

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

Supporting documentation for the
Third Report by the United Kingdom under
Article 17

on the implementation of the Directive
from January 2007 to December 2012
Conservation status assessment for

Species:

S1377 - Maerl (*Phymatolithon calcareum*)

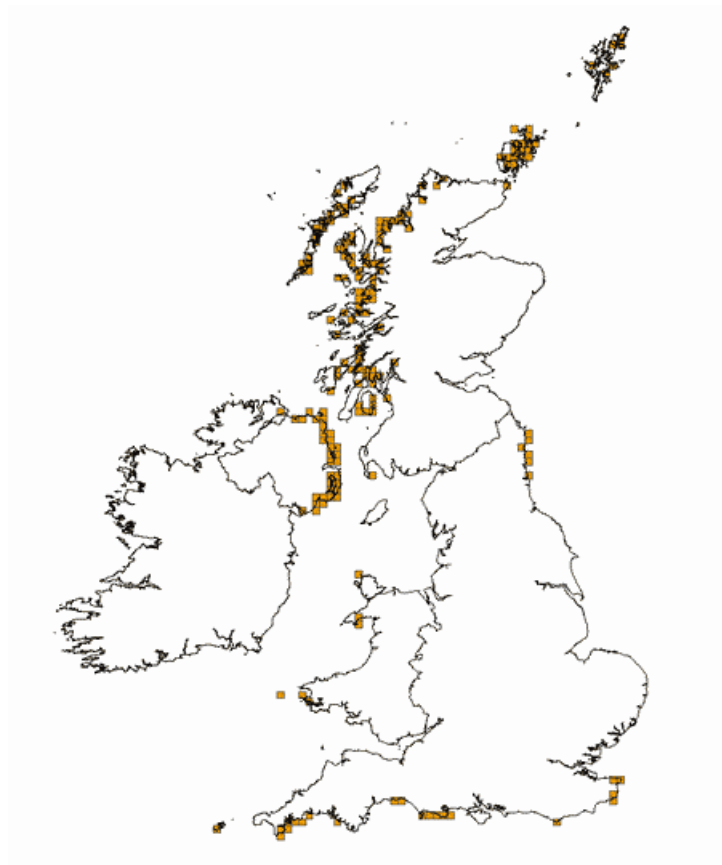
IMPORTANT NOTE – PLEASE READ

- The country-level reporting information contained in this document is a contribution to the Article 17 UK report for the habitat/species concerned.
- It has been provided by **Northern Ireland Environment Agency** and refers only to the state of the habitat/species in **Northern Ireland** - it does not constitute an assessment for the whole of the UK.
- The Article 17 UK Approach document provides details on how this information has been used and, combined with information supplied by other Statutory Nature Conservation Bodies
- The format of the document is closely aligned to that set out by the European Commission for Member State reporting – as a result, some of the fields are not applicable at a country-level and have deliberately been left blank – in addition, the content of most fields is constrained by the EC reporting categories.

Reporting format on the 'main results of the surveillance under Article 11' for Annex II, IV & V species

<i>Field name</i>	<i>Brief explanations</i>	
0.2 Species	0.2.1 Species code	S1377
	0.2.2 Species scientific name	<i>Phymatolithon calcareum</i>
	0.2.3 Alternative species scientific name Optional	
	0.2.4 Common name Optional	Maerl

1.1 Maps		
1.1.1 Distribution map		Sensitive False
	<p>The distribution records in Marine Recorder are almost certainly unreliable, however the NBN 10km grid records do closely match the currently known distribution. Maerl is sensitive to physical disturbance and changes in turbidity and it has therefore almost certainly declined in Northern Ireland since the Northern Ireland Sublittoral Survey of the 1980s. There are probably also cases where <i>Lithothamnion glaciale</i> or sub-fossil maerl may have been recorded as <i>Phymatolithon calcareum</i>. Locations where the distribution data suggest a presence but expert opinion suggests the presence is now highly unlikely include the records for the Lagan estuary and the Newry estuary. There are many locations where mixed gravels may contain a few fragments of live maerl. Many of these locations have not been re-surveyed to confirm that continued presence. Other locations are known to have maerl beds and where these are known they have in many cases had recent survey effort by NIEA to determine their extent. Maerl beds are known from around Rathlin Island (Church Bay and Arkill Bay); the East Antrim coast (Cushendun, Garron Point, Glenarm, Ballygally Head and The Maidens); and Strangford Lough (Zara Soal and Rainey Island). A small bed in Carlingford Lough is now reduced to patches of dead maerl with the occasional live nodule. The identification of maerl from Ballywalter (Morton) seems plausible but has not been verified by further surveys. All the species evidence obtained so far (S.J. Vise, 2005, The distribution of maerl beds in Northern Ireland, PhD Thesis Queen's University Belfast) suggest that these beds are either <i>Phymatolithon calcareum</i> or a mixture of sub-fossil <i>Lithothamnion glaciale</i> and live <i>Phymatolithon calcareum</i>).</p>	



1.1.2 Method used - map	Estimate based on partial data with some extrapolation and/or modelling
1.1.3 Year or period	1980-2012
1.1.4 Additional distribution map	False
1.1.5 Range map	

2.1 Biogeographical region & marine regions	MATL
2.2 Published sources	<p>"ADEY, W.H. & MCKIBBEN, D.L. 1970. Studies on maerl species <i>Phymatolithon calcareum</i> (pallas) nov. comb. and <i>Lithothamnium corallioides</i> Crouan in Ria de Vigo. <i>Bot. Mar.</i>, 13, 100-106.</p> <p>BARBERA, C. et al 2003. Conservation and management of northeast Atlantic and Mediterranean maerl beds. <i>Aquatic Conservation: Marine and Freshwater Ecosystems</i>, 13, S65-S76.</p> <p>BIOMAERL team, 2003. Conservation and management of N.E</p>

	<p>Atlantic and Mediterranean maerl beds. Aquatic Conservation: Marine and Freshwater Ecosystems, 13 (S1): 65-76.</p> <p>BIRKETT, D.A. MAGGS, C.A. & DRING, M.J. 1998. Maerl (volume V). An overview of dynamic and sensitivity characteristics for conservation management of marine SACs. Scottish Association for Marine Science (UK Marine SACs Project). 116 pp.</p> <p>BLAKE, C. & MAGGS, C. 2003. Comparative growth rates and internal banding periodicity of maerl species (Corallinales, Rhodophyta) from northern Europe. Phycologia, 42 (6), 606-612.</p> <p>BLAKE, C., REIMER, P. & MAGGS, C. 2005. Radiocarbon dating of maerl beds in the British Isles. The 10th International Conference on Accelerator Mass Spectrometry, Berkeley, CA..</p> <p>BOSENCE, D. & WILSON, J. 2003. Maerl growth, carbonate production and accumulation rates in the northeastern Atlantic. Aquatic Conservation: Marine and Freshwater Ecosystems, 13, S21- S31.</p> <p>BROWN, R.A. CURRY, R., DONAGHY, A., HUGHES, D., KITCHEN, J., MELLON, C. & NELSON, B. 1997. Biodiversity in Northern Ireland. Priorities for Wildlife Conservation: A Discussion Document. RSPB, Belfast.</p> <p>CANALS, M. & BALLESTEROS, E. 1997 . Production of carbonate particles by phytobenthic communities on the Mallorca-Menorca shelf, northwestern Mediterranean Sea. Deep-sea Res II, 44, 611-629.</p> <p>COSTELLO, M.J. TIERNEY, P. & EMBLOW, C. 1997. Observations on maerl records made during the biomar survey. Abstracts, Irish Maerl Workshop, Martin Ryan Institute / University College Galway, 30 May 1997.</p> <p>DAVIS, J. & HALL-SPENCER, J.M. 1996. Mapping of the benthic biotopes in the proposed Sound of Arisaig Special Area of Conservation. Scottish</p>
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2.3 Range					
2.3.1 Surface area Range	3200 Red Bay SAC maerl bed mapped as 3.6km ² (NIEA, 2009). Estimate for other maerl beds based on targeted NIEA dive surveys.				
2.3.2 Method used Surface area of Range	Estimate based on partial data with some extrapolation and/or modelling				
2.3.3 Short-term trend Period	2001-2012				
2.3.4 Short term trend Trend direction	decrease				
2.3.5 Short-term trend Magnitude	<table border="1" style="width: 100%;"> <tr> <td style="background-color: #e0e0e0;">a) Minimum</td> <td>1</td> </tr> <tr> <td style="background-color: #e0e0e0;">b) Maximum</td> <td>5</td> </tr> </table>	a) Minimum	1	b) Maximum	5
a) Minimum	1				
b) Maximum	5				
2.3.6 Long-term trend Period	1989-2012				
2.3.7 Long-term trend Trend direction	decrease				
2.3.8 Long-term trend Magnitude	<table border="1" style="width: 100%;"> <tr> <td style="background-color: #e0e0e0;">a) Minimum</td> <td>1</td> </tr> </table>	a) Minimum	1		
a) Minimum	1				
Optional					

	b) Maximum	10
2.3.9 Favourable reference range	a) Value in km²	
	b) Operator for FRR	
	c) FRR is unknown (indicated by "true")	False
	d) Method used to set FRR	
2.3.10 Reason for change Is the difference between the reported value in 2.3.1 and the previous reporting round mainly due to...	a) Genuine change?	True
	b) Improved knowledge/more accurate data?	False
	c) Use of different method (e.g. "Range tool")?	False

2.4 Population		
2.4.1 Population size estimation (using individuals or agreed exceptions where possible)	a) Unit	area covered by population in m2
	b) Minimum	9000000
	c) Maximum	9000000
2.4.2 Population size estimation (using population unit other than individuals) Optional (<i>if 2.4.1 filled in</i>)	a) Unit	number of localities
	b) Minimum	11

	c) Maximum	16
2.4.3 Additional information on population estimates / conversion Optional	a) Definition of "locality"	Specific maerl bed
	b) Method to convert data	
	c) Problems encountered to provide population size estimation	
2.4.4 Year or period	2005-2012	
2.4.5 Method used Population size	Estimate based on partial data with some extrapolation and/or modelling	
2.4.6 Short-term trend Period	2001-2012	
2.4.7 Short-term trend Trend direction	decrease	
2.4.8 Short-term trend Magnitude	a) Minimum	
	b) Maximum	
	c) Confidence interval	
2.4.9 Short-term trend Method used	Estimate based on partial data with some extrapolation and/or modelling	
2.4.10 Long-term trend – Period	1989-2012	
2.4.11 Long-term trend Trend direction	decrease	
	Several maerl beds in Northern Ireland are known to have deteriorated in quality with a significant loss of live maerl coverage (e.g. Carlingford	

	Lough). Only in a few cases has the maerl bed been lost completely (e.g. Belfast Lough).	
2.4.12 Long-term trend Magnitude Optional	a) Minimum	
	b) Maximum	
	c) Confidence interval	
2.4.13 Long term trend Method used	1	
2.4.14 Favourable reference population	a) Number of individuals/agreed exceptions/other units	
	b) Operator	
	c) FRP is unknown indicated by "true"	True
	d) Method used to set FRP	
2.4.15 Reason for change Is the difference between the value reported at 2.4.1 or 2.4.2 and the previous reporting round mainly due to:	a) Genuine change?	False
	b) Improved knowledge/more accurate data?	False
	c) Use of different method (e.g. "Range tool")?	False

2.5 Habitat for the species		
2.5.1 Area estimation	9	
2.5.2 Year or period	2006-2012	
2.5.3 Method used Habitat for the species	Estimate based on partial data with some extrapolation and/or modelling	
2.5.4 Quality of the habitat	a) Habitat quality	Moderate
	The quality of the habitat is estimated to range from good (Red Bay SAC) to poor (Carlingford Lough). In many locations (especially in the sea loughs) the habitat is under threat from occasional poor water quality, siltation and habitat damage from mobile fishing gear.	
	b) Assessment method	The quality of the habitat was assessed from results of NIEA dive surveys and NIEA water quality surveys.
2.5.5 Short-term trend Period	2001-2012	
2.5.6 Short-term trend Trend direction	decrease	
2.5.7 Long-term trend Period	1989-2012	
2.5.8 Long-term trend Trend direction	decrease	
2.5.9 Area of suitable habitat for the species	a) Value in km ²	9
	b) Absence of data indicated as '0'	
2.5.10 Reason for change Is the difference between the value reported at 2.5.1 and the previous reporting round mainly due to	a) Genuine change?	True
	b) Improved knowledge/more accurate data?	False
	c) Use of different method (e.g. "Range tool")?	False

2.6 Main pressures		
a) Pressure	b) Ranking	c) Pollution qualifier
	H = high importance M = medium importance L = low importance	
A08: Fertilisation	M	
D03: shipping lanes, ports, marine constructions	M	
F02: Fishing and harvesting aquatic resources	M	

2.6.1 Method used – Pressures	mainly based on expert judgement and other data

2.7 Threats		
a) Threat	b) Ranking	c) Pollution qualifier
	H = high importance M = medium importance L = low importance	
A08: Fertilisation	M	
C02: Exploration and extraction of oil or gas	M	
D03: shipping lanes, ports, marine constructions	M	
F02: Fishing and harvesting aquatic resources	M	
H03: Marine water pollution	M	
C03: Renewable abiotic energy use	L	

2.7.1 Method used – Threats	expert opinion

2.8 Complementary information	
2.8.1 Justification of % thresholds for trends	

2.8.2 Other relevant information	
2.8.3 Trans-boundary assessment	

2.9 Conclusions (*assessment of conservation status at end of reporting period*)

Please refer to the United Kingdom assessment for this species.

3 Natura 2000 coverage & conservation measures - Annex II species (*only applies to species listed under Annex II of the Directive*)

3.1 Population

3.1.1 Population size Estimation of population size included in the SAC network	a) Unit	
	b) Minimum	
	c) Maximum	
3.1.2 Method used		
3.1.3 Trend of population size within the network (short-term trend)		

3.2 Conservation measures

Conservation measures taken (i.e. already being implemented) within the reporting period and provided information about their importance, location and evaluation.

3.2.1 Measure	3.2.2 Type					3.2.3 Ranking H = high importance M = medium importance L = low importance	3.2.4 Location where the measure is PRIMARILY applied			3.2.5 Broad evaluation of the measure					
	a) Legal/statutory	b) Administrative	c) Contractual	d) Recurrent	e) One-off		a) Inside	b) Outside	c) Both inside & outside	a) Maintain	b) Enhance	c) Long term	d) No effect	e) Unknown	f) Not evaluated

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