In 2012, 3 post mortem examinations were undertaken, 2 of which are pending (suspected bacterial infection) and the other was linked to a *Brucella* sp. infection isolated from the brain (Deaville, 2012). High levels of pollutants such as PCBs have been documented in striped dolphins, particularly in the Mediterranean (e.g. Storelli et al. 2012). Although the primary cause of the 1990-1992 mass die off of striped dolphins in the Mediterranean was a morbillivirus (Domingo et al. 1990), high levels of PCBs and other organochlorine pollutants may have contributed to the severity of the epizootic through their immunosuppressive effects (Aguilar and Borrell, 1994).

2.6.1 Method used –	mainly based on expert judgement and other data
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Pressures	In general, ranking of pressures was based on expert judgement and some data. There are some data, mainly from strandings, that indicate the sources of mortality for this species. Most pressures have been marked as Medium: Medium direct or immediate influence, mainly indirect influence and/or acting over moderate part of the area/acting only regionally. This is due to the fact that this species currently occurs in low numbers in the UK and therefore pressures in UK waters act over a small part of this species range.
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2.7 Threats		
a) Threat	b) Ranking	c) Pollution qualifier
	H = high importance (max 5 entries) M = medium importance L = low importance	
F02: Fishing and harvesting aquatic resources	M	
H03: Marine water pollution	M	X
K03: Interspecific faunal relations	M	
M01: Changes in abiotic conditions	M	
M02: Changes in biotic conditions	M	

2.7.1 Method used – Threats	expert opinion
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2.8 Complementary information	
2.8.1 Justification of % thresholds for trends	
2.8.2 Other relevant information	
2.8.3 Trans-boundary assessment	

2.9 Conclusions (<i>assessment of conservation status at end of reporting period</i>)		
2.9.1 Range	a) Conclusion	Unknown

	b) Qualifier	
2.9.2 Population	a) Conclusion	Unknown
	b) Qualifier	
2.9.3 Habitat for the species	a) Conclusion	Unknown
	b) Qualifier	
2.9.4 Future prospects	a) Conclusion	Unknown
	b) Qualifier	
2.9.5 Overall assessment of Conservation Status	Unknown	
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		

<p>3.1.3 Trend of population size within the network (short-term trend)</p>	
<p>Optional</p>	

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

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