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

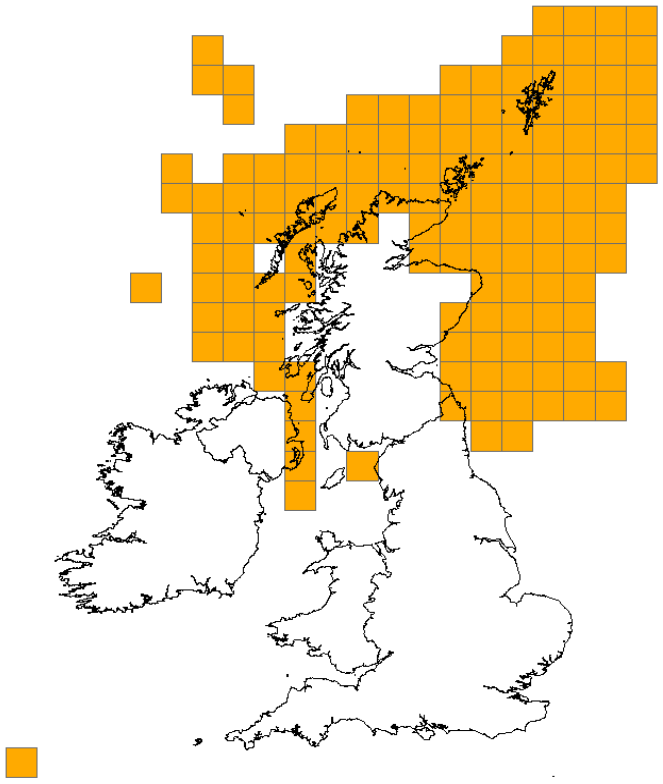
on the implementation of the Directive from January 2007 to December 2012
Conservation status assessment for

Species:

S2031 - Atlantic white-sided dolphin (*Lagenorhynchus acutus*)

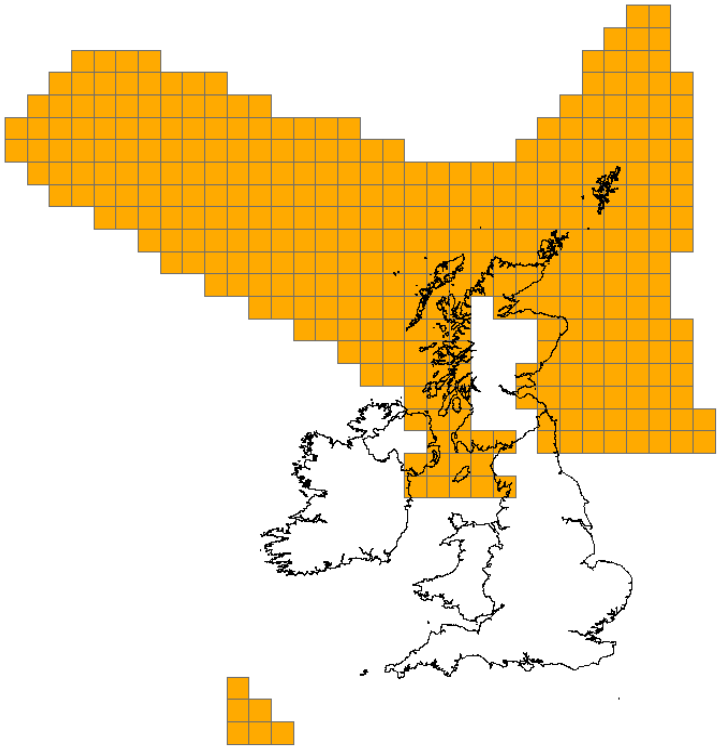
Reporting format on the 'main results of the surveillance under Article 11' for Annex II, IV & V species

Field name	*Brief explanations*	
0.2 Species	**0.2.1 Species code**	**S2031**
	0.2.2 Species scientific name	***Lagenorhynchus acutus***
	0.2.3 Alternative species scientific name Optional	
	0.2.4 Common name Optional	

1.1 Maps			
1.1.1 Distribution map		**Sensitive**	**False**
	The map shows that white-sided dolphins are distributed primarily in the north of the UK; from northern England, Northern Ireland north to waters around the Northern Isles. This species is effectively absent from the southern North Sea, Channel, southern Irish Sea and Celtic Shelf, although there are occasional records from these areas (Evans et al., 2003; Reid et al., 2003; Evans, 2008). White-sided dolphins occur on the continental shelf, shelf edge and particularly in deep waters west of Scotland. Their presence beyond the shelf edge is not well represented by the map due to limited data for this area for the current reporting period. However, numerous		

	sightings have been recorded in offshore waters north and west of Scotland (Weir et al. 2001), particularly in the Faroe-Shetland Channel (Macleod et al. 2003; Macleod, 2004; Hastie et al. 2005; Stone, in press). Although white-sided dolphins occur year round, sightings to the west of the UK tend to peak during late summer through to November (Weir, 2001). Hastie et al. (2005) also found that acoustic detections of probable white-sided dolphins in the Faroe-Shetland Channel were greater in October than in May. Since 1990, there has been an increase in recorded strandings of white-sided dolphins along the UK coast, most of which occurred in Scotland. There have been 39 individuals stranded between 2000-2004 (Jepson, 2005), 86 between 2005-2010 (73 of which in Scotland) (Deaville and Jepson, 2011), 11 in 2011 (Deaville, 2011), and 3 between January and June 2012 (Deaville, 2012).

1.1.2 Method used - map	**Estimate based on partial data with some extrapolation and/or modelling**
	The distribution map was based on an analysis of effort related survey data spanning 1994-2010 compiled for the Joint Cetacean Protocol (http://jncc.defra.gov.uk/page-5657). Sightings data were standardised and a model fitted to corrected animal counts against a suite of explanatory environmental covariates (Paxton et al. in prep). The best model was used to predict density of white-sided dolphins throughout the Marine Atlantic Biogeographic region (up to 300m water depth) on prediction grid of 5x5km resolution. For the purposes of this reporting period, the predicted density for mid-August 2010 was used to assess distribution of this species. Any grid cell with a density value less than 0.0001/sq km was assigned a zero value (i.e. absence) and cells with density greater than the threshold were assigned a 1 (i.e. presence). This presence/absence surface was then mapped against a grid of 50x50km resolution to summarise distribution; a 50x50km cell was given 'presence' code (i.e. 1) if at least 25% of the 5x5km prediction grid cells within it had a presence (i.e. density >0.0001/sq km). Sightings from the Cetacean Offshore Distribution and Abundance (CODA) survey in July 2007 were also mapped as the survey area lies predominantly beyond the JCP prediction area (up to 300m depth). These sightings were also converted to presence at a 50x50km resolution.
1.1.3 Year or period	**2007-2010**
	The map used to interpret distribution was a mid-August 2010 density prediction derived from modelling a collation of datasets held by the Joint Cetacean Protocol for the period 1994-2010 (Paxton et al. in prep). Additionally, sightings data from the July 2007 Cetacean Offshore Distribution and Abundance survey were used to look at distribution beyond the continental shelf (CODA, 2009).
1.1.4 Additional distribution map Optional	**False**
	Paxton et al. (in prep.) predicted the distribution of white-sided dolphin for mid-August 2010 on a 5x5km grid. The prediction is based on analysis of data collected between 1994 and 2010. The data are from a wide variety of sources but all surveys collected survey effort data and sightings i.e. Opportunistic sightings were not used. The data were standardised and corrections applied to account for animals missed during surveys, and detections modelled using a variety of environmental covariates, year, season and latitude and longitude. Although caution is needed in interpreting the edges of the prediction, the map suggests that this species is most commonly found on the western UK (and Ireland) continental shelf edge. This is well supported by the literature (e.g. Reid

	et al. 2003). It also occurs on the shelf, but at lower densities, around northern England, Northern Ireland and Scotland. In August 2010, the highest densities are predicted around the Northern Isles, however this area also has very limited survey effort so peaks in density have a high uncertainty associated with them. The JCP analysis does not predict beyond 300m water depth, where densities of this species are greatest.
1.1.5 Range map	
	Range is based on the predicted distribution (1.1.1), actual sightings and expert judgement. The distribution map is based on predicted distribution up to a depth of 300m only, and does not capture the distribution of this species further offshore and only CODA data were available for mapping this species distribution in offshore waters during the reporting period. However, there are numerous other studies, which confirm presence of this species beyond the continental shelf edge (Pollock et al. 2000, Weir et al. 2001; Macleod, 2004; Hastie et al. 2005; Stone, in press). These deep areas, therefore, are considered core areas of this species range. On the continental shelf, its range is limited to the more northerly areas; northern Irish Sea, Hebridean Shelf, Northern Isles and northern North Sea. There were not data to suggest regular use of the continental shelf in the south and southwest UK EEZ.

2.1 Biogeographical region & marine regions	**MATL**
2.2 Published sources	**Banguera-Hinestroza, E., Evans,P., Mirimim, L., Reid, R. J., Mikkelsen, B., Couperus, B., Deaville, R., Rogan, E and Hoelzel,**

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2.3 Range		
2.3.1 Surface area Range	**831424**	
	The range is based on the distributional data for the reporting period (1.1.1) and expert judgement as to the likely boundaries of the species range. Sightings data suggest that use of different parts of the range changes with season and there are key areas within the range where this species is most common (e.g. Faroe Shetland Channel) with relatively low densities elsewhere, particularly on the shelf. Atlantic white-sided dolphins occur in deep waters off the north of Scotland year-round (Reid et al. 2003). They are present in the Northern North Sea mainly in summer (Reid et al. 2003). Therefore, use of parts of this species range varies with season but the surface area as depicted in the range map (1.1.5) represents the likely greatest extent of this species considering year-round distribution data.	
2.3.2 Method used Surface area of Range	**Estimate based on partial data with some extrapolation and/or modelling**	
	The range was based on a model prediction of the distribution of white-sided dolphins during mid-August 2010 (Paxton et al. in prep). A model was fitted to effort-related survey data comprising the Joint Cetacean Protocol (JCP) spanning 1994-2010 and with coverage within most of the UK EEZ, excluding waters beyond 300m depth. The best model was used to predict white-sided dolphin density on a gridded surface (resolution 5x5km2) at a variety of temporal and spatial scales. Sightings from the Cetacean Offshore Distribution and Abundance survey (CODA, 2009) were also mapped in ArcMap 10.1 together with the JCP predicted distribution, to provide additional data for UK waters deeper than 300m. These data sources were used to inform judgement about where this species regularly occurs and therefore determine range.	
2.3.3 Short-term trend Period	**2001-2010**	
2.3.4 Short term trend Trend direction	**unknown**	
	This is the first reporting period for which the UK has quantified the area of Atlantic white-sided dolphin range. There is no evidence to suggest a short-term change in the range of this species. The Joint Cetacean Protocol analyses can not be used to assess changes in range for this species, as the analyses does not cover the core areas of this species range in offshore waters.	
2.3.5 Short-term trend Magnitude	**a) Minimum**	

Optional		
	b) Maximum	
2.3.6 Long-term trend Period Optional	**1994-2010**	
2.3.7 Long-term trend Trend direction Optional	**unknown**	
	There is no evidence to suggest a long-term change in the range of this species. The Joint Cetacean Protocol analyses can not be used to assess changes in range for this species, as the analyses does not cover the core areas of this species range in offshore waters.	
2.3.8 Long-term trend Magnitude Optional	**a) Minimum**	
	b) Maximum	
2.3.9 Favourable reference range	**a) Value in km²**	
	The FRR in UK waters is considered to approximately equal the current range for this species. The estimated area represents the likely maximum used based on year-round distribution data. This is the first time the range of this species has been quantified.	
	b) Operator for FRR	**approximately equal to**
	c) FRR is unknown (indicated by "true")	**False**
	d) Method used to set FRR	**The Favourable Reference Range is approximately equivalent to the current range. The area of the range is based on a model prediction of the distribution of Atlantic white-sided dolphin during mid-August 2010 (Paxton et al. in prep), sightings and expert opinion. Paxton et al. (in prep) fitted a model to effort-related survey data comprising the Joint Cetacean Protocol (JCP) spanning 1994-2010 and predicted Atlantic white-sided dolphin density on a gridded surface (resolution 5x5km) at a variety of temporal and spatial scales. The output gridded density surface for mid-August 2010 was mapped in ArcMap 10.1. A grid**

		cell density of less than 0.0001 animals/sq km was equivalent to absence. Presence in waters deeper than 300m is well known from the literature (Pollock et al. 2000, Weir et al. 2001; Macleod, 2004, Hastie et al. 2005, Stone, in press).
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	**34535**
	c) Maximum	**113229**
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	**2005-2007**	
	The estimates of minimum and maximum population size are based on stratified estimates from the pooled analysis of SCANS-II, CODA and T-NASS surveys of 2005 and 2007.	
2.4.5 Method used Population size	**Estimate based on partial data with some extrapolation and/or modelling**	
	Survey blocks from the SCANS-II continental shelf survey of July 2005 (SCANS-II, 2008) and adjoining offshore blocks from the CODA survey in July 2007 (CODA, 2009) were mapped in ArcMap 10.1. The estimated white-sided dolphin range (2.3.2) was mapped on top and the areas of each of the survey blocks within the range were measured. Any areas of range not covered by a SCANS-II or CODA were assigned to an appropriate adjoining block. The density estimates per block were used to derive abundance for each portion of the block within the white-sided dolphin range (area of block within the range multiplied by the estimate of density). All the abundance estimates for each block were summed to give a total abundance throughout the entire UK range. The associated CV and 95% confidence intervals were calculated; the lower and upper 95% confidence intervals are presented as the minimum and maximum population sizes.	
2.4.6 Short-term trend Period	**2001-2012**	
2.4.7 Short-term trend Trend direction	**unknown**	
	The Joint Cetacean Protocol Phase III analyses assessed trends in the abundance of Atlantic white-sided dolphin (Paxton et al. in prep). However, the geographic area over which trends are assessed do not include the core areas of this species range, which is beyond the shelf edge. Therefore detected changes in abundance on the shelf would not necessarily reflect changes throughout its range. Detected changes on the shelf might also be an artifact of redistribution of animals to other areas of its range which were not included in the analysis. For these reasons, the trends reported by Paxton et al. (in prep) for this species are considered unreliable.	
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	**1988-2012**	
2.4.11 Long-term trend Trend direction Optional	**unknown**	
	The Joint Cetacean Protocol Phase III analyses assessed trends in the abundance of Atlantic white-sided dolphin. However, the geographic area over which trends are assessed do not include the core areas of this species range, which is beyond the shelf edge. Therefore detected changes in abundance on the shelf would not necessarily reflect changes throughout its range. Detected changes on the shelf might also be an artifact of redistribution of animals to other areas of its range which were not included in the analysis. For these reasons, the trends reported by Paxton et al. (in prep) for this species are considered unreliable. Paxton et al. (in prep) report a statistically significant decline at the 5% level of Atlantic white-sided dolphin in the truncated EEZ area (EEZ up to 300m depth) of 19% per annum. However, the confidence intervals surrounding this estimate are wide (10 - 27%). When available abundance estimates are compared for 1994/1998 (SCANS estimate (Hammond et al. 2002) and a western Scotland estimate (Macleod 2004)) versus 2005/2007 (2.4.1), there is a considerable overlap in the confidence intervals for the two periods (1994/1998: ~37,000-274,000; 2007/2005:~34,500-113,000) which suggests there is no evidence of a decline; albeit there is low power to detect this. To reflect uncertainty, the trend is reported as 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	**approximately equal to**

	c) FRP is unknown (indicated by "true")	**False**
	d) Method used to set FRP	**The Small Cetacean abundance in the North Sea and adjacent waters (SCANS) survey of 1994, was only able to estimate a combined Lagenorhynchus abundance (white-sided, white-beaked dolphins, and unidentified Lag. sp.) for the continental shelf area including North Sea, Channel, Celtic Shelf but excluding west of Scotland, Irish Sea and waters beyond the shelf edge. The best estimate was 11,760 (CV = 0.26) (Hammond et al. 2002). The best estimate for white-beaked dolphin only was 7,856 (CV=0.3). Therefore, the maximum estimate of Atlantic white-sided dolphins from SCANS 1994 on the continental shelf would be 3,900 assuming all unidentified Lagenorhynchus sp. were white-sided. The Joint Cetacean Protocol generated an abundance of 1,210 white-sided dolphins (95%CI 100 - 11,770) for summer 2010. Both SCANS and JCP estimates refer primarily to the continental shelf and do not include waters beyond the shelf edge. Hammond (Sea Mammal Research Unit, St Andrews, pers comm) and coauthors have combined and analysed data from three sources to generate an abundance of white-sided dolphins i) SCANS-II (July 1995) ii) CODA (July 2007) and iii) T-NASS (July 2007). By pooling sightings from the three surveys, sufficient data were available for a distance sampling analysis. The estimate for the combined survey areas (Northern European Atlantic shelf and offshore from Faroe Islands south to Cadiz, Spain) was 106,406 (CV=0.36) Atlantic white-sided dolphin. From this, the best estimate for the UK EEZ component was derived (notes 2.4.5) as 62,532 (CV= 0.32) white-sided dolphins and this represents the FRV. The only other estimate of abundance for this species within UK waters comes from a survey in 1998; Macleod (2004) estimated the abundance of Atlantic white-sided dolphins from a survey during mid-July - mid-August 1998 off north west Scotland in two areas: i) shelf and offshore waters west of Outer Hebrides and ii) shelf and offshore waters west of**

		the Orkney and Shetland Isles (Faroe-Shetland Channel). The estimated abundance, corrected for animals missed on the transect line (g(0), was 21,371 (CV = 0.54) to the west of the Outer Hebrides and 74,626 (CV = 0.72) in the Faroe Shetland Channel. This estimate, however, does not include wider shelf waters, particularly those to the north of Shetland and in the northern North Sea. There is no evidence for population structure within this species, with genetic samples taken from animals in the eastern North Atlantic being very similar to those from the west (Banguera-Hinestroza et al. 2010). However, samples from the North Sea and eastern Scotland did show some degree of differentiation from other populations, from both the eastern and the western North Atlantic (Banguera-Hinestroza et al. 2010).
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	**831424**
	The suitable habitat for this species is assumed to be equivalent to its range in the current reporting period. However, parts of the range are used preferentially and seasonal movements onto the shelf are most common during the summer (Reid et al. 2003).
2.5.2 Year or period	**2007-2010**
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. This species lives mainly in seaward or along the edges of the continental shelf (Reid et al. 2003). However, they can be numerous in much deeper, oceanic waters (Leopold and Couperus 1995; Pollock et al. 2000; Macleod et al. 2003; Macleod, 2004). In the western Atlantic, they often favour areas of high bottom relief and deep submarine canyons (Selzer and Payne 1988). They do, however, sometimes come onto the continental shelf such as those of the north western North Sea and also enter fjords and inlets (Reid et al. 2003). Little is known about the seasonal movements of L. acutus. They are found in deep waters around the north of Scotland throughout the year, but enter the North Sea mainly in the summer, possibly following prey species (Northridge et al. 1997; Reid et al. 2003; Evans et al. 2003). MacLeod et al (2007) assessed the habitat preferences of marine mammals off the west of Scotland from surveys conducted in Jun/July 2004 and 2005. Sea surface temperature was found to be the most important factor determining this species distribution, with a preference for SST >12.2C (However, white-sided dolphins occur year-round off northwest Scotland and so they do tolerate lower sea surface temperatures). Macleod et al (2007) also found that within waters >12.2C, this species occurred more frequently further away from the coast showing a preference for deeper waters beyond the shelf edge.	
	b) Assessment method	**Cetacean habitats (e.g. feeding and breeding areas) vary temporally and spatially and are influenced by natural and anthropogenic factors. It is often difficult to determine what features characterise cetacean habitats and in quantifying their extent.**
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	**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	
XE: Threats and pressures from outside the EU territory	H	
F02: Fishing and harvesting aquatic resources	M	
G04: Military use and civil unrest	M	
H03: Marine water pollution	M	X
C02: Exploration and extraction of oil or gas	L	
D03: shipping lanes, ports, marine constructions	L	

Between 1991-2010, 84 post mortem examinations were undertaken on white-sided dolphins. The main causes of death were live stranding (54%), infectious disease (21%), starvation (14%), and bycatch (4%) (Deaville and Jepson, 2011). Of the 11 stranded animals in 2011, 3 post mortem examinations were undertaken. Of these, 1 death was due to starvation, and 2 results are still pending (Deaville, 2011). No post mortem examinations have been carried out on the three animals stranded in 2012 (Deaville, 2012).
Historically, Lagenorhynchus acutus was hunted, especially in Norway. There are still some animals taken in eastern Canada and Greenland, while a substantial hunt in the Faroe Islands survives to date, direct catches are common in the Faroe Islands, where more than 500 dolphins can be killed in the drive fisheries in one year (NAMMCO, 2006; Reeves et al., 2009; Bloch and Mikkelsen 2009).
Bycatch is also an issue for this species, and incidental mortality in fishing gear has been reported off Canada, the US, the UK and Ireland. They may be especially susceptible to capture in midwater trawl nets and substantial numbers have been bycaught in pelagic trawl fisheries for horse mackerel and mackerel off south-west of Ireland (Reeves et al. 1999). It was the most affected species, representing 83% of all identified individuals (Couperus 1997a, b). Atlantic white-sided dolphins was also one of the main species identified in a study which investigated marine mammal bycatch in 11 pelagic trawl fisheries operated by four different countries in the Northeast Atlantic. All dolphin bycatch occurred during the night. White-sided dolphins were observed feeding around the net during towing; this behaviour may make them more vulnerable to capture (Morizur et al., 1999). Takes have also been recorded in gillnet and trawl fisheries along the US Atlantic coast (Waring et al. 2008).
As other North Atlantic marine mammal species, white-sided dolphins are contaminated by organochlorines

and other heavy metals (Reeves et al., 2009), and were found to have high levels of perfluorinated organochemicals (FOCs). Feeding prevalently offshore, the contaminant concentration was lower than other marine mammal species stranded along the southern North Sea coast (Van De Vijver et al., 2003). The Lagenorhynchus spp. are very susceptible to noise pollution, and show the strong avoidance of seismic activity (Stone, in prep.) with significant increases in fast swimming (Stone, 2003) and significant orientation variation, displaying strong lateral spatial avoidance (Stone and Tasker, 2006).

2.6.1 Method used – Pressures	**mainly based on expert judgement and other data**
	Pressure ranking for Lagenorhynchus acutus is mainly based on expert opinion, published literature and data from post mortem of stranded animals, which indicate sources of mortality for this species. The threats and pressures outside the EU territory refer to the Faroe Islands hunt in the northeast Atlantic, although there are other direct and indirect takes in the western North Atlantic also.

2.7 Threats

a) Threat	b) Ranking H = high importance (max 5 entries) M = medium importance L = low importance	c) Pollution qualifier
XE: Threats and pressures from outside the EU territory	H	
F02: Fishing and harvesting aquatic resources	M	
M01: Changes in abiotic conditions	M	
M02: Changes in biotic conditions	M	
C02: Exploration and extraction of oil or gas	L	
D03: shipping lanes, ports, marine constructions	L	
G04: Military use and civil unrest	L	

The pressures identified are expected to continue in the longer term. New threats from climate change are expected and the impacts, whilst largely unknown, are expected to be mediated through changes in prey distribution and abundance (Simmonds and Isaac, 2007). MacLeod (2009) concludes that climate change would have an unfavourable effect on the range of this species as both its northern and southern extent of its range are limited by water temperature.

2.7.1 Method used – Threats	**expert opinion**

2.8 Complementary information	
2.8.1 Justification of % thresholds for trends	
2.8.2 Other relevant information	**Sexual maturity is reached in males at an age of 7-11 years and females between 6-12 years (Cipriano, 2009). The time of breeding in the northeast Atlantic is thought to peak in June-July but extends from May-October (Reeves et al. 1999).**
2.8.3 Trans-boundary assessment	

2.9 Conclusions *(assessment of conservation status at end of reporting period)*		
2.9.1 Range	**a) Conclusion**	**Favourable**
	There is no evidence of a change in range for this species and the current range is considered to approximate the Favourable reference range. Therefore, the conclusion for this parameter is Favourable.	
	b) Qualifier	
2.9.2 Population	**a) Conclusion**	**Favourable**
	The FRV is approximately equal to the current population size estimated for this species in the UK EEZ. There is no evidence that the abundance of this species throughout its range has changed in the short or longer-term. Therefore, the conclusion for this paramter is Favourable.	
	b) Qualifier	
2.9.3 Habitat for the species	**a) Conclusion**	**Favourable**
	In the absence of habitat data, the status of habitat can be concluded as Favourable if both range and population are favourable. Therefore, the conclusion for this parameter is Favourable.	
	b) Qualifier	
2.9.4 Future prospects	**a) Conclusion**	**Favourable**
	The overall assessment for Atlantic white-sided dolphin is Favourable.	
	b) Qualifier	
2.9.5 Overall assessment of Conservation Status	**Favourable**	
	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. Monitoring of pressures and the effectiveness of mitigation measures is essential and this is underway for major pressures (e.g. bycatch, noise from seismic, pollution). 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 Department of Energy and Climate Change (DECC, formerly the DTI) has provided funding to initiate plans for the third SCANS survey, scheduled for July 2015/2016. 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. Between 2009 and 2011 the UK trialled alternative pinger types (the DDD) not listed on Annex II of Regulation 812/2004, as part of a scientific investigation as outlined under paragraph 3 Article 2 of the Regulation. This work was a response to a request from the fishing industry to assess the efficacy of using a louder and more robust device that could be attached to the ends of fleets of nets, rather than every 100 or 200 m along the length of each fleet as specified in Annex II of the Regulation. Following successful field trials in the southwest, industry have been supplied with sufficient devices to equip all vessels in

	the local fleet. Following the completion of an extension trial funded by the Fisheries Challenge Fund (FCF) (Kingston and Northridge 2011), monitoring of vessels using pingers is being continued under the heading of scientific studies as required by Regulation 812/2004. The purpose of this is to improve our understanding of the effective range of the DDD pinger and to assess possible habituation issues. The UK's Marine Management Organisation and the Marine Scotland Compliance Enforcement Unit are currently investigating the development of pinger detection units that may be used to determine compliance. No specific enforcement programme is yet underway, but this is expected during the next year (before June 2013). 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 in IVa and VIa as required by EU Reg 812/2004 (pelagic trawls and static nets) has not demonstrated a single cetacean bycatch event since the programme began in 2005. Bycatch of white-sided dolphins is most likely in these areas if it were occurring given its distribution; however, none was documented. The UK has identified those fisheries that are thought to have highest bycatch rates of cetaceans, and has refocused a majority of observer effort into these segments. Most sampling effort is now directed at under-15 m vessels using static gears in subareas IV and VII. Some sampling under Scientific Studies of over-12 m vessels using pingers is also being continued, though at a lower rate than in recent years. 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 & 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 DECC, 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 since the introduction of these guidelines has demonstrated the effectiveness of soft start approach (Stone, in prep). 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 are being used by industry until they formally receive Cabinet clearance. Similar guidelines, 'The Protection of marine European Protected Species from Injury and Disturbance' were drafted in 2012 for Scottish Inshore 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. The Royal Navy uses a range of measures to mitigate potential impacts on marine mammals including "soft starts" (the gradually progressive ramping up of active sonar source levels to allow animals to move away from the vessel conducting the exercise), use of trained marine mammal observers and reduction of sonar source levels when cetaceans are sighted close to a vessel operating sonar transmissions (data: UK MoD, cited in Jepson et al. 2013). They also require, where ever practicable, naval helicopters and fixed-wing aircraft to maintain a 500m minimum flight altitude if any cetaceans are seen on the surface (data: UK MoD, cited in Jepson et al. 2013). They have also 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. This was successfully implemented in April 2009, in relation to the presence of short-beaked common dolphin in the Falmouth Bay area. Over 20 dolphins were seen 15 minutes after Royal Navy sonar trials started. The Royal Navy immediately modified the exercise until the group of dolphins had returned to open water several hours later. Subsequently, the real-time alert procedure has not had to be used, indicating the rarity of such events (naval training operations take place for 42 weeks of the year in this area).The rarity of cetacean MSEs in the vicinity of naval exercise areas suggests that such measures are effective. However, this may be dependent on other factors which may contribute to a MSE. The UKs statutory Nature Conservation bodies maintain an open dialogue with the MOD through, for example, their participation on the steering group for the UKs Cetacean Stranding Investigation Programme. There is ongoing revision and improvement of mitigation strategies by the military themselves and this 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)).
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**