Reporting under the Habitat Regulations (as amended)[1]

2019-2024

Conservation status assessment for the species:

S2625-S2035-S5034-S2038-S2037-S5033 - Beaked whale

(*Ziphiidae*)

United Kingdom

[1] **Habitat Regulations (as amended):**

- The Conservation of Habitats and Species Regulations 2017 (as amended), Regulation 9A
- The Conservation of Offshore Marine Habitats and Species Regulations 2017 (as amended), Regulation 6A
- Report under The Conservation (Natural Habitats, &c.) Regulations 1994 (as amended), regulation 3ZA
- The Conservation (Natural Habitats, etc.) Regulations (Northern Ireland) 1995 (as amended), regulation 3ZA

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This report was produced by JNCC in collaboration with the UK Country Nature Conservation Bodies (CNCBs) and country governments.

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Important note - Please read

- The information in this document represents the United Kingdom Reporting under the Habitat Regulations (as amended)[1], for the period 2019-2024.
- It is based on supporting information provided by Joint Nature Conservation Committee and UK Country Nature Consevation Bodies (CNCBs), which is documented separately.
- The Habitats Regulations reporting 2019-2024 Approach Document provides details on how this supporting information contributed to the UK Report and the fields that were completed for each parameter.
- Map showing the distribution and range of the species is included.
- Explanatory notes (where provided) are included at the end. These provide additional audit trail information to that included within the assessments. Further underpinning explanatory notes are available in the related country 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 National Site Network coverage for Annex II species).

Further details on the approach to the Habitats Regulations Reporting 2019-2024 are available on the JNCC website.

Assessment Summary: Beaked whale

Distribution and Range Map

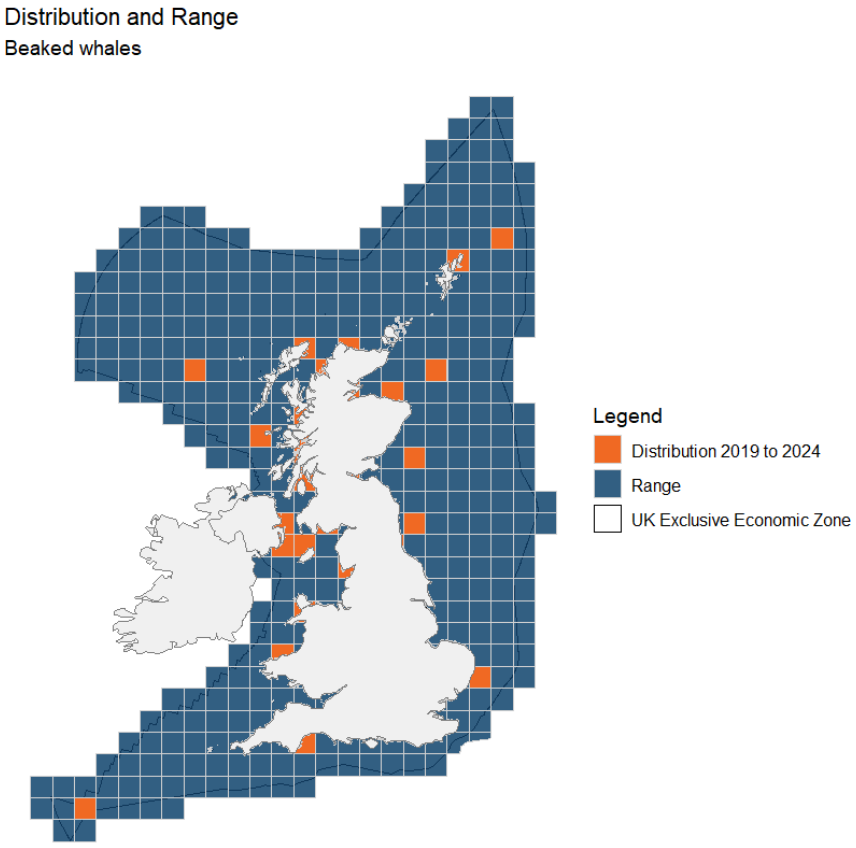

Figure 1: United Kingdom distribution and range map for S2625-S2035-S5034-S2038-S2037-S5033 - Beaked whale (*Ziphiidae*). The 50km grid square distribution map is based on available species records within the current reporting period.

Table 1: Table summarising the conservation status for S2625-S2035-S5034-S2038-S2037-S5033 - Beaked whale (*Ziphiidae*). Overall conservation status for species is based on assessments of range, population, habitat for the species, and future prospects.

Overall Conservation Status (see section 11)

Unknown (XX)

Breakdown of Overall Conservation Status

Range (see section 5)	**Unknown (XX)**
Population (see section 6)	**Unknown (XX)**
Habitat for the species (see section 7)	**Unknown (XX)**
Future prospects (see section 10)	**Unknown (XX)**

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National Level

1. General information

1.1 Country	United Kingdom
1.2 Species code	S2625-S2035-S5034-S2038-S2037-S5033
1.3 Species scientific name	*Ziphiidae*
1.4 Alternative species scientific name	
1.5 Common name	Beaked whale
Annex(es)	IV

2. Maps

2.1 Sensitive species	No
2.2 Year or period	2019-2022
2.3 Distribution map	Yes
2.4 Distribution map; Method used	Complete survey or a statistically robust estimate

2.5 Additional information

The distribution map is based on verified sightings data of beaked whale between 2019 and 2024. The sightings were collated from SCANS IV, Pelagis French surveys, NBN Atlas, European Seabirds at Sea, the Joint Cetacean Data Programme, POSEIDON project, University of Aberdeen, The Crown Estate Marine Data Exchange, Whale and Dolphin Conservation, Hebridean Whale and Dolphin Trust, ORCA, Sea Watch Foundation, Marine Discovery Penzance, Sussex Dolphin Project, Cornwall Seal Group Research Trust, Cardigan Bay Marine Wildlife Centre, Natural England, Sea Trust and The Royal Society for the Protection of Birds (RSPB).

3. Information related to Annex V Species

3.1 Is the species taken in the wild / exploited?

3.2 What measures have been taken?

a) Regulations regarding access to property

b) Temporary or local prohibition on the taking of specimens in the wild and exploitation

c) Regulation of the periods and/or methods of taking specimens

d) Application of hunting and fishing rules which take account of the conservation of such populations

e) Establishment of a system of licences for taking specimens or of quotas

f) Regulation of the purchase, sale, offering for sale, keeping for sale, or transport for sale of specimens

g) Breeding in captivity of animal species as well as artificial propagation of plant species

Other measures

Other measures description

3.3: Hunting bag or quantity taken in the wild for Mammals and Acipenseridae (Fish)

a) Unit

Table 2: Quantity taken from the wild during the reporting period (see 3.3a for units). For species with defined hunting seasons, Season 1 refers to 2018/2019 (autumn 2018 to spring 2019), and Season 6 to 2023/2024. For species without hunting seasons, data are reported by calendar year: Year 1 is 2019, and Year 6 is 2024.

	Season/ year 1	Season/ year 2	Season/ year 3	Season/ year 4	Season/ year 5	Season/ year 6
b) Minimum	-	-	-	-	-	-
c) Maximum	-	-	-	-	-	-
d) Unknown	-	-	-	-	-	-

3.4: Hunting bag or quantity taken in the wild; Method used	

3.5: Additional information

No additional information

Biogeographical Level

4. Biogeographical and marine regions

4.1 Biogeographical or marine region where the species occurs	MATL

4.2 Sources of information

See section 14 References

5. Range

5.1 Surface area (km²)	1,052,500
5.2 Short-term trend; Period	
5.3 Short-term trend; Direction	Unknown
5.4 Short-term trend; Magnitude	
a) Estimated minimum	
b) Estimated maximum	
c) Pre-defined range	
d) Unknown	
e) Type of estimate	
f) Rate of decrease	
5.5 Short-term trend; Method used	Insufficient or no data available
5.6 Long-term trend; Period	
5.7 Long-term trend; Direction	Unknown

5.8 Long-term trend; Magnitude	
a) Minimum	
b) Maximum	
c) Rate of decrease	
5.9 Long-term trend; Method used	Insufficient or no data available

5.10 Favourable Reference Range (FRR)

a) Area (km²)	1,052,500
b) Pre-defined increment	
c) Unknown	No
d) Method used	Expert opinion
e) Quality of information	moderate

5.11 Change and reason for change in surface area of range

a) Change	No
b) Genuine change	
c) Improved knowledge or more accurate data	
d) Different method	
e) No information	
f) Other reason	
g) Main reason	

5.12 Additional information

The FRR was based on an analysis of effort-related survey data spanning 1994-2010 compiled for the Joint Cetacean Protocol (JCP) undertaken by Paxton et al. (2016). Given the nature of these animals, cryptic behaviour and perceived preference for offshore distributions, data are lacking to quantify range. Additional records from observer programmes and presence-only records have been applied to further predict the range of beaked whales in the UK EEZ.

6. Population

6.1 Year or period	2022

6.2 Population size (in reporting unit)

a) Unit	number of individuals
b) Minimum	153
c) Maximum	2,290
d) Best single value	590
6.3 Type of estimate	Best estimate
6.4 Quality of extrapolation to reporting unit	low

6.5 Additional population size (using population unit other than reporting unit)

a) Unit	
b) Minimum	
c) Maximum	
d) Best single value	
e) Type of estimate	

6.6 Population size; Method used	Complete survey or a statistically robust estimate
6.7 Short-term trend; Period	
6.8 Short-term trend; Direction	Unknown
6.9 Short-term trend; Magnitude	
a) Estimated minimum	
b) Estimated maximum	
c) Pre-defined range	
d) Unknown	
e) Type of estimate	

f) Rate of decrease	
6.10 Short-term trend; Method used	Insufficient or no data available
6.11 Long-term trend; Period	
6.12 Long-term trend; Direction	Unknown
6.13 Long-term trend; Magnitude	
a) Minimum	
b) Maximum	
c) Confidence interval	
d) Rate of decrease	
6.14 Long-term trend; Method used	Insufficient or no data available

6.15 Favourable Reference Population (FRP)

ai) Population size	1,467
aii) Unit	number of individuals
b) Pre-defined increment	
c) Unknown	No
d) Method used	Model-based approach
e) Quality of information	moderate

6.16 Change and reason for change in population size

a) Change	Yes
b) Genuine change	No
c) Improved knowledge or more accurate data	No
d) Different method	No
e) No information	No

f) Other reason	Yes
g) Main reason	Other reasons

6.17 Additional information

The population estimate for 2022 is based primarily on density estimates from the SCANS IV survey. However, there is a gap in the 2022 SCANS survey effort in offshore waters west of Scotland, a high-density region for this species which accounted for 61% of the UK population during SCANS III (Gilles et al., 2013; Hammond et al., 2021). The population estimate provided here has therefore been corrected using the % of the UK population sighted in the missing block during SCANS III. Such significant extrapolation lowers confidence in the estimate and conclusions.

In terms of the wider context for the beaked whale population in the NE Atlantic; ObSERVE programme in Irish waters found a slight increase in abundance between 2015 and 2022, with seasonal and interannual variation (Giralt Paradell, et al. 2024). Findings from NASS 2024 survey in the NAMMCO region will provide more context for the northern areas of their range, once published.

The FRV (1467; CV: 1.9; CI: 770-2795) for population was calculated based on estimates from SCANS II in 2005 (Hammond, et al., 2021) and CODA in 2007 (Hammond, et al., 2009), supplemented with density estimates from neighbouring regions to fill data gaps within the UK EEZ and limit extrapolation where possible: ObSERVE in Irish waters (Rogan, e al., 2018), NASS and T-NASS (Pike, et al., 2019a; Pike, et al., 2019b) and NILS (Leonard and Øien, 2020a; Leonard and Øien, 2020b) surveys in the NAMMCO region.

6.18 Age structure, mortality and reproduction deviation	Unknown

7. Habitat for the species

7.1 Sufficiency of area and quality of occupied habitat (for long-term survival)

a) Is area of occupied habitat sufficient?	Unknown
b) Is quality of occupied habitat sufficient?	Unknown

c) If No or Unknown, is there a sufficiently large area of unoccupied habitat of suitable quality?	Unknown

7.2 Sufficiency of area and quality of occupied habitat; Method used

a) Sufficiency of area of occupied habitat; Method used	Based mainly on expert opinion with very limited data
b) Sufficiency of quality of occupied habitat; Method used	Based mainly on expert opinion with very limited data

7.3 Short-term trend; Period

7.4 Short-term trend; Direction	Unknown
7.5 Short-term trend; Method used	Based mainly on expert opinion with very limited data

7.6 Long-term trend; Period

7.7 Long-term trend; Direction	Unknown
7.8 Long-term trend; Method used	Based mainly on expert opinion with very limited data

7.9 Additional information

All beaked whale species found in the UK EEZ are present in greatest densities in offshore waters in depths greater than 1000m, proximity to slopping seafloor topography and sea surface temperature (which is species specific) (Lucey and Hammond, 2023).

Direct evidence of cetacean habitat quality is limited as presently, a comprehensive understanding of the key elements important to the species is undetermined. In some cases, conclusions for species range and population could be indicative of habitat quality by proxy, however confidence in assessment outputs would be low.

8. Main pressures

8.1 Characterisation of pressures

Table 3: Pressures affecting the species, including timing and importance/impact ranking. Pressures are defined as factors acting currently and/or during the reporting period (2019–2024). Rankings are: High

(direct/immediate influence and/or large spatial extent) and Medium (moderate direct/immediate influence, mainly indirect and/or regional extent).

Pressure	Timing	Ranking
Bycatch and incidental killing (due to fishing and hunting activities)	Ongoing and likely to be in the future	Medium (M)
Residential, commercial and industrial activities and structures generating noise, light, heat or other forms of pollution	Ongoing and likely to be in the future	Medium (M)
Military, paramilitary or police exercises and operations in the marine environment	Ongoing and likely to be in the future	High (H)
Threats and pressures from outside the Member State	Ongoing and likely to be in the future	Medium (M)
Mixed source marine water pollution (marine and coastal)	Ongoing and likely to be in the future	Medium (M)
Shipping lanes and ferry lanes transport operations	Ongoing and likely to be in the future	Medium (M)
Geotechnical surveying	Ongoing and likely to be in the future	Medium (M)

8.2 Sources of information

See section 14 References

8.3 Additional information

PG13: Evidence from outside UK waters of beaked whales more generally being bycaught by fisheries but UK stranding schemes have found evidence of entanglement in fishing gear during necropsies/analysis of stranded Sowerby's beaked whales.

PH02: Pressure will be higher regionally off northwest Scotland and in the Southwest Approaches.

PX02: Relating to continued whaling of this species (particularly northern bottlenose whale) outside of UK waters which may be having an impact on populations.

PC07: Regional pressure in the North Sea and the Irish Sea.

9. Conservation measures

9.1: Status of measures

a) Are measures needed?	Yes
b) Indicate the status of measures	Measures identified and taken
9.2 Main purpose of the measures taken	Maintain the current range, population and/or habitat for the species
9.3 Location of the measures taken	Both inside and outside National Site Network
9.4 Response to measures	Medium-term results (within the next two reporting periods, 2025–2036)

9.5 List of main conservation measures

Table 4: Key conservation measures addressing current pressures and/or anticipated threats during the next two reporting periods (2025–2036). Measures are ranked by importance/impact: High (direct/immediate influence and/or large spatial extent) and Medium (moderate direct/immediate influence, mainly indirect and/or regional extent).

Conservation measure	Ranking
Reduce impact of military installations and activities	High (H)
Adapt/manage renewable energy installation, facilities and operation (excl. hydropower and abstraction activities)	High (H)
Adapt/manage exploitation of energy resources	High (H)
Reduce bycatch and incidental killing of non-target species	High (H)

9.6 Additional information

This species is not an Annex II species and therefore the designation of SACs is not required, as stipulated in the Habitats Regulations. However, as a European Protected Species, protection is provided throughout UK waters and it is an offence to kill, injure or disturb. The UK remains committed to the conservation of marine mammals in UK waters and the implementation of measures to mitigate the impact of pressures and conservation measures have been undertaken in the UK and adjacent waters as part of the requirements of the Habitats Regulations. Such measures include monitoring bycatch, monitoring strandings data to monitor current and identify emerging pressures, application of appropriate management measures, and noise monitoring and mitigation with regards to offshore industry. This is reflected in the list of conservation measures under field 9.5. The UK also supports a range of international agreements and conventions on the conservation of marine mammals and the marine environment. For example: The Convention on Migratory Species; the Convention for the Protection of the

Marine Environment of the North-East Atlantic (OSPAR). Defra and devolved administrations fund national strandings schemes for cetaceans which aim to: collate, analyse and report data for all cetacean strandings around the coast of the UK; determine the causes of death (both natural and anthropogenic) 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.

10. Future prospects

10.1a Future trends of parameters

ai) Range	Unknown
bi) Population	Unknown
ci) Habitat for the species	Unknown

10.1b Future prospects of parameters

aii) Range	Unknown
bii) Population	Unknown
cii) Habitat for the species	Unknown

10.2 Additional information

No additional information

11. Conclusions

11.1 Range	Unknown (XX)
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	Unknown

11.7 Change and reason for change in conservation status

a) Change	No
b) Genuine change	
c) Improved knowledge or more accurate data	
d) Different method	
e) No information	
f) Other reason	
g) Main reason	

11.7 Change and reason for change in conservation status trend

a) Change	No
b) Genuine change	
c) Improved knowledge or more accurate data	
d) Different method	
e) No information	
f) Other reason	
g) Main reason	

11.8 Additional information

2019-2024 is the first time beaked whales have been grouped however, the overall assessment does not differ from conclusions for the individual species assessed in previous Article 17 reporting in 2019.

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. However, beaked whales have not been assessed previously and the FRV was set for this report using current information on range and this makes it difficult to determine any meaningful trends in Range thus concluded as Unknown.

Conclusion on Population reached because: (i) the population estimate for 2022 is based primarily on density estimates from the SCANS IV survey. Offshore waters west

of Scotland is considered to be a high-density region for this species, accounting for 22.5% of the total population estimate in 2015 (Gilles, et al., 2013; Hammond et al 2021), and 61% of the UK proportion. As this offshore region west of Scotland was unable to be surveyed as part of the 2022 SCANS IV effort, it has not been possible to calculate the total population abundance estimate for this species across the entire UK EEZ using SCANS IV survey data. The estimated population size in this report is likely to be a significant understimation; and (ii) the short-term trend direction in Population size is unknown as it is not possible to assess trends in population using UK-based data only.

Conclusion on Habitat for the species reached because: (i) it is unknown whether the area of habitat is sufficiently large; (ii) it is unknown if habitat quality is sufficient 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; but (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 shortterm trends for Range - stable, Population - unknown, and Habitat for the species - unknown.

12. UK National Site Network (pSCIs, SCIs, SACs) coverage for Annex II species

12.1 Population size inside the pSCIs, SCIs and SACs network

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 Short-term trend of habitat for the species inside the pSCIs, SCIs and SACs network; Direction

12.7 Short-term trend of habitat for the species inside the pSCIs, SCIs and SACs network; Method used

12.8 Additional information

No additional information

13. Complementary information

13.1 Justification of percentage thresholds for trends

No justification information

13.2 Trans-boundary assessment

No trans-boundary assessment information

13.2 Other relevant information

No other relevant information

14. References

Biogeographical and marine regions

4.2 Sources of information

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Main pressures

8.2 Sources of information

No sources of information

15. Explanatory Notes

Field label	Note
8.1: Characterisation of pressures	PG13 Bycatch and incidental killing (due to fishing and hunting activities). Beaked whales may be susceptible to bycatch or entanglement in fishing gear. While evidence from the UK is limited with causes of death attributed to entanglement in only 2 Sowerby's beaked whales between 2018 and 2022 (Davison et al., 2020; Deaville, 2020), monitoring programmes and studies in other countries have reported entanglement in at least 15 beaked whale species, including all 5 species seen in UK waters (Blainville's, Cuvier's, Sowerby's, True's beaked whale and northern bottlenose whale; Freyer et al., 2024), and in different fishing gears such as driftnets in California (Dolman & Brakes, 2018), pelagic longlines in the US Atlantic Ocean (Garrison, 2007). The full impact of this pressure on populations is unknown; due to the size of beaked whales, individuals may be able to break free and swim away (with or without gear) before an entanglement is recorded and the offshore nature of these species' may limit the number which strand on shores (Freyer et al., 2024). There are fewer dedicated observers for offshore fisheries (Freyer et al., 2024).
8.1: Characterisation of pressures	PF12 Residential, commercial and industrial activities and structures generating noise, light, heat or other forms of pollution. Many of the studies on the impact of noise on beaked whales have focussed on military sonar activity however, cetaceans rely on echolocation for navigation, foraging and communication, making them sensitive to noise in the marine environment (Middel and Verones, 2017). The principal risk from underwater noise for beaked whales is military sonar which has been linked to several mass strandings of beaked whales, globally (Freyer et al., 2024). There is not enough evidence of the impacts from other noise pressures independently (e.g., shipping vessel or renewable energy devices) to assess the risk to beaked whales in UK waters. The cumulative effect of such

	disturbances however, has the potential to increase energy expenditure through avoidance and decreased foraging. Furthermore, anthropogenic noise may have the potential for auditory masking and reduced communication between individuals (Freyer et al., 2024). The frequency of beaked whale calls and echolocation clicks overlap with that of vessel noise (Freyer et al., 2024). Studies from the Mediterranean Sea have demonstrated that Cuvier's and Blainville's beaked whales display avoidance behaviours and, thus short-term foraging impacts in vessel noise (Freyer et al., 2024). In the Clarion-Clipperton Zone (Pacific Ocean), concerns have been highlighted around the impact of noise from deep seabed mining which overlaps in frequency and therefore, potential risk to communication and behaviours (Thompson et al., 2023). Although various individual sources of disturbance have been identified as potential pressures in the pre-defined EU list, such as noise from shipping vessels or renewable energy devices,.
8.1: Characterisation of pressures	PH02 Military, paramilitary or police exercises and operations in the marine environment. Military sonar is one of the greatest pressures for beaked whales and has been linked to multiple fatal strandings, globally (Freyer et al., 2024). Furthermore, multiple studies highlight the risk of non-fatal disturbance including strong avoidance behaviours (e.g., longer dives, rapid movement away from the source and disruption of foraging (e.g., Stanistreet et al., 2022; Tyack et al., 2011; deRuiter et al., 2013; Miller et al., 2015; Freyer et al., 2024). It has been suggested that behavioural response may be individual or context-specific and thus, there is some uncertainty on the impacts to populations however, reduced foraging, changes in diving patterns or habitat exclusion will involve energetic costs and reduced individual fitness (Bernaldo de Quiros et al., 2019; Hin et al., 2023; Freyer et al., 2024). Bioenergetic modelling has also suggested impacts to reproduction such as increased age at first maturity and reduce calf survival (Moretti et al., 2019). In the UK, 2 Sowerby's beaked whales live stranded in 2020 which coincided with naval sonar exercise in the same area, and an acoustic trigger

	could not be ruled out as a contributor to the event (Davison & ten Doeschate, 2021).
8.1: Characterisation of pressures	PX02 Threats and pressures from outside the Member State. Northern bottlenose whale are still hunted without quota in Greenland and the Faroe Islands. In Greenland, an average of around 9 animals are hunted annually, ranging from 0 in 2018 to 20 in 2008 (https://nammco.no/marine-mammal-catch-database/). Numbers taken in the Faroe Islands are smaller with an annual average of ~3 animals and a peak of 11 animals in 2020. Several years have no reported catches for northern bottlenose whale in the Faroe Islands (https://nammco.no/marine-mammal-catch-database/).
8.1: Characterisation of pressures	PK02 Mixed source marine water pollution (marine and coastal). The general impact of contaminants on cetaceans is well documented, including impacts on the immune system and reproduction (Jepson et al, 2016) and while evidence from the UK on the impacts of pollution is limited, it has been raised as a concern for beaked whale population in expert groups (e.g., ASCOBANS, Dolman et al., 2021) and pressure reviews (Freyer et al., 2024). Impacts will depend on concentration, exposure and interaction with other pollutants and is likely dependent on the age, sex, reproductive state and nutritional condition of the animals in addition to the intake via the food web.
8.1: Characterisation of pressures	PE02 Shipping lanes and ferry lanes transport operations. Evidence from around the UK on the impacts of shipping lanes and transport is limited but is widely considered a pressure for these species, primarily the risk of ship strikes but vessel noise may also cause behavioural responses or mask communication (Dolman et al., 2021; Freyer et al., 2024). Further, as marine traffic continues to increase, the risk and impacts of this pressure is also likely to increase. Vessel strikes have been reported in at least nine species of beaked whales worldwide (including Cuvier's, Gervais', Sowerby's and northern bottlenose whale; Freyer et al., 2024; Schoeman et al., 2020) and physical trauma from a vessel propeller has been recorded on a live northern

	bottlenose whale (Freyer et al., 2024). Due to the offshore distribution of these species and more limited dedicated observers on ships in offshore areas, the impact of vessel strikes is likely underreported.
8.1: Characterisation of pressures	PC07 Geotechnical surveying. JNCC advice on geophysical surveying considers the risk of activities to all marine mammals in UK waters (Stone, 2015; JNCC, 2017, 2010b, 2010c) and strong avoidance reactions and behavioural changes have been well documented for other odontocetes (Stone, 2015; Stone et al., 2017; Fernandez-Betelu et al., 2021; Thomsen et al., 2023). In the Clarion-Clipperton Zone (Pacific Ocean), concerns have been highlighted around the impact of noise from deep seabed mining which overlaps in frequency and therefore, potential risk to communication and behaviours (Thompson et al., 2023). There is also the potential for temporary or permanent threshold shifts in response to some activities (Robinson et al., 2022). This pressure is likely to be regionally significant (North Sea and Celtic and Irish Seas) during operations. Close proximity to noise created by geotechnical activity also has potential to cause injury, although evidence for the impact and level of risk is limited. This is also mitigated through guidance on operations such as soft start and on board marine mammal observers.
9.5: List of main conservation measures	MG05 Reduce bycatch and incidental killing of non-target species. The UK is implementing the EU Technical Conservation Measures Regulation transposed into UK regulations which lays down measures concerning incidental catches of vulnerable species in fisheries, and more generally the bycatch obligations within the Habitats Regulations. Since 2004, a dedicated bycatch monitoring programme has been in place, with both dedicated and non-dedicated onboard observers collecting data on bycatch numbers. These data inform implementation and potential effectiveness of measures such as pingers. There is a requirement for all fishing vessels over 12m using gill nets or entanglement nets to use pingers under the criteria laid out in the regulation. Inshore Vessel Monitoring System

	(iVMS) devices are being implemented for under-12 metre fishing vessels, allowing data on latitude, longitude, course and speed to be recorded and help improve the management and sustainability of the marine environment. Legislation to make iVMS mandatory on under-12 metre vessels is expected to come into effect in 2024 in England. In Scotland, consultation on the introduction mandatory electronic tracking for under-12 metre vessels was carried out in late 2023. Legislation requiring iVMS for under-12 metre vessels operating in Welsh waters has been in place since 2022. Since February 2022 it has been mandatory for under-10 metre fishing vessels in English and Welsh waters to create and submit a catch record for every fishing trip through the Catch Recording Application (Catch App or Record your Catch). Data is collected on vessel, trip, gear, area fished and catch and can be used to inform on fishing activity by gear type and species. Furthermore, the UK Marine Wildlife Bycatch Mitigation Initiative (published August 2022) aims to improve our understanding of bycatch and entanglement of sensitive marine species through monitoring and scientific research, identify 'hotspot" or high-risk areas/gear types/fisheries in which to focus monitoring and mitigation, and develop and implement effective measures to minimise bycatch/entanglement. Currently work is progressing towards development of a bycatch risk framework across all PET species to apply all available evidence and support targeted monitoring.
9.5: List of main conservation measures	MH01 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	MC02 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; 2017; 2023; 2025; JNCC, Natural England & Cefas, 2025). 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	MC03 Adapt/manage renewable energy installation, facilities and operation (excl. hydropower and abstraction activities). 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; 2017; 2023; 2025; JNCC, Natural England & Cefas, 2025). 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).