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

Supporting documentation for the
conservation status assessment for the habitat:

H8330 - Submerged or partially submerged sea caves

SCOTLAND

IMPORTANT NOTE - PLEASE READ

- The information in this document is a country-level contribution to the UK Report on the conservation status of this habitat, submitted to the European Commission as part of the 2019 UK Reporting under Article 17 of the EU Habitats Directive.

- The 2019 Article 17 UK Approach document provides details on how this supporting information was used to produce the UK Report.

- The UK Report on the conservation status of this habitat is provided in a separate document.

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

- Explanatory notes (where provided) by the country are included at the end. These provide an audit trail of relevant supporting information.

- 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 only relevant at UK-level (sections 10 Future prospects and 11 Conclusions).

- For technical reasons, the country-level future trends for Range, Area covered by habitat and Structure and functions are only available in a separate spreadsheet that contains all the country-level supporting information.

- The country-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.

Report on the main results of the surveillance under Article 17 for Annex I habitat types (Annex D)

NATIONAL LEVEL	
1. General information	
1.1 Member State	**UK (Scotland information only)**
1.2 Habitat code	**8330 - Submerged or partially submerged sea caves**
2. Maps	
2.1 Year or period	
2.3 Distribution map	Yes
2.3 Distribution map Method used	
2.4 Additional maps	No

BIOGEOGRAPHICAL LEVEL	
3. Biogeographical and marine regions	
3.1 Biogeographical or marine region where the habitat occurs	**Marine Atlantic (MATL)**
3.2 Sources of information	Sugden, H. & Mieszkowska, N. (2014). Berwickshire and North Northumberland Coast (SAC) 2014 Intertidal Sea Cave Survey. The Marine Biological Association on behalf of Natural England and Scottish Natural Heritage.
	Harries, D. B., Moore, C. G., Porter, J. S., Sanderson, W. G., Ware, F. J. and Kamphausen, L. (2018). The establishment of site condition monitoring of the sea caves of the St Kilda and North Rona Special Areas of Conservation with supplementary data from Loch Eriboll. Scottish Natural Heritage Commissioned Report No. 1044 (Commissioned Report No.1044).
	Harries, D.B., Moore, C.G., Cook, R.L., Kamphausen, L., Porter, J.S., Lyndon, A.R. & Pye, S.E. (2017). 2016 site condition monitoring of the rocky reefs and sea caves of Mousa SAC and survey of sedimentary habitats of the Mousa to Boddam MPA. Scottish Natural Heritage Commissioned Report - In draft
	2003 - SCM surveys of marine rocky environments in Papa Stour cSAC - SCM - Dan Harries / ERT
	Berwickshire and North Northumberland Coast European Marine Site - http://www.xbordercurrents.co.uk/resources/management-documents-2/
	St Kilda Management Plan - http://www.kilda.org.uk/frame20.htm

4. Range		
4.1 Surface area (in km²)	17100	
4.2 Short-term trend Period		
4.3 Short-term trend Direction		
4.4 Short-term trend Magnitude	a) Minimum	b) Maximum
4.5 Short-term trend Method used		
4.6 Long-term trend Period		
4.7 Long-term trend Direction		
4.8 Long-term trend Magnitude	a) Minimum	b) Maximum
4.9 Long-term trend Method used		
4.10 Favourable reference range	a) Area (km²)	
	b) Operator	
	c) Unknown	No
	d) Method	

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4.11 Change and reason for change in surface area of range	No change
	The change is mainly due to:
4.12 Additional information	

5. Area covered by habitat

5.1 Year or period			
5.2 Surface area (in km²)	a) Minimum	b) Maximum	c) Best single value
5.3 Type of estimate			
5.4 Surface area Method used			
5.5 Short-term trend Period			
5.6 Short-term trend Direction			
5.7 Short-term trend Magnitude	a) Minimum	b) Maximum	c) Confidence interval
5.8 Short-term trend Method used			
5.9 Long-term trend Period			
5.10 Long-term trend Direction			
5.11 Long-term trend Magnitude	a) Minimum	b) Maximum	c) Confidence interval
5.12 Long-term trend Method used			
5.13 Favourable reference area	a) Area (km²)		
	b) Operator		
	c) Unknown	No	
	d) Method		
5.14 Change and reason for change in surface area of range	No change		
	The change is mainly due to:		
5.15 Additional information			

6. Structure and functions

6.1 Condition of habitat	a) Area in good condition (km²)	Minimum	Maximum
	b) Area in not-good condition (km²)	Minimum	Maximum
	c) Area where condition is not known (km²)	Minimum	Maximum
6.2 Condition of habitat Method used			
6.3 Short-term trend of habitat area in good condition Period	2003-2018		
6.4 Short-term trend of habitat area in good condition Direction	Stable (0)		
6.5 Short-term trend of habitat area in good condition Method used	Based mainly on extrapolation from a limited amount of data		
6.6 Typical species	Has the list of typical species changed in comparison to the previous reporting period?	No	
6.7 Typical species Method used			
6.8 Additional information			

Report on the main results of the surveillance under Article 17 for Annex I habitat types (Annex D)

7. Main pressures and threats

7.1 Characterisation of pressures/threats

Threat	Ranking
Other invasive alien species (other then species of Union concern) (I02)	M
Temperature changes (e.g. rise of temperature & extremes) due to climate change (N01)	M
Sea-level and wave exposure changes due to climate change (N04)	M
Change of habitat location, size, and / or quality due to climate change (N05)	M
Change of species distribution (natural newcomers) due to climate change (N08)	M

7.2 Sources of information
7.3 Additional information

8. Conservation measures

8.1 Status of measures	a) Are measures needed?	Yes
	b) Indicate the status of measures	Measures identified and taken

8.2 Main purpose of the measures taken	Maintain the current range, population and/or habitat for the species
8.3 Location of the measures taken	Only inside Natura 2000
8.4 Response to the measures	Short-term results (within the current reporting period, 2013-2018)

8.5 List of main conservation measures

Reduce/eliminate marine contamination with litter (CF08)

8.6 Additional information

9. Future prospects

9.1 Future prospects of parameters	a) Range
	b) Area
	c) Structure and functions

9.2 Additional information

10. Conclusions

10.1. Range
10.2. Area

10.3. Specific structure and functions (incl. typical species)
10.4. Future prospects
10.5 Overall assessment of Conservation Status

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10.6 Overall trend in Conservation Status	
10.7 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:
10.8 Additional information	

11. Natura 2000 (pSCIs, SCIs, SACs) coverage for Annex I habitat types

11.1 Surface area of the habitat type inside the pSCIs, SCIs and SACs network (in km² in biogeographical/ marine region)	a) Minimum b) Maximum c) Best single value
11.2 Type of estimate	
11.3 Surface area of the habitat type inside the network Method used	
11.4 Short-term trend of habitat area in good condition within the network Direction	Stable (0)
11.5 Short-term trend of habitat area in good condition within network Method used	Based mainly on expert opinion with very limited data
11.6 Additional information	

12. Complementary information

12.1 Justification of % thresholds for trends	
12.2 Other relevant information	

Distribution Map

Habitat distribution

UK & Ireland coastline
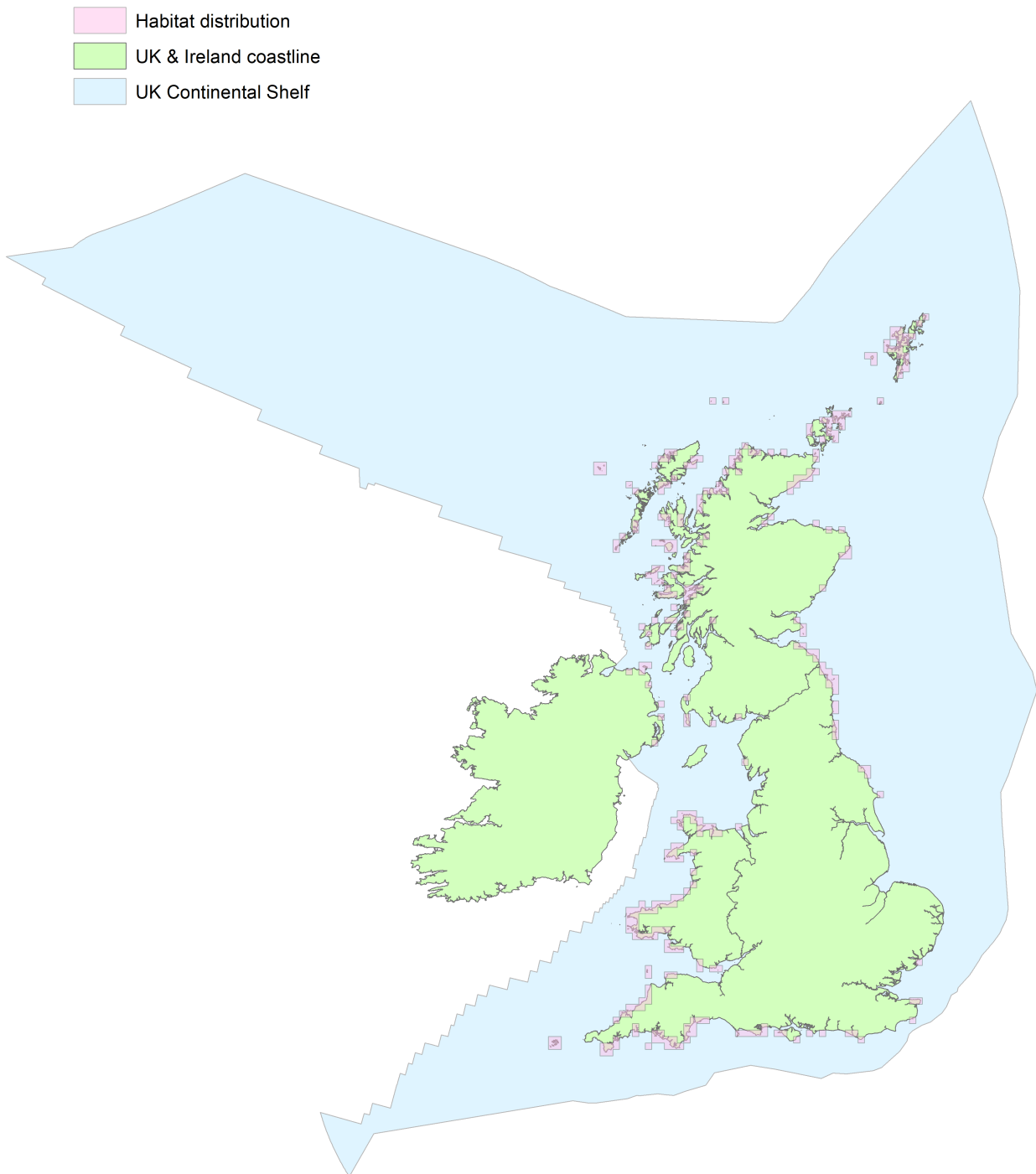
UK Continental Shelf

Figure 1: UK distribution map for H8330 - Submerged or partially submerged sea caves.

The 10km grid square distribution map is based on available habitat records which are considered to be representative of the distribution within the current reporting period. For further details see the 2019 Article17 UK Approach document.
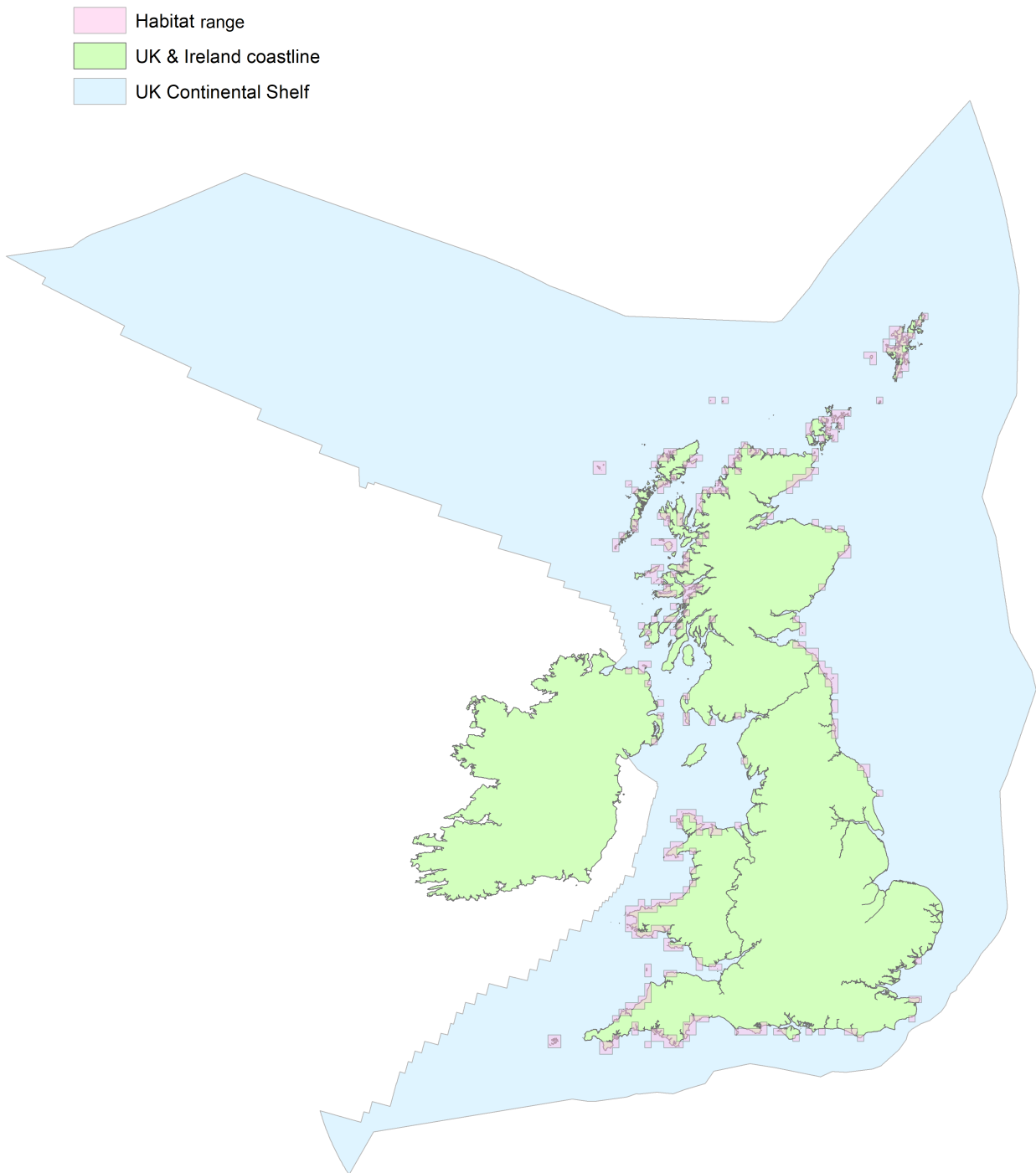
Range Map

Figure 2: UK range map for H8330 - Submerged or partially submerged sea caves.

Sea caves are physiographic features and so their range is determined primarily by geomorphological and hydrographic processes occurring over long time-scales and is not related to biological communities or processes supported by communities. Therefore, the range was considered equivalent to the distribution and was calculated from the distribution map, but additionally included areas that had the potential for the habitat to occur based on an understanding of seabed geology.

Explanatory Notes

Habitat code: 8330 Region code: MATL

Field label	Note
4.12 Additional information	Work is underway to gather information on the range and distribution of H8330 sea caves around the Scottish coast as there is minimal information available beyond mapped interpretations of rocky, coastal biotopes. Approaches include community dive and kayak groups completing and submitting information to SNH about sea cave locations and dimensions when on recreational trips.
6.1 Condition of habitat	Do not have an area figure for sea caves therefore we have included text in the additional information field 6.8.
6.5 Short term trend of habitat area in good condition; Method used	Evidence from surveys for four out of the five SACs (Berwickshire & North Northumberland, Mousa, North Rona, Papa Stour, St Kilda) that have been used to assess the habitat area in good condition show that the habitat condition between 2007-2018 has been stable. This includes recent survey work in St Kilda by SNH which is awaiting publication (as of July 2018). The remaining site (Papa Stour) was last assessed in 2003 but there is no reason to consider this area less stable than others with the same sea cave feature. A longer period has therefore been considered and concluded no change in condition for any Annex I sea cave SACs in Scotland.
6.8 Additional information	The submerged sea caves protected in SACs in Scotland (Berwickshire & North Northumberland, Mousa, North Rona, Papa Stour, St Kilda) are all in good condition. Evidence from surveys for four out of the five SACs (Berwickshire & North Northumberland, Mousa, North Rona, Papa Stour, St Kilda) that have been used to assess the habitat area in favourable condition and show that the habitat condition between 2007-2018 has been stable. We do not monitor submerged or partially submerged sea caves outside of SACs and therefore have no evidence of their condition elsewhere. However, given the limited number of pressures/threats this feature faces in Scotland we have no reason to presume that they would be in any worse condition than the SACs, especially where they are located in the same sea regions as the SACs. Number of caves have been recorded during the four surveys as follows: St Kilda - 85 potential cave sites (55 high certainty of cave presence); North Rona - 27 potential cave sites based on a combination of historical records and direct observation (6 confirmed as reasonably substantial caves during survey in 2015; Mousa - 20 sea caves were confirmed in 2016; Berwickshire and North Northumberland Coast - 16 sea caves confirmed in 2014.
7.1 Characterisation of pressures/ threats	There are very few pressures/threats listed because there have been limited pressures on sea caves that have acted during the last reporting period and similarly, a limited number of threats that could affect sea caves in the next 12 years. This is mainly due to their remoteness and their physical nature which means that most activities don't affect them e.g. fishing, developments etc are not near or within examples of this feature.
8.5 List of main conservation measures	There are very few conservation measures listed because their remoteness and their physical nature means that they are largely shielded from a lot of pressures and threats, of which we believe there to be few. Addiitionally because of where they are and their nature undertaking active management e.g. removal of litter, early removal of invasive non-natives, and climate change adaption would be very difficult and pose health and safety issues.

8.6 Additional information	For SACs, licensable activities (e.g. coastal developments, military activities, discharges) are subject to Habitiats Regulations Appraisal (HRA) in Scotland which considers whether a particular plan or project (activities) will cause a likely significant effect on the habitat and result in an adverse effect on site integrity. If the tests of the HRA are not met then the development normally will not be allowed to continue unless suitable mitigation can be undertaken. We therefore expect response to conservation measures to act within the short term as normally pressures and threats that could affect sea caves are dealt with through the HRA process (i.e. short term).
9.1 Future prospects of parameters	Whilst work is underway to gather more information on the range and distribution of H8330 sea caves around the Scottish coast, we don't believe that this will modify the range currently presented for seacaves/ Also any threats in the future are unlikely to affect the range of the feature and therefore this has been assessed as stable. For future prospects for area, we currently do not have mapped areas of sea caves within Scottish territorial waters and therefore it is not possible to provide an indication of how this might change in the future, although it is likely to be limited. For structure and functions this has also been listed as unknown. Evidence from surveys for four out of the five SACs (Berwickshire & North Northumberland, Mousa, North Rona, Papa Stour, St Kilda) that have been used to assess the habitat area in good condition show that the habitat condition between 2007-2018 has been stable. The remaining site (Papa Stour) was last assessed in 2003 but there is no reason to consider this area less stable than others with the same sea cave feature. Threats are unlikely to affect the physical structure, but could affect associated biological communities. The degree to which sea cave biota could be affected, and what affects could happen resulting from threats such as climate change are not sufficiently understood to judge stability of sea caves in the future, and therefore unknown has been chosen.
11.1 Surface area of the habitat type inside the pSCIs, SCIs and SACs network	We do not have a surface area of the seacaves protected within SACs because they have not been mapped in this way. However, there is some information available on the number of seacaves in the SACs. The number of caves have been recorded during the four surveys as follows: St Kilda - 85 potential cave sites (55 high certainty of cave presence); North Rona - 27 potential cave sites based on a combination of historical records and direct observation (6 confirmed as reasonably substantial caves during survey in 2015; Mousa - 20 sea caves were confirmed in 2016; Berwickshire and North Northumberland Coast - 16 sea caves confirmed in 2014
11.5 Short term trend of habitat area in good condition within the network; Method used	See above - 6.5.