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 species:

S1377 - Maerl (*Phymatolithon calcareum*)

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 species, 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 species 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; (iii) the field was not relevant to this species (section 12 Natura 2000 coverage for Annex II species) and/or (iv) the field was only relevant at UK-level (sections 9 Future prospects and 10 Conclusions).
- For technical reasons, the country-level future trends for Range, Population and Habitat for the species 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 11 for Annex II, IV and V species (Annex B)

NATIONAL LEVEL

1. General information

1.1 Member State	**UK (Northern Ireland information only)**
1.2 Species code	**1377**
1.3 Species scientific name	**Phymatolithon calcareum**
1.4 Alternative species scientific name	
1.5 Common name (in national language)	Maerl

2. Maps

2.1 Sensitive species	No
2.2 Year or period	
2.3 Distribution map	Yes
2.4 Distribution map Method used	
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 number of map 1x1 km grid cells (grids1x1)

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

Wilson, S; Blake, C; Berges, J.A; Maggs, C.A., 2004. Environmental tolerances of free-living coralline algae (maerl): implications for European marine conservation. Biological Conservation 120 (283-293).
Hall-Spencer, J.M & Moore, P.G (2000). Scallop dredging has profound long-term impacts on maerl habitats. ICES Journal of Marine Science 57 (1407-1415).
http://www.ni-environment.gov.uk/maerl_beds_web_version_april_03-2.pdf
http://www.ukmarinesac.org.uk/communities/maerl/m1_2.htm
Wilson, S., Johnson, M.P., Kelly, J., Clarkin, P.E. & Maggs, C.A (2007) Assessment of extent and abundance of maerl beds and their associated biodiversity along the East Antrim coast. Report prepared by the Natural Heritage Research Partnership (NHRP) between Quercus, Queen's University Belfast and the Northern Ireland Environment Agency (NIEA) for the Research and Development Series No. 13/05.
DAERA, 2018. Red Bay Special Area of Conservation (SAC) Condition Assessment 2018. Internal Document (hyperlink to follow).

5. Range

5.1 Surface area (km²) 1200

5.2 Short-term trend Period

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

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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) b) Operator c) Unknown d) Method	
5.11 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
5.12 Additional information		

6. Population

6.1 Year or period	2017	
6.2 Population size (in reporting unit)	a) Unit b) Minimum c) Maximum d) Best single value	number of map 1x1 km grid cells (grids1x1) 24 24 24
6.3 Type of estimate	Best estimate	
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 extrapolation from a limited amount of data	
6.7 Short-term trend Period	2009-2018	
6.8 Short-term trend Direction	Uncertain (u)	
6.9 Short-term trend Magnitude	a) Minimum b) Maximum c) Confidence interval	
6.10 Short-term trend Method used	Based mainly on extrapolation from a limited amount of data	
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		

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6.15 Favourable reference population (using the unit in 6.2 or 6.4)	a) Population size b) Operator c) Unknown 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 (to maintain the species at FCS)?	Yes
	b) Is there a sufficiently large area of occupied AND unoccupied habitat of suitable quality (to maintain the species at FCS)?	
7.2 Sufficiency of area and quality of occupied habitat Method used	Based mainly on expert opinion with very limited data	
7.3 Short-term trend Period	2007-2018	
7.4 Short-term trend Direction	Stable (0)	
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		
7.8 Long-term trend Method used		
7.9 Additional information		

8. Main pressures and threats

8.1 Characterisation of pressures/threats

Pressure	Ranking
Agricultural activities generating marine pollution (A28)	M
Marine fish and shellfish harvesting (professional, recreational) activities causing physical loss and disturbance of seafloor habitats (G03)	M

Threat	Ranking
Agricultural activities generating marine pollution (A28)	M
Extraction of minerals (e.g. rock, metal ores, gravel, sand, shell) (C01)	M
Dumping/depositing of dredged materials from marine extraction (C07)	M
Wind, wave and tidal power, including infrastructure (D01)	M
Shipping lanes, ferry lanes and anchorage infrastructure (e.g. canalisation, dredging) (E03)	M

Marine fish and shellfish harvesting (professional, recreational) activities causing physical loss and disturbance of seafloor habitats (G03)	M
Marine aquaculture generating marine pollution (G16)	M

8.2 Sources of information

A number of the Maerl patches are located near salmon cages off the east coast. The location of the Maerl and potential impact of moving the cages and the resulting sedimentation must be taken into consideration.

8.3 Additional information

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 Natura 2000

9.4 Response to the measures

Long-term results (after 2030)

9.5 List of main conservation measures

Reduce/eliminate marine pollution from agricultural activities (CA13)
Adapt/manage extraction of non-energy resources (CC01)
Adapt/manage renewable energy installation, facilities and operation (CC03)
Manage/reduce/eliminate marine pollution from transport (CE04)
Management of professional/commercial fishing (including shellfish and seaweed harvesting) (CG01)
Other measures to reduce impacts from marine aquaculture infrastructures and operation (CG09)

9.6 Additional information

10. Future prospects

10.1 Future prospects of parameters

a) Range
b) Population
c) Habitat of the species

10.2 Additional information

11. Conclusions

11.1. Range

11.2. Population

11.3. Habitat for the species

11.4. Future prospects

11.5 Overall assessment of Conservation Status

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11.6 Overall trend in Conservation Status	
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	

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
13.3 Other relevant Information

Distribution Map

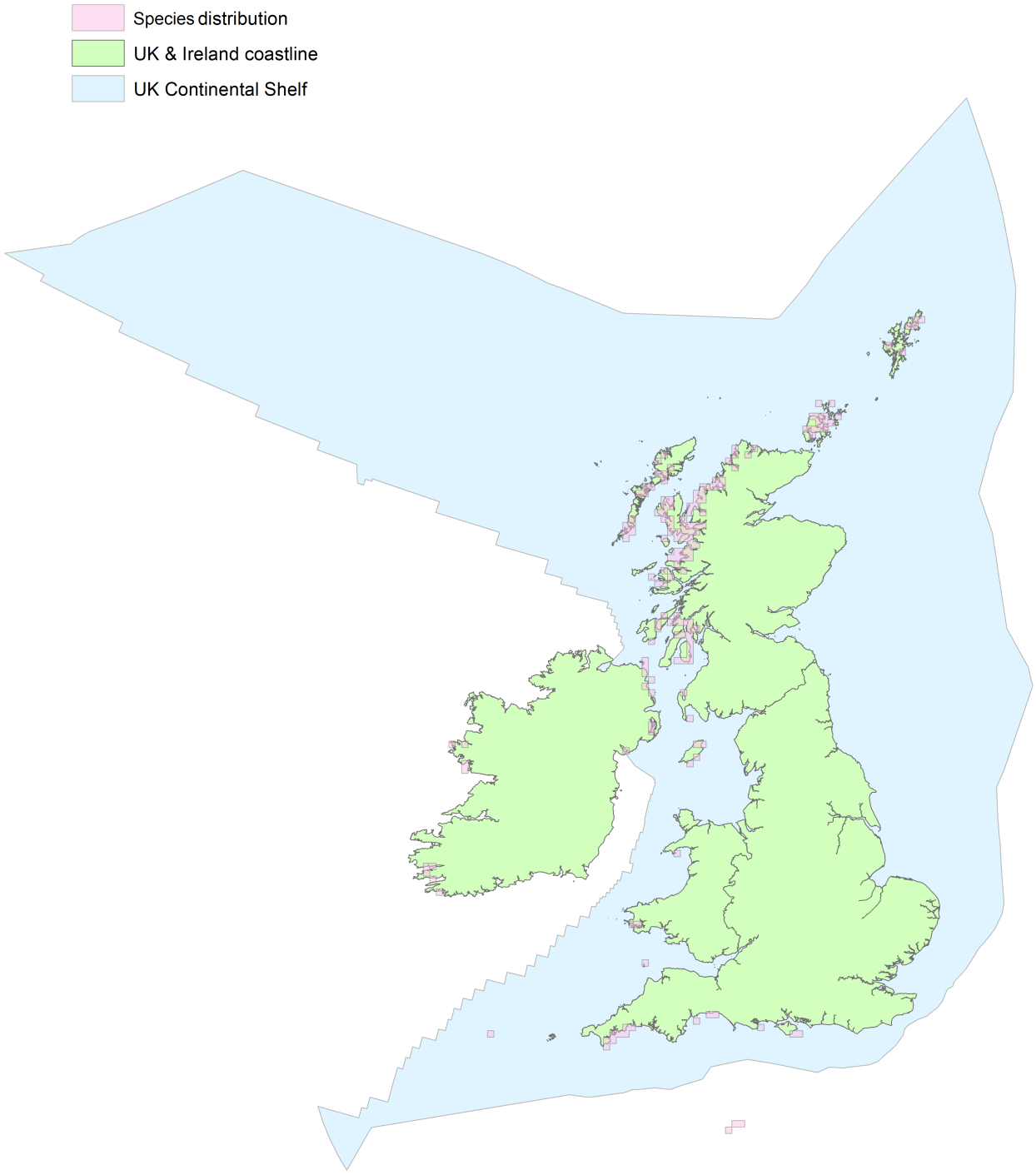

Figure 1: UK distribution map for S1377 - Maerl (*Phymatolithon calcareum*).

The 10km 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

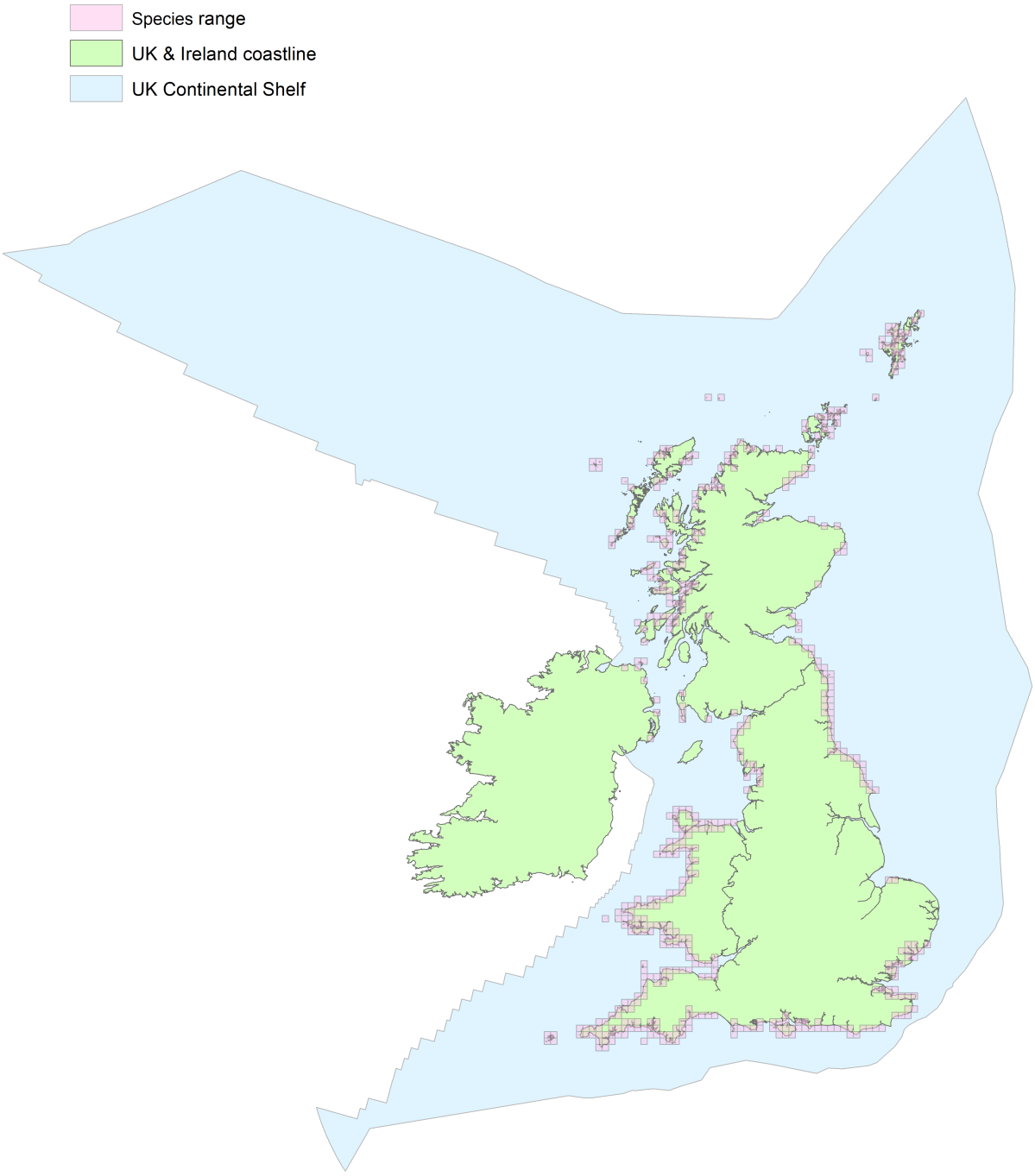

Figure 2: UK range map for S1377 - Maerl (*Phymatolithon calcareum*).

It is recognised that it is extremely difficult to distinguish maerl species without genetic testing and previous identification of UK maerl species in surveys may not be reliable. Therefore, all records of maerl species in UK waters were used to create the distribution map and range map. The number of 10x10km grid squares containing maerl records were used to calculate the range.

Explanatory Notes

Species name: Phymatolithon calcareum (1377)

Field label	Note
2.3 Distribution map	Provided by JNCC

Species name: Phymatolithon calcareum (1377) Region code: MATL

Field label	Note
5.3 Short term trend; Direction	Stable' was selected as it was thought that while there may be localised changes in range it is highly unlikely that there will be change in range at the NI waters level.
5.11 Change and reason for change in surface area of range	There is change in Range but it is related to improved data/knowledge and not genuine change.
6.2 Population size	This is based on the number of 1x1km grids where maerl was recorded that fall within NI waters. The number of grid in which Maerl was recorded has increased from 9 in 2013 to 24 in 2018. However the range values has decreased from 3200 (based on 10km2 grids) in 2013 to 1200 in 2018. Only records which were validated with Maerl biotopes or evidence in the description of Maerl beds were included this reporting cycle. On discussing this with our Maerl expert, it was her opinion that a number of the P calcareum records in Marine recorder were incorrect and were more likely to be lithothamnion corallioides which is does not form the twiglet type morphology associated with Maerl beds here in NI. The grids were provided by JNCC.
6.6 Population size; Method used	Based mainly on extrapolation from a limited amount of data-while there have been recent surveys and data collected on Maerl in NI waters it has been limited and ad hoc.
6.8 Short term trend; Direction	As the data collected on the extent and density of Maerl has been limited and not sufficient quality to extrapolate a trend direction, it was therefore classified as 'Uncertain'.
6.16 Change and reason for change in population size	The condition assessment carried out on the Maerl within Red Bay (SAC designated for Maerl) reported the Maerl to be in Favourable condition. In addition the only pressure from fishing with demersal gear which is likely to be a risk to the habitat and species is being managed by fisheries regulation which prohibits the use of mobile gear in Rathlin and Strangford. A voluntary ban in Red Bay is in place while fishing regulations to bring mandatory ban on mobile gear is being developed for this area.
7.1 Sufficiency of area and quality of occupied habitat	For the same reason as 6.16 this was reported as 'Yes'
8.1 Characterisation of pressures/ threats	A28: Agricultural activities generating marine pollution- Maerl beds in Strangford Lough are close to shore and fall within the UWWT Sensitive Area.
8.1 Characterisation of pressures/ threats	G03: Marine fish and shellfish harvesting (professional, recreational) activities causing physical loss and disturbance of seafloor habitats-Scallop dredging is known to occur over the Maerl beds (Young scallops are known to settle on Maerl). The dredges can cause long term damage of these beds.
8.1 Characterisation of pressures/ threats	G16: Marine aquaculture generating marine pollution- A number of the Maerl records are located near salmon cages off the east coast. The location of the Maerl and potential impact of moving the cages and the resulting sedimentation must be taken into consideration.
8.1 Characterisation of pressures/ threats	E03: Shipping lanes, ferry lanes and anchorage infrastructure (e.g. canalisation, dredging)- in particular the threat of damage from anchorage needs to be considered as there is a lot of recreational boating near the maerl beds in Rathlin, Red Bay and Strangford.

8.1 Characterisation of pressures/ threats	D01: Wind, wave and tidal power, including infrastructure -Red Bay is on the edge of the ORESAP SEA Tidal Resource Zone. All activities relating to the development and infrastructure must account for the sensitivity of Maerl to these activities.
8.1 Characterisation of pressures/ threats	F08: Modification of coastline, estuary and coastal conditions for development, use and protection of residential, commercial, industrial and recreational infrastructure and areas (including sea defence or coast protection works and infrastructures) -This pressure has the potential to cause changes in coastal processes which could lead to sedimentation of the Maerl beds.
8.1 Characterisation of pressures/ threats	C01: Extraction of minerals (e.g. rock, metal ores, gravel, sand, shell)- while no activities occur at the moment Maerl has been harvested by dredging in the past and as such remains a viable threat.
8.1 Characterisation of pressures/ threats	C07: Dumping/depositing of dredged materials from marine extraction-There are no dredge disposal sites near the existing Maerl beds but this species is very sensitive to smothering from sediment which can result from either from dredging or disposal of dredge material.
9.1 Status of measures	Conservation measures needed and implemented here through managment measures in place to deal with the listed pressures and threats both within and outside of SACs through River Basin District Management Plans under Water Framework Directive; Fisheries regulations under Fisheries Act (NI) 1966 and regulations made thereunder; Marine Licensing (under Marine and Coastal Access Act); Water (NI) Order 1999.
9.5 List of main conservation measures	CC01: Adapt/manage extraction of non-energy resources- Although we don't have any extraction licenced at the moment the potential for applications must be considered. Any application for extraction of substrate from the seabed will require a Marine License under the Marine and Coastal Access Act and an EIA would have to be completed to assess the impacts on the habitat& its associated species.
9.5 List of main conservation measures	CE04: Manage/reduce/eliminate marine pollution from transport- Anchorage areas can be designated in SACs to minimise the impact on the Sandbanks along with measures such as speed restrictions should they be deemed necessary by the Department. Two such anchorages have been charted to avoid damage to sensitive sandbank features such as Maerl & Seagrass beds in Rathlin SAC.
9.5 List of main conservation measures	CC03: Adapt/manage renewable energy installation, facilities and operation-Under the Marine and Coastal Access Act any development which would impact the Annex I features would be subject to EIA and a marine licence processed by DAERA Marine Licensing team.
9.5 List of main conservation measures	CG01: Management of professional/commercial fishing (including shellfish and seaweed harvesting). Scallop dredging has been reported in areas where Maerl bed occurs as young scallops are known to settle on this feature. The dredges can cause long term damage of these beds which could potentially damage future recruitment of Scallops in the area. Fisheries regulations have been put in place to protect Sandbanks a designated feature in Rathlin & Murlough SACs on which Maerl has been recorded. While in Skerries and Causeway and Red Bay voluntary bans are in place while the appropriate fisheries regulations are being drafted.
9.5 List of main conservation measures	CG09: Other measures to reduce impacts from marine aquaculture infrastructures and operation- Any movement of the licenced salmon cages requires a consent to dischange under the Water (NI) Order and the impact on the proposed relocation seabed area & would take into consideration the presence of Maerl.
9.5 List of main conservation measures	CA13: Reduce/eliminate marine pollution from agricultural activities- A number of the Maerl records 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.

10.1 Future prospects of parameters	With the management measures in place and the fisheries regulations being developed to protect this feature the future prospect of Maerl is considered to be 'Stable'.