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

NORTHERN IRELAND

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 (Northern Ireland information only)**
1.2 Habitat code	**8330 - Submerged or partially submerged sea caves**

2. Maps

2.1 Year or period	2013-2018
2.3 Distribution map	Yes
2.3 Distribution map Method used	Based mainly on expert opinion with very limited data
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	Obli http://databases.eucc-d.de/plugins/projectsdb/project.php?show=337 JNCC, 2013. Submerged and partially submerged sea caves H8830 in NORTHERN IRELAND, 3rd Reporting Cycle. http://jncc.defra.gov.uk/pdf/Article17Consult_20131010/H8330_NORTHERNIRELAND.pdf DAERA, 2017. North Coast WFD classification update pamphle., Internal document. Marine Strategy Framework Directive- Marine Litter at UK level- https://www.gov.uk/government/publications/marine-strategy-part-three-uk-programme-of-measures DAERA, 2014. Marine Litter Strategy- https://www.daera-ni.gov.uk/articles/marine-litter DAERA, 2018. Draft legislation at NI level banning microbeads https://www.daera-ni.gov.uk/publications/microplastics DAERA (formerly EHS),2004. Oblique imagery survey of the NI coastline to identify coastal assetts as part of Emergency Reponse to Pollution from Shipping. http://databases.eucc-d.de/plugins/projectsdb/project.php?show=337 D AERA, 2017. River Basin Management Plan WFD 2nd Cycle Classification Summary-North Coast. Internal Document DAERA, 2017. River Basin Management Plan WFD 2nd Cycle Classification Summary-Rathlin Island.Internal Document

4. Range

4.1 Surface area (in km²)	8	
4.2 Short-term trend Period		
4.3 Short-term trend Direction	Stable (0)	
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)	

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	b) Operator	
	c) Unknown	No
	d) Method	
4.11 Change and reason for change in surface area of range	Improved knowledge/more accurate data	
	The change is mainly due to:	Improved knowledge/more accurate data
4.12 Additional information		

5. Area covered by habitat

5.1 Year or period	2013-2018		
5.2 Surface area (in km²)	a) Minimum	b) Maximum	c) Best single value
5.3 Type of estimate	Best estimate		
5.4 Surface area Method used	Based mainly on expert opinion with very limited data		
5.5 Short-term trend Period	2013-2018		
5.6 Short-term trend Direction	Stable (0)		
5.7 Short-term trend Magnitude	a) Minimum	b) Maximum	c) Confidence interval
5.8 Short-term trend Method used	Based mainly on expert opinion with very limited data		
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	Improved knowledge/more accurate data		
	The change is mainly due to:	Improved knowledge/more accurate data	
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	2013-2018		
6.4 Short-term trend of habitat area in good condition Direction	Unknown (x)		

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6.5 Short-term trend of habitat area in good condition Method used	Insufficient or no data available
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	

7. Main pressures and threats

7.1 Characterisation of pressures/threats

Pressure	Ranking
Modification of coastline, estuary and coastal conditions for development, use and protection of residential, commercial, industrial and recreational infrastructure and areas (including sea defences or coastal protection works and infrastructures) (F08)	M
Residential or recreational activities and structures generating marine macro- and micro- particulate pollution (e.g. plastic bags, Styrofoam) (F22)	M
Industrial or commercial activities and structures generating marine macro- and micro- particulate pollution (e.g. plastic bags, Styrofoam) (F23)	M

Threat	Ranking
Agricultural activities generating marine pollution (A28)	M
Modification of coastline, estuary and coastal conditions for development, use and protection of residential, commercial, industrial and recreational infrastructure and areas (including sea defences or coastal protection works and infrastructures) (F08)	M
Residential or recreational activities and structures generating marine macro- and micro- particulate pollution (e.g. plastic bags, Styrofoam) (F22)	M
Industrial or commercial activities and structures generating marine macro- and micro- particulate pollution (e.g. plastic bags, Styrofoam) (F23)	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	Both inside and outside Natura 2000	
8.4 Response to the measures	Long-term results (after 2030)	
8.5 List of main conservation measures		

Reduce/eliminate marine pollution from agricultural activities (CA13)	
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	
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	Best estimate
11.3 Surface area of the habitat type inside the network Method used	Based mainly on expert opinion with very limited data
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	

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12. Complementary information

12.1 Justification of % thresholds for trends

12.2 Other relevant information

Distribution Map

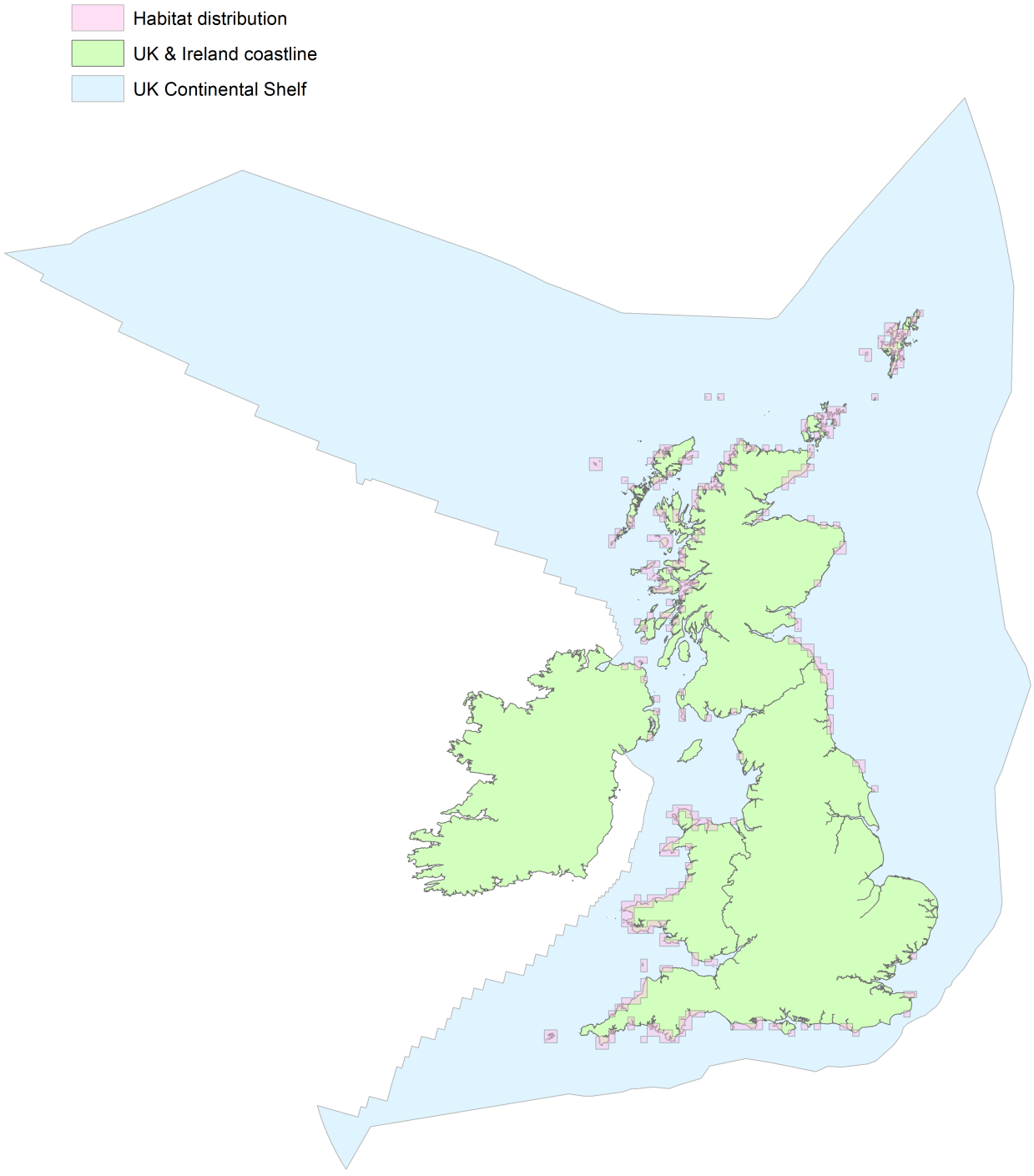

Figure 1: UK distribution map for H8330 - Submerged or partially submerged sea caves.

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

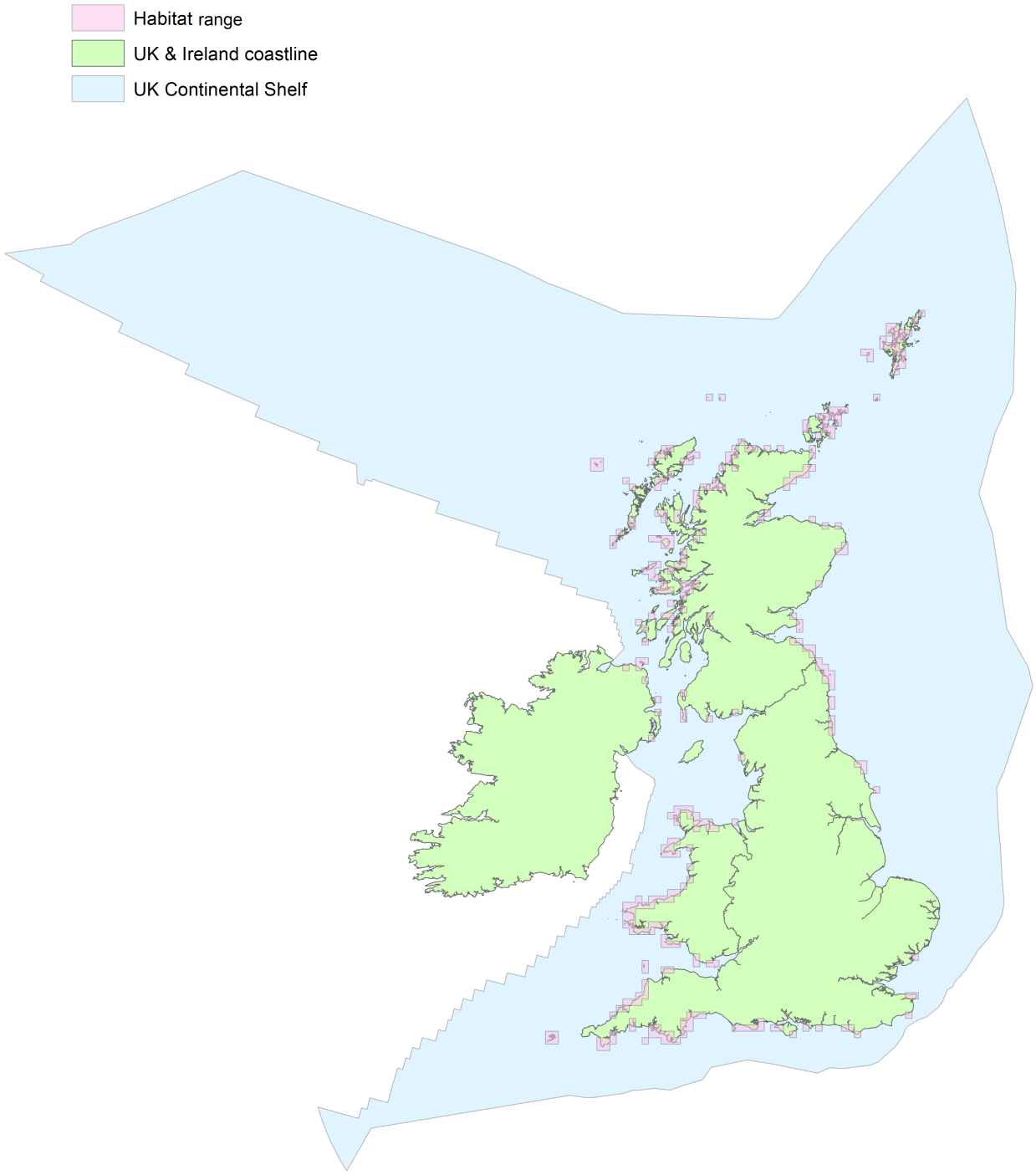

Figure 2: UK range map for H8330 - Submerged or partially submerged sea caves.

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
4.11 Change and reason for change in surface area of range	A review of the points identified from the 2013 Art 17 collected from a series of high resolution oblique images of the coastline along with Orthophotography and boat surveys showed that a number of areas identified as Sea Caves were not correct.
5.2 Surface area	DAERA don't calculate the area of the caves, so the value here refers to the number of caves
5.3 Type of estimate	Partially submerged Caves were identified from a series of high resolution oblique images of the coastline along with Orthophotography and boat surveys. Submerged caves were identified from dive surveys in which the biotopes associated with submerged caves were reported on Marine Recorder.
5.6 Short term trend; Direction	Both Range and Area are reported as stable as they are unlikely to have changed given the geological longevity of caves. The structure and function or condition of caves is largely unknown as no specific surveys have been carried out on this habitat this reporting cycle but expert opinion suggests that they are likely to remain unchanged meaning that the direction of the short term trend is also 'Stable'
5.8 Short term trend; Method used	Based mainly on expert opinion with very limited data was chosen due to the reasons explained in 5.3 & 5.6 above.
5.14 Change and reason for change in surface area	A review of the points identified from the 2013 Art 17 using high resolution oblique images, ortho-imagery of the coastline along with subtidal survey data identifying submerged caves (on Marine Recorder) showed that a number of points identified as Sea Caves were not correct.
6.1 Condition of habitat	Expert opinion suggest that this habitat is in Good Condition as they have little or no impact since the last reporting cycle but without any survey data it was thought best to put the 43 identified caves in as 'Unknown'.
6.2 Condition of habitat; Method used	Insufficient or no data available was only option without survey data to identify condition of caves
6.4 Short term trend of habitat area in good condition; Direction	Unknown as insufficient data available to make assessment although they are unlikely to have changed since the last submission.
7.1 Characterisation of pressures/ threats	F08- Modification of Coastline for UWWT infrastructure, repair of sea walls, defences, coastal roads & railways
7.1 Characterisation of pressures/ threats	F22 & F23: Marine Litter from Industrial, Commercial, Residential and Recreational Activities. Marine litter is monitored and reported through a number of programmes, as part of the Bathing Water programme, additional information gathered on Scientific Research Surveys, Departmental sponsered shoreline and beach cleans. A recent litter clean of sea caves by Kayakers along the North Coast confirmed that marine litter is present in caves which is washed in and collects as the tide retreats.
7.1 Characterisation of pressures/ threats	A28 Agricultural activities generating marine pollution- On reviewing the biological and chemical parameters assessed as part of WFD monitoring, the data showed that while there was a little oscillation between parameters the overall potential ecological status was the same annually. The DIN and Chla parameters monitored in the WFD water bodies where the caves are located, consistently met the required standards, indicating no risk of eutrophication. This would therefore suggest that the management measures put in place are effective with regard to this pressure but still pose a medium threat risk.

8.1 Status of measures	Put in 'Yes' as Conservation measures needed and implemented here through managment measures in place to deal with agricultural pollution through River Basin District Management Plans. In addition through the Marine Litter Strategy there are managment measures in place to help reduce and remove marine litter from caves too.
8.5 List of main conservation measures	CA13: Reduce/eliminate marine pollution from agricultural activities- The Annex I caves fall within Nitrate Sensitive area which have targeted management measures to reduce the impact from agricultural waste and therefore reduce nutrient enrichment in these areas under the Water Framework Directive.
8.5 List of main conservation measures	CF08: Reduce/eliminate marine contamination with litter- At NI level the Department (DAERA) is are addressing the problem of marine litter through the NI Marine litter Strategy. The Strategy's goals are to tackle marine litter through measures to reduce the amount of litter entering the sea and removing some of the litter pollution already there. Measures to reduce litter entering the sea are grouped around the following: 1. Awareness raising - these measures include campaigns such as Live Here Love Here or Fishing for Litter part sponsored by DAERA; 2. Enforcement of Statutory Deterrents - eg enforcing the Litter (Northern Ireland) Order 1994 (as amended) which makes it an offence to drop litter and waste legislation; 3. Data gathering and reports - eg through the Marine Litter Survey delivered by KNIB sponsored by DAERA, Coastwatch - all island survey and report led by Ulster Wildlife in NI, and the Marine Conservation - Great British Beachclean in September. These also feed into awareness raising and removing litter. 4. Coastal infrastructure - having appropriate sewage treatment works and litter bins eg compactor bins. Measures to remove litter already in the sea are primarily beach cleans. These are facilitated by local charities such as KNIB, Ulster Wildlife, volunteer groups eg Love Your Lough, divers and kayakers.In addition DAERA intends bringing forward the draft Environmental Protection (Microbeads) Regulations 2018 to ban the manufacture and sale of cosmetic products containing plastic microbeads.
9.1 Future prospects of parameters	Both Range and Area are reported as stable as they are unlikely to have changed given the geological longevity of caves however the structure and function or condition is unknown as no cave surveys have been carried out this reporting cycle but expert opinion suggests that they are likely to be stable meaning that the direction of the Future Prospect of parameters is also 'Stable'
11.1 Surface area of the habitat type inside the pSCIs, SCIs and SACs network	34 caves fall within this area
11.4 Short term trend of habitat area in good condition within the network; Direction	Put in 'Stable' as while no caves havent been surveyed, there have been no known pressures in either Rathlin or Skerries and Causeway SACs which would impact the caves.