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

Fourth Report by the United Kingdom
under Article 17

on the implementation of the Directive
from January 2013 to December 2018

Conservation status assessment for the species:

S2027 - Killer whale (*Orcinus orca*)

UNITED KINGDOM

IMPORTANT NOTE - PLEASE READ

- The information in this document represents the UK Report on the conservation status of this species, submitted to the European Commission as part of the 2019 UK Reporting under Article 17 of the EU Habitats Directive.

- It is based on supporting information provided by the geographically-relevant Statutory Nature Conservation Bodies, which is documented separately.

- The 2019 Article 17 UK Approach document provides details on how this supporting information contributed to the UK Report and the fields that were completed for each parameter.

- The reporting fields and options used are aligned to those set out in the European Commission guidance.

- Maps showing the distribution and range of the species are included (where available).

- Explanatory notes (where provided) are included at the end. These provide additional audit trail information to that included within the UK assessments. Further underpinning explanatory notes are available in the related country-level reports.

- Some of the reporting fields have been left blank because either: (i) there was insufficient information to complete the field; (ii) completion of the field was not obligatory; and/or (iii) the field was not relevant to this species (section 12 Natura 2000 coverage for Annex II species).

- The UK-level reporting information for all habitats and species is also available in spreadsheet format.

Visit the JNCC website, https://jncc.gov.uk/article17, for further information on UK Article 17 reporting.

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NATIONAL LEVEL	
1. General information	
1.1 Member State	**UK**
1.2 Species code	**2027**
1.3 Species scientific name	**Orcinus orca**
1.4 Alternative species scientific name	
1.5 Common name (in national language)	Killer whale

2. Maps

2.1 Sensitive species	No
2.2 Year or period	2013-2018
2.3 Distribution map	Yes
2.4 Distribution map Method used	Insufficient or no data available
2.5 Additional maps	No

3. Information related to Annex V Species (Art. 14)

3.1 Is the species taken in the wild/exploited?	No	
3.2 Which of the measures in Art. 14 have been taken?	a) regulations regarding access to property	No
	b) temporary or local prohibition of the taking of specimens in the wild and exploitation	No
	c) regulation of the periods and/or methods of taking specimens	No
	d) application of hunting and fishing rules which take account of the conservation of such populations	No
	e) establishment of a system of licences for taking specimens or of quotas	No
	f) regulation of the purchase, sale, offering for sale, keeping for sale or transport for sale of specimens	No
	g) breeding in captivity of animal species as well as artificial propagation of plant species	No
	h) other measures	No

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3.3 Hunting bag or quantity taken in the wild for Mammals and Acipenseridae (Fish)	a) Unit						
	b) Statistics/ quantity taken	Provide statistics/quantity per hunting season or per year (where season is not used) over the reporting period					
		Season/ year 1	Season/ year 2	Season/ year 3	Season/ year 4	Season/ year 5	Season/ year 6
	Min. (raw, ie. not rounded)						
	Max. (raw, ie. not rounded)						
	Unknown	No	No	No	No	No	No

3.4. Hunting bag or quantity taken in the wild Method used

3.5. Additional information

BIOGEOGRAPHICAL LEVEL

4. Biogeographical and marine regions

4.1 Biogeographical or marine region where the species occurs

Marine Atlantic (MATL)

4.2 Sources of information

Beck, S., Foote, A., Kotter, S., Harries, O., Mandleberg, L., Stevik, P., et al. (2014). Using opportunistic photo-identifications to detect a population decline of killer whales (Orcinus ocra) in British and Irish waster. Journal of the Marine Biological Association of the United Kingdom, 94(6), 1327-1333. Doi: 10.1017/S0025315413001124

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JNCC (2010c). JNCC guidelines for minimising the risk of injury to marine mammals from using explosives. August 2010. Available here: http://jncc.defra.gov.uk/pdf/JNCC_Guidelines_Explosives Guidelines_August 2010.pdf

JNCC (2017). JNCC guidelines for minimising the risk of injury to marine mammals from geophysical surveys Available here: http://jncc.defra.gov.uk/pdf/jncc_guidelines_seismicsurvey_aug2017.pdf

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Robinson, K. P., Bamford, C. C. G., Airey, A., Bean, T. S., Bird, C., Haskins, G. N., Sim, T. M. C and Evans, P. G. H (2017) Short Note Killer Whale (Orcinus orca) Occurrence in the Moray Firth, Northeast Scotland: Incidental Sightings, Behavioural Observations, and Photo-Identification Aquatic Mammals 2017, 43(1), 26-32, DOI 10.1578/AM.43.1.2017.26

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5. Range

5.1 Surface area (km²)	1085484	
5.2 Short-term trend Period	2007-2018	
5.3 Short-term trend Direction	Stable (0)	
5.4 Short-term trend Magnitude	a) Minimum	b) Maximum
5.5 Short-term trend Method used	Based mainly on expert opinion with very limited data	
5.6 Long-term trend Period		
5.7 Long-term trend Direction		
5.8 Long-term trend Magnitude	a) Minimum	b) Maximum
5.9 Long-term trend Method used		
5.10 Favourable reference range	a) Area (km²)	1085484
	b) Operator	
	c) Unknown	
	d) Method	Range estimated for the current period matches the range given in the 2013 reporting round (excluding analytic differences).
5.11 Change and reason for change in surface area of range	Use of different method	
	The change is mainly due to: Use of different method	
5.12 Additional information	Range estimated for the current period matches the range given in the 2013 reporting round (excluding analytical differences). This range is considered sufficient and includes all significant ecological variations to ensure survival of the species. Areas within the range are utilised to a lesser or greater extent. It should also be noted that the UK population is part of a wider population and although distinct populations have been identified, such as that off the West of Scotland, many animals reported in UK waters are also recorded in Norwegian and Icelandic waters.	

6. Population

6.1 Year or period	1992-2010	
6.2 Population size (in reporting unit)	a) Unit	number of individuals (i)
	b) Minimum	124

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	c) Maximum
	d) Best single value
6.3 Type of estimate	Minimum
6.4 Additional population size (using population unit other than reporting unit)	a) Unit
	b) Minimum
	c) Maximum
	d) Best single value
6.5 Type of estimate	
6.6 Population size Method used	Based mainly on expert opinion with very limited data
6.7 Short-term trend Period	2007-2018
6.8 Short-term trend Direction	Unknown (x)
6.9 Short-term trend Magnitude	a) Minimum
	b) Maximum
	c) Confidence interval
6.10 Short-term trend Method used	Insufficient or no data available
6.11 Long-term trend Period	
6.12 Long-term trend Direction	
6.13 Long-term trend Magnitude	a) Minimum
	b) Maximum
	c) Confidence interval
6.14 Long-term trend Method used	
6.15 Favourable reference population (using the unit in 6.2 or 6.4)	a) Population size
	b) Operator
	c) Unknown x
	d) Method
6.16 Change and reason for change in population size	No change
	The change is mainly due to:
6.17 Additional information	

7. Habitat for the species

7.1 Sufficiency of area and quality of occupied habitat	a) Are area and quality of occupied habitat sufficient (for long-term survival)?	Unknown
	b) Is there a sufficiently large area of unoccupied habitat of suitable quality (for long-term survival)?	
7.2 Sufficiency of area and quality of occupied habitat Method used	Insufficient or no data available	
7.3 Short-term trend Period	2007-2018	
7.4 Short-term trend Direction	Unknown (x)	

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8. Main pressures and threats

8.1 Characterisation of pressures/threats

Pressure	Ranking
Sports, tourism and leisure activities (F07)	M
Industrial or commercial activities and structures generating noise, light, heat or other forms of pollution (F25)	M
Bycatch and incidental killing (due to fishing and hunting activities) (G12)	M
Mixed source marine water pollution (marine and coastal) (J02)	H

Threat	Ranking
Sports, tourism and leisure activities (F07)	M
Industrial or commercial activities and structures generating noise, light, heat or other forms of pollution (F25)	M
Bycatch and incidental killing (due to fishing and hunting activities) (G12)	M
Mixed source marine water pollution (marine and coastal) (J02)	H
Decline or extinction of related species (e.g. food source / prey, predator / parasite, symbiote, etc.) due to climate change (N07)	M

9. Conservation measures

9.1 Status of measures	a) Are measures needed?	No
	b) Indicate the status of measures	
9.2 Main purpose of the measures taken		
9.3 Location of the measures taken		
9.4 Response to the measures		
9.5 List of main conservation measures		
9.6 Additional information	This species is not an Annex II species under the Habitats Directive, therefore conservation measures stipulated in the Directive are not required. This is	

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reflected in the UK response to field 9.1 (with no measures listed under field 9.5). However, the UK has been committed to supporting several international agreements and conventions on the conservation of marine mammals and the marine environment in general. For example: The Convention on Migratory Species; the Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR). A UK Dolphin and Porpoise Conservation Strategy is currently in development, due for publication in 2019. The strategy is intended to support decision making and identify actions necessary to maintain or improve the conservation status of small cetaceans in UK waters. The UK Government funds a national strandings scheme, ongoing since 1990, which aims to: collate, analyse and report data for all cetacean strandings around the coast of the UK; determine the causes of death in stranded cetaceans, including bycatch and physical trauma and; undertake surveillance on the incidence of disease in stranded cetaceans in order to identify any substantial new threats to their conservation status. These considerations for this species most closely equate to the following five measures in the EU conservation measures list: Reduce impact of mixed source pollution (CJ01) Reduce impact of military installations and activities (CH01) Control/eradication of illegal killing, fishing and harvesting (CG04) Reduce bycatch and incidental killing of non-target species (CG05) Adapt/manage exploitation of energy resources (CC02).

10. Future prospects

10.1 Future prospects of parameters	a) Range	Good
	b) Population	Unknown
	c) Habitat of the species	Unknown

10.2 Additional information	These results are based on the current conservation status for each parameter combined with the future trend for each parameter. The future trend is an estimate of how the parameter is likely to progress into the future, using the current trend as a baseline and considering the balance between threats and measures to assess how these are likely to affect that trend over the next two reporting cycles (12 years). For killer whale, the future trend of Range is assessed as Overall Stable. As the current conservation status for Range is Favourable for this species, the future prospects are considered Good. The future trend and consequently the future prospects for the Population and Habitat parameters are assessed as Unknown; this is due to there being insufficient data to establish current trends for these parameters.

11. Conclusions

11.1. Range	Favourable (FV)
11.2. Population	Unknown (XX)
11.3. Habitat for the species	Unknown (XX)
11.4. Future prospects	Unknown (XX)
11.5 Overall assessment of Conservation Status	Unknown (XX)
11.6 Overall trend in Conservation Status	

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11.7 Change and reasons for change in conservation status and conservation status trend	a) Overall assessment of conservation status
	No change
	The change is mainly due to:
	b) Overall trend in conservation status
	No change
	The change is mainly due to:
11.8 Additional information	Conclusion on Range reached because: (i) the short-term trend direction in Range surface area is stable and (ii) the current Range surface area is approximately equal to the Favourable Reference Range.
	Conclusion on Population reached because: (i) the FRP is unknown; and (ii) the short-term trend direction in Population size is unknown.
	Conclusion on Habitat for the species reached because: (i) the area of habitat is sufficiently large but (ii) the habitat quality is unknown for the long-term survival of the species; and (iii) the short-term trend in area and quality of habitat is unknown.
	Conclusion on Future prospects reached because: (i) the Future prospects for Range are good; (ii) the Future prospects for Population are unknown; and (iii) the Future prospects for Habitat for the species are unknown.
	Overall assessment of Conservation Status is Unknown because two or more of the conclusions are Unknown.
	Overall trend in Conservation Status is based on the combination of the short-term trends for Range - stable, Population - unknown, and Habitat for the species - unknown.

12. Natura 2000 (pSCIs, SCIs and SACs) coverage for Annex II species

12.1 Population size inside the pSCIs, SCIs and SACs network (on the biogeographical/marine level including all sites where the species is present)	a) Unit
	b) Minimum
	c) Maximum
	d) Best single value
12.2 Type of estimate	
12.3 Population size inside the network Method used	
12.4 Short-term trend of population size within the network Direction	
12.5 Short-term trend of population size within the network Method used	
12.6 Additional information	

13. Complementary information

13.1 Justification of % thresholds for trends	
13.2 Trans-boundary assessment	

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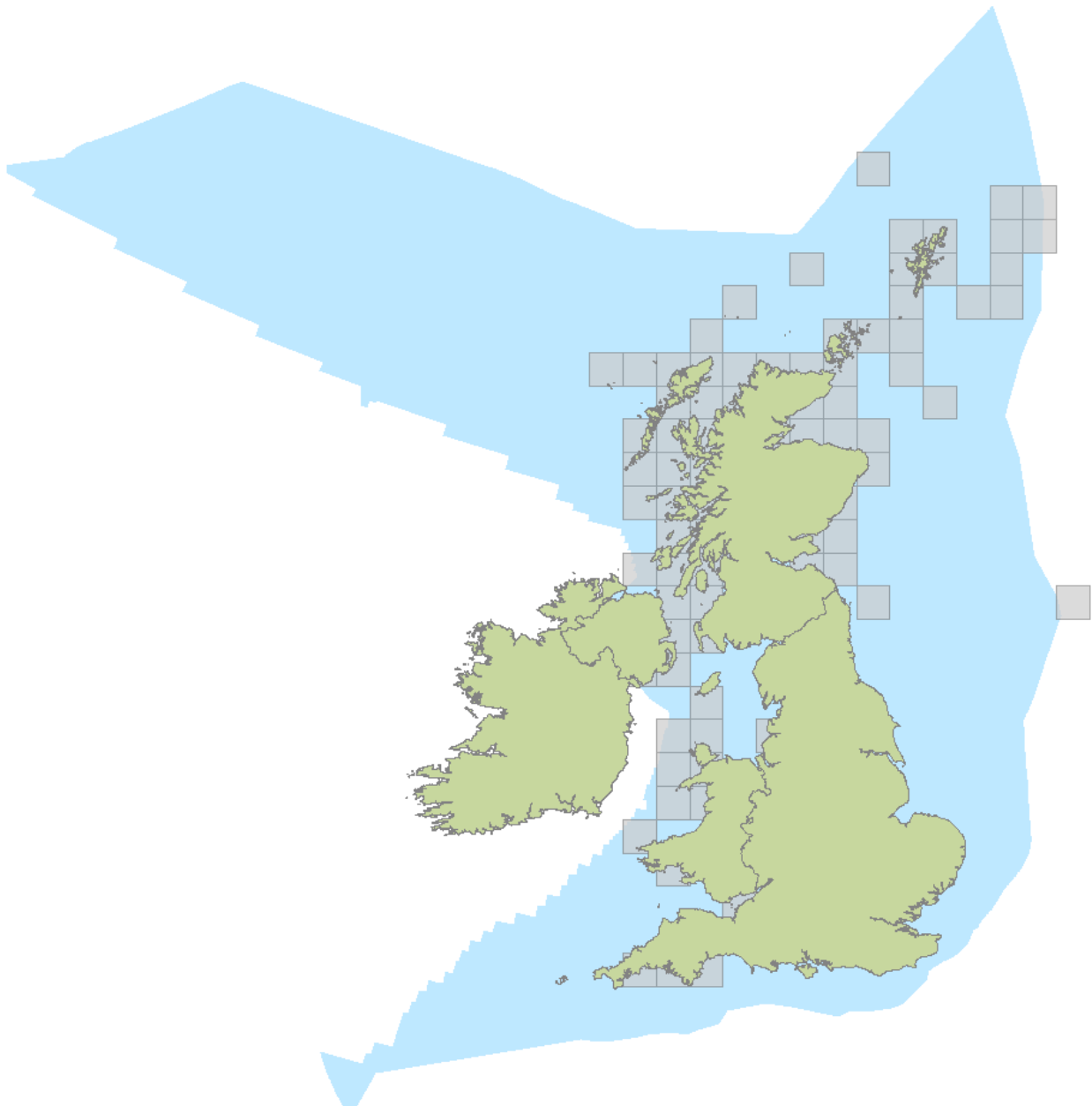
Distribution Map

Figure 1: UK distribution map for S2027 - Killer whale (*Orcinus orca*).

The 50km grid square distribution map is based on available species records within the current reporting period. For further details see the 2019 Article 17 UK Approach document.
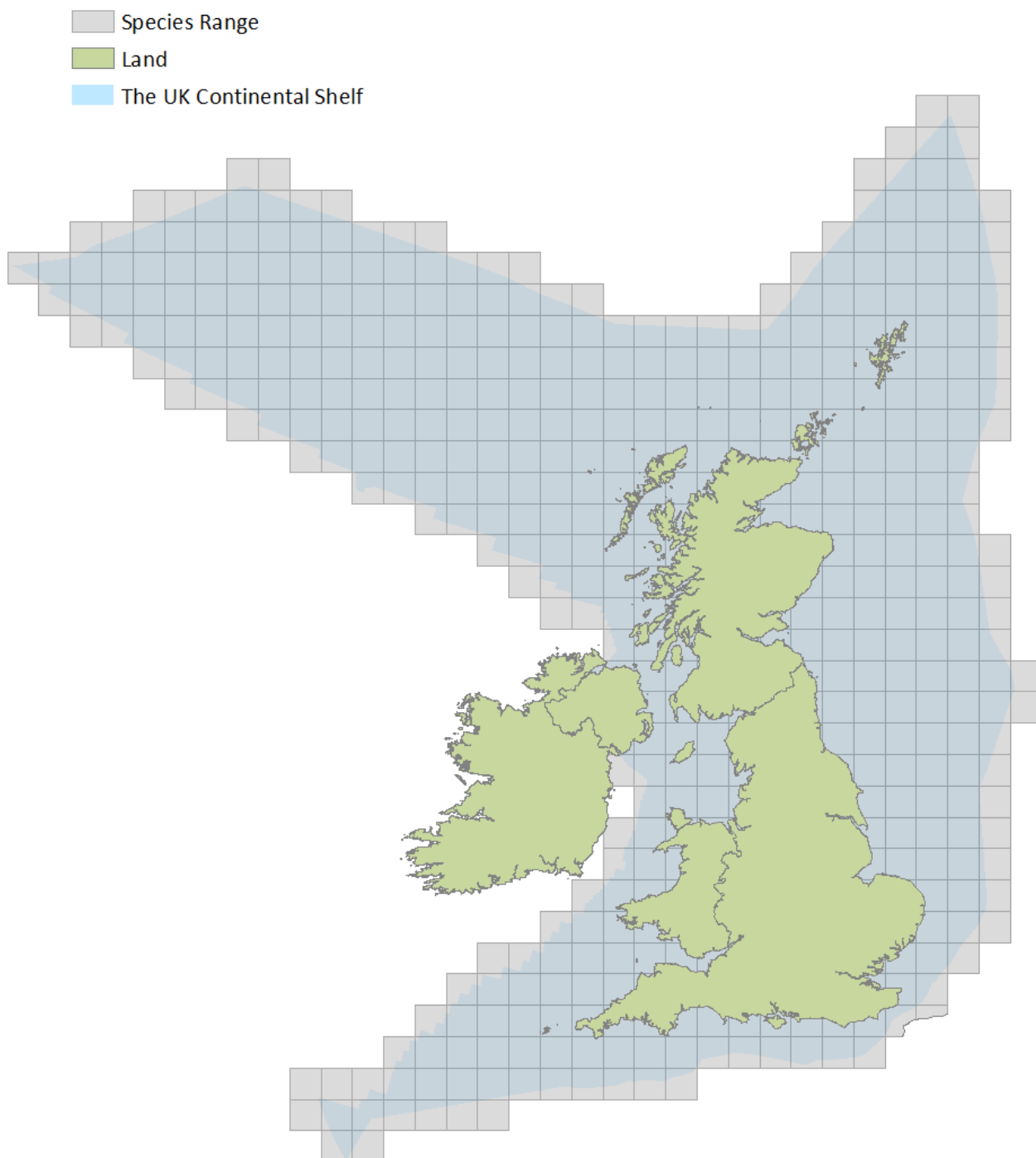
Range Map

Figure 2: UK range map for S2027 - Killer whale (*Orcinus orca*).

The 3rd reporting round (2007-2012) range was based on interpolation of distribution data from the 2007-2012 report and expert opinion. For the current report, the 3rd reporting round (2007-2012) range was mapped using a grid of 50x50km resolution and projected to ETRS LAEA 5210.

Explanatory Notes

Species name: Orcinus orca (2027)

Field label	Note
2.1 Sensitive species	This refers to sensitivities around publishing distribution data.
2.3 Distribution map	Killer whales are a wide-ranging species and can be found in coastal and offshore waters around the UK. Sightings are more common off the Northern Isles, Hebrides, and west mainland Scotland (Bolt et al., 2009) than elsewhere in UK waters. A small, resident pod of eight individuals are observed off west coast of Scotland year-round, and members of the Icelandic population are observed in the Northern Isles and northern Scotland year- round with increased sightings during summer months (Foote et al., 2010; Deecke et al., 2011; Samarra & Foote, 2015). These coastal occurrences are well depicted in the distribution data (Annex A) but the species' offshore distribution is poorly represented, largely due to lower survey effort in the offshore region. This distribution is therefore not considered representative and the range map presented in Annex B is thought to be a better depiction of their likely distribution in UK waters. The distribution map (see Annex A) is based on actual sightings of killer whale, covering the UK Exclusive Economic Zone (EEZ) and UK Continental Shelf area (hereafter referred to as 'UK waters') between 2013 and 2018. This collates sightings data from the SCANS- III, National Biodiversity Network (NBN), SeaWatch Foundation and ORCA datasets and includes both effort related sightings and confirmed opportunistic sightings collected from land-based, ship-based and aerial platforms during this period.
2.4 Distribution map; Method used	The distribution obtained for killer whale uses all available sightings data collected within the 2013-2018 period. Although killer whale occurrence in coastal waters is well represented by the data, the distribution map (Annex A) obtained is a poor representation of killer whale distribution in wider UK waters, largely due to low survey effort in deep-waters where the species is known to occur. Further survey effort in these offshore areas is required to improve this. It is therefore concluded that the resulting map is not entirely representative of their actual distribution in UK waters and it is likely that the species range (Annex B) gives a better indication of where the species is likely to be found UK waters.
2.5 Additional maps	Predicted core range for killer whales in UK waters (see Annex B). Killer whale range widely and can be observed throughout UK waters, though they are more common in northerly waters. No evidence of change since 2013 reporting round. Due to insufficient available data, the modelling approach (see Paxton et al., 2016) used for the more common species could not be applied to killer whale. Instead, the 3rd reporting round (2013) range was based on interpolation of distribution data from the 2013 report and expert opinion.

Species name: Orcinus orca (2027) Region code: MATL

Field label	Note
5.3 Short term trend; Direction	Range for the current report (1,085,484km2) is equal to the range presented in the 3rd reporting round (1,088,567km2).

5.5 Short term trend; Method used	To assess the short-term trend in range, the previous favourable reference range was compared with the available distribution data. Due to insufficient available data, the modelling approach (see Paxton et al., 2016) used for the more common species could not be applied to killer whale. Instead, the 2013 reported range was based on interpolation of distribution data from previous Article 17 reports. The distribution data collated for the current report (detailed in Section 2.3) was compared with the predicted range from the 3rd reporting round (2013). The distribution data from the current report fall within the predicted range area from the 2013 report, indicating that there has been no significant change in range over the described period. As there was no discernible difference between the 3rd (2013) and 4th (2019) reporting rounds, the range is considered stable.
5.10 Favourable reference range	The favourable reference range is approximately equal to the surface area given in Section 5.1.
5.11 Change and reason for change in surface area of range	Range is considered stable but there is a minor difference in the range value between this report and the 3rd reporting round (2013). The difference is due to the use of a slightly different grid template and does not represent an actual difference in the species range between reporting rounds.
6.1 Year or Period	This represents the range of years over which photo-identification studies and analysis have been carried out to inform population numbers around the UK.
6.2 Population size	There is evidence from photo identification studies which indicate a minimum population value for killer whale in UK waters. There is a resident population of 8 animals off the West coast of Scotland, which shows no evidence of recruitment and is endangered (Beck et al, 2014). Work by Foote et al, (2010) identified a minimum of 50 individuals through mark-recapture analysis using the Northern Isles (Shetland and Orkney) and northeast Scottish coastline (Robinson et al, 2017), totalling 58 individuals. More recently, the 2009 Scottish Killer Whale Photo-id Catalogue has identified 124 individuals in Scottish waters (Foote, in prep) and this is currently considered the best minimum estimate. There are no population estimates from the SCANS-II and SCANS-III line transect surveys therefore there are insufficient data to determine a maximum or best population number due to lack of data throughout the range. Further survey effort is required to provide adequate evidence on which to base an assessment of abundance.
6.6 Population size; Method used	There are insufficient data with which to assess abundance of killer whales in UK waters.
6.15 Favourable reference population	With no reliable population values due to limited data availability, it is not possible to set a favourable reference value for killer whales in UK waters.
7.1 Sufficiency of area and quality of occupied habitat	As data relating to habitat quality is limited for this species, the assessment of this parameter is based on the conclusions for range and population as a proxy for habitat. The range for this species remains unchanged since the 3rd reporting round (2013). However, there is no population value due to limited evidence. As the population parameter is Unknown, we cannot conclude that the supporting habitat is sufficient.
8.1 Characterisation of pressures/ threats	G12 Bycatch and incidental killing (due to fishing and hunting activities): Application of pressure: Used to identify risk from bycatch in active fishing gears. Although records of bycatch in this species are relatively low, instances may have a population level effect on small resident populations such as that occurring off West Scotland, therefore risk is considered medium. 1 of the 8 animals examined at post mortem by the UK CSIP had a cause of death of entanglement. The main risk comes from creeling and potting gears where rope is set between traps therefore animals spending time in coastal areas are at the highest risk of entanglement (http://ukstrandings.org/csip-reports).

8.1 Characterisation of pressures/ threats	Pressure ranking for killer whale is mainly based on expert opinion and data from post mortem of stranded animals, which indicate sources of mortality for this species. A literature search was carried out for any other available evidence to support the assessments. The UK Dolphin and Porpoise Conservation Strategy (under development) was used in support of identification of pressures and threats. Between 2000-2017, 18 killer whales were reported as stranded in the UK, of which 8 were examined at post mortem by the UK Cetacean Strandings Investigation Programme (UK CSIP). The main causes of death were starvation (2), live stranding (1) and entanglement (1) (http://ukstrandings.org/csip-reports). Also of concern for this species is the impact of contaminants. As a top predator, killer whales accumulate contaminants through feeding. In a recent study, UK killer whales were amongst 4 species found to have PCB levels that markedly exceeded all known marine mammal threshold, which is linked low recruitment (Jepson et al., 2016).
8.1 Characterisation of pressures/ threats	F07 Sports, tourism and leisure activities: Application of pressure: Used to identify risk of wildlife watching activities. This species is likely to be affected by human disturbance, particularly boat traffic and noise from tourism activities where boats are close for extended periods of time. Boat presence has been linked to significant changes in behaviour, with reduced time spent feeding and consequently a substantial decrease in energy intake (Williams et al., 2002; 2006; 2014). The disturbance impact of this pressure is medium-direct with evidence of recovery/return once the pressure is removed. Exposure is relatively high for populations spending lengths of time in coastal areas such as those associated with the Shetland Isles, however, codes of conduct are in place to mitigate impact.
8.1 Characterisation of pressures/ threats	F25 Industrial or commercial activities and structures generating noise, light, heat or other forms of pollution: Application of pressure: Used to identify risk of the cumulative effects of noise on cetaceans. Cetaceans rely on echolocation for navigation, foraging and communication, making them sensitive to noise in the marine environment (Heiler et al., 2016). Background noise can interfere with communication between killer whales, possibly affecting activities such as cooperative foraging (Foote et al., 2004). Impulsive noise such as seismic may displace animals from preferred locations (Stone et al., 2017). Although different sources of disturbance have been identified as potential pressures in the pre-defined EU list (e.g. disturbance from shipping), these pressures independently have not been identified as Medium or High risk to killer whales in UK waters. However, the cumulative impact of activities can affect distribution and communication of animals (Heiler et al., 2016).
8.1 Characterisation of pressures/ threats	N07 Decline or extinction of related species (e.g. food source / prey, predator / parasite, symbiot, etc.) due to climate change: Application of pressure: Used to identify risk from climate change. There is no current evidence for the effects of climate change on killer whales. Threat: The effect of climate change on killer whales is likely to be mediated through variation in prey resource initially. Killer whale populations common to and adjacent to the UK show variation in specialisation in prey, from mammal eaters to fish eaters, which indicates the species may be adept at adapting according to prey availability (Jourdain et al., 2017).

8.1 Characterisation of pressures/ threats	J02 Mixed source marine water pollution (marine and coastal): Application of pressure: Used to identify risk from marine and coastal pollution. The general impact of contaminants, particularly PCBs, on cetaceans is well documented, including impacts on the immune system and reproduction (Jepson et al, 2016). PCBs are recognised as one of the most significant pollutants impacting cetaceans despite measures to reduce PCB pollution (Jepson et al, 2016). This pressure has an indirect effect on mortality, mediated through the diet (bioaccumulation), causing reduced resilience to disease and lower fecundity through increased foetal mortality. The influence is long-term and intergenerational, with the pressure ubiquitous across the species range. Analysis of blubber samples from the 1 killer whale examined at post mortem by the UK CSIP in 2017 revealed markedly high PCB concentrations, however, it should be noted the animal's cause of death was entanglement (Brownlow et al., 2016). Although Killer whales are able to break down contaminants to some extent, the levels exceed proposed thresholds for toxicity (Kannan et al., 2000: Jepson et al., 2016), and impact of the life-time exposure to these contaminants is unknown (Rayne et al., 2004).
9.5 List of main conservation measures	CH01 Reduce impact of military installations and activities: To reduce the risk of noise impact on marine mammals, the UK Ministry of Defence (MOD) has a Statement of Intent with UK Statutory Nature Conservation Bodies concerning conduct in relation to marine disturbance. The MOD has developed a real-time alert procedure for naval training operations. This enables localised information on cetacean sightings to be incorporated into the training schedule and for operations to be relocated if necessary.
9.5 List of main conservation measures	CG04 Control/eradication of illegal killing, fishing and harvesting: The Habitats Directive is transposed into UK law under the Habitat Regulations (HR) for England and Wales (as amended) and the Offshore Marine Conservation (Natural Habitats, &c.) Regulations 2007 (as amended), which make it an offence to kill, injure, capture or disturb European marine protected species. Similar legislation exists for Scottish and Northern Irish inshore waters.
9.5 List of main conservation measures	CG05 Reduce bycatch and incidental killing of non-target species: 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. Since 2004, a dedicated bycatch monitoring scheme has been in place, managed by the Sea Mammal Research Unit at University of St Andrews, with both dedicated and non-dedicated onboard observers collecting data on bycatch numbers as well as mitigation compliance and effectiveness of measures.
9.5 List of main conservation measures	CC02 Adapt/manage exploitation of energy resources: Guidance for the protection of marine European Protected Species from deliberate injury, killing and disturbance has been drafted (JNCC 2010a; Marine Scotland, 2014). Marine Industries generate a variety of noise through activities such as geophysical surveys (e.g. seismic surveys (JNCC 2017)), construction (e.g. pile driving (JNCC 2010b)) and decommissioning (e.g. use of explosives (2010c)). As part of the licencing procedures, developers and operators are required to utilise JNCC guidelines to minimise the risk of injury to cetaceans when undertaking such activities (JNCC 2010b, 2010c; JNCC 2017). The guidelines advise on conducting marine mammal observations prior to and during the activity and, where suitable, utilising procedures such as soft start (gradual introduction of the sound) to reduce and avoid direct harm to animals. A review of the marine mammal observer data demonstrated the effectiveness of soft start approach (Stone et al, 2017).
9.5 List of main conservation measures	CJ01 Reduce impact of mixed source pollution: The impact of chemical pollution on killer whales remains an issue (Jepson et al, 2016), however, establishing measures beyond the historic ban on PCB use, has not been achieved to date. Further information is required to understand where exposure is occurring to be able to identify appropriate measures.

10.1 Future prospects of parameters	10.1a Range: The overall assessment of this parameter is favourable and there is no evidence that risk is increasing in the next 12 years (two reporting rounds). 10.1b Population: Insufficient information to assess the status of this parameter. Although the pressures impacting this parameter are not thought to be increasing and there are no threats identified which are likely to impact in the next 12 years, the uncertainty surrounding the current status of this parameter make it impossible to predict its future prospects. 10.1c Habitat of the species: Insufficient information to assess the status of this parameter. Although the pressures impacting this parameter are not thought to be increasing and there are no threats identified which are likely to impact in the next 12 years, the uncertainty surrounding the current status of this parameter make it impractical to predict future prospects.
11.1 Range	There is no evidence to suggest range has changed since the last reporting round (2013) and therefore the range assessment remains Favourable.
11.2 Population	There are insufficient data available on the UK population to assess trend at the UK scale.
11.3 Habitat for the species	Range is Favourable but population is Unknown. Therefore, the quality of habitat for the species cannot be inferred in the absence of population information.
11.4 Future prospects	There are two or more Unknown results (population and habitat) therefore future prospects are Unknown given a lack of evidence on which to base an assessment.
11.5 Overall assessment of Conservation Status	There are two or more Unknown results (population, habitat and future prospects) therefore the overall assessment of conservation status is Unknown.
11.7 Change and reasons for change in conservation status and conservation status trend	Although killer whales have previously been assessed as Unknown, and so there has been no change in conservation status since the last reporting round, the approach to dealing with limited data has been revised. Where less than three data points are available, identification of trends in abundance is not possible with any level of confidence. Both the guidance and the rationale used have changed between the 3rd report (2013) and the current report. Although this has not changed the conservation status, it does highlight that the underpinning data are insufficient at present to make a confident assessment of the conservation status for killer whale. Further monitoring is required to assess this species fully.