

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

**Third Report by the United Kingdom under  
Article 17**

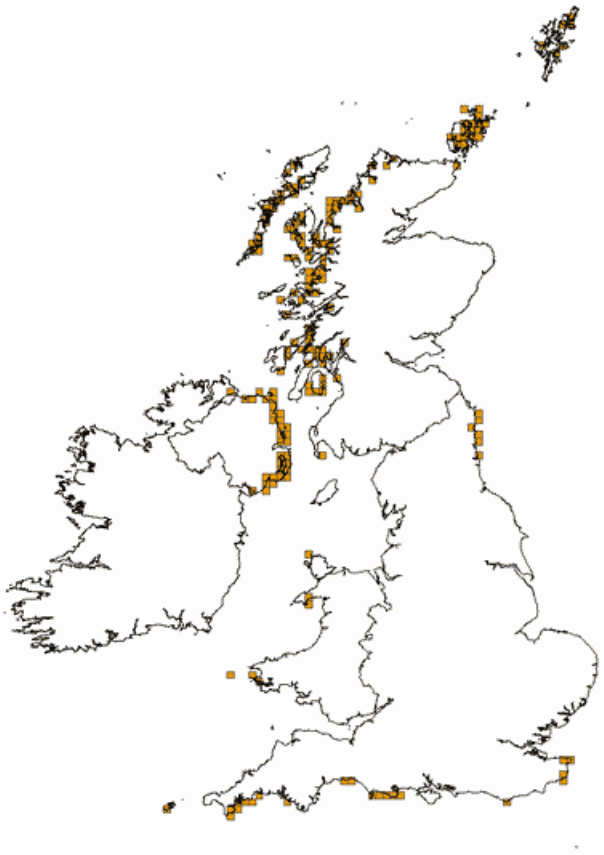
on the implementation of the Directive  
from January 2007 to December 2012  
Conservation status assessment for


Species:

S1377 - Maerl (*Phymatolithon calcareum*)

## 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	<b>0.2.1 Species code</b>	<b>S1377</b>
	<b>0.2.2 Species scientific name</b>	<b><i>Phymatolithon calcareum</i></b>
	<b>0.2.3 Alternative species scientific name</b> Optional	
	<b>0.2.4 Common name</b> Optional	

1.1 Maps			
1.1.1 Distribution map		Sensitive	False

<b>1.1.2 Method used - map</b>	<b>Estimate based on partial data with some extrapolation and/or modelling</b> For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information.
<b>1.1.3 Year or period</b>	<b>1980-2012</b> For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information.
<b>1.1.4 Additional distribution map</b> Optional	<b>False</b>
<b>1.1.5 Range map</b>	 <p>As noted in field 1.1.1 the distribution map is based on species and maerl bed records which are considered to be representative of the distribution within the current reporting period. Note that maerl bed records will contain a mix of maerl species, including <i>Phymatolithon calcareum</i>, <i>Lithothamnion glaciale</i> and <i>Lithothamnion corallioides</i>. The distribution pattern of these individual species varies. <i>Phymatolithon calcareum</i> is found along the west coast of Scotland and the Orkney islands, and along the south west coasts of Britain and in Northern Ireland; whereas <i>Lithothamnion corallioides</i> is restricted to England and Western Ireland. It was not possible to distinguish the species within each bed, and as such it was not appropriate to use this information to generate a range map using the range tool. Instead the range map was assumed to be equivalent to the distribution map. For further details see the 2013 Article 17 UK Approach document.</p>

<b>2.1 Biogeographical region &amp; marine regions</b>	<b>MATL</b>
<b>2.2 Published sources</b>	<p><b>Information sources as supplied by Natural Resources Wales</b></p> <p><b>Barbera, C., Bordehore, C., Borg, J.A., Glémarec, M., Grall, J., Hall-Spencer, J. M., De La Huz, Ch., Lanfranco, E., Lastra, M., Mooree, P.G., Mora, J., Pita, M.E., Ramos-Esplá, A.A., Rizzo, M., Sánchez-Mata, A., Seva, A., Schembri, P.J., and Valle, C. 2003. Conservation and management of northeast Atlantic and Mediterranean maerl beds. <i>Aquatic Conserv: Mar. Freshw. Ecosyst.</i> 13: S65–S76</b></p> <p><b>Bunker, F. StP. D. &amp; Camplin, M. D. 2007. A study of the Milford Haven maerl bed in 2005 using drop down video and diving. A report to the Countryside Council for Wales by MarineSeen. CCW Contract Science Report No. 769. Countryside Council for Wales, Bangor. 174pp + iii.</b></p> <p><b>Bunker, F. StP. D. 2011. Monitoring of a maerl bed in the Milford Haven Waterway, Pembrokeshire, 2010. A report to the Countryside Council for Wales by MarineSeen. CCW Contract Science Report No. 979. 145pp + iii</b></p> <p><b>Hebog. 2005. Milford Haven Maintenance Dredging Assessment: Biological &amp; Sediment Characterisation. Report to Milford Haven Port Authority. Project No. HE1632.</b></p> <p><b>RPS. 2006. Maerl Monitoring – Winter 2005 to Winter 2006. South Hook Jetty, Milford Haven. A report by RPS Planning &amp; Development to South Hook LNG Terminal Company Ltd</b></p> <p><b>RPS PTE. 2006. ROV Maerl Survey. South Hook. For Besixkier J.V. JER2580R200905JEv1.1. 20th September 2005.</b></p> <p><b>RPS. 2008. Maerl Monitoring – Winter 2005 to Summer 2008. South Hook Jetty, Milford Haven. A report by RPS Planning &amp; Development to South Hook LNG Terminal Company Ltd.</b></p> <p><b>Wilson, S., Blake, C., Berges, J. A. and Maggs, C.A. 2004. Environmental tolerances of free-living coralline algae (maerl): implications for European marine conservation. <i>Biological Conservation</i> 120. 283–293.</b></p> <p><b>Other sources</b>  <b>2004-10 Maerl summary data.xls</b>  <b>Maerl Article17 GIS processing notes.doc</b>  <b>CCW sidescan 2009</b>  <b>RPS South Hook maerl monitoring data &amp; PRIMER analyses</b>  <b>CCW maerl monitoring data &amp; PRIMER analyses</b></p> <p><b>Information sources as supplied by Natural England</b></p> <p><b>Allen, J.H. and Proctor, N.V. 2003 Monitoring Subtidal sandbanks of the Isles of Scilly and the Fal and Helford Special Areas of Conservation. Report to English Nature, Institute of</b></p>

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<b>2.3 Range</b>					
<b>2.3.1 Surface area Range</b>	<p><b>18100</b></p> <p>The surface area of the range was calculated from the map presented in 1.1.5. For further details see the 2013 Article 17 UK Approach document.</p>				
<b>2.3.2 Method used Surface area of Range</b>	<p><b>Estimate based on partial data with some extrapolation and/or modelling</b></p> <p>For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information.</p>				
<b>2.3.3 Short-term trend Period</b>	<p><b>2001-2012</b></p> <p>For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information.</p>				
<b>2.3.4 Short term trend Trend direction</b>	<p><b>unknown</b></p> <p>For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information. However, because the short term trend direction for over 50% of the resource is unknown, the overall UK short term trend direction is considered to be unknown.</p>				
<b>2.3.5 Short-term trend Magnitude</b>	<table border="1"> <tr> <td><b>a) Minimum</b></td> <td></td> </tr> <tr> <td><b>b) Maximum</b></td> <td></td> </tr> </table> <p style="text-align: right;">Optional</p>	<b>a) Minimum</b>		<b>b) Maximum</b>	
<b>a) Minimum</b>					
<b>b) Maximum</b>					
<b>2.3.6 Long-term trend Period</b>	<p><b>1989-2012</b></p> <p>For further details see the 2013 Article 17 UK Approach document and</p> <p style="text-align: right;">Optional</p>				

	relevant country-level reporting information.	
<b>2.3.7 Long-term trend</b> <b>Trend direction</b>	<b>unknown</b>	
	Optional	For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information. However, because the long term trend direction for over 50% of the resource is unknown, the overall UK long term trend direction is considered to be unknown.
<b>2.3.8 Long-term trend</b> <b>Magnitude</b>	Optional	<b>a) Minimum</b>
		<b>b) Maximum</b>
<b>2.3.9 Favourable reference range</b>	<b>a) Value in km<sup>2</sup></b>	
	<b>b) Operator for FRR</b>	
	<b>c) FRR is unknown (indicated by "true")</b>	<b>True</b>
	A quantitative area estimate for range cannot be provided, and based on current understanding it is not possible to indicate a favourable reference range.	
	<b>d) Method used to set FRR</b>	
<b>2.3.10 Reason for change</b> Is the difference between the reported value in 2.3.1 and the previous reporting round mainly due to...	<b>a) Genuine change?</b>	<b>False</b>
	Surface area of range was reported as unknown in 2007 so no comparison is possible. For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information.	
	<b>b) Improved knowledge/more accurate data?</b>	<b>False</b>
	Surface area of range was reported as unknown in 2007 so no comparison is possible. For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information.	
	<b>c) Use of different method (e.g. "Range tool")?</b>	<b>False</b>
	Surface area of range was reported as unknown in 2007 so no comparison is possible. For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information.	

<b>2.4 Population</b>		
<b>2.4.1 Population size estimation</b> (using individuals or agreed exceptions where possible)	<b>a) Unit</b>	<b>area covered by population in m2</b>
	This is the recommended population unit for <i>Phymatolithon calcareum</i> in the EC guidance. For further details see the 2013 Article 17 UK Approach document.	
	<b>b) Minimum</b>	<b>25534455</b>
	For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information.	
	<b>c) Maximum</b>	<b>25534455</b>
For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information.		
<b>2.4.2 Population size estimation</b> (using population unit other than individuals) Optional ( <i>if 2.4.1 filled in</i> )	<b>a) Unit</b>	<b>number of localities</b>
	For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information.	
	<b>b) Minimum</b>	<b>19</b>
	For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information.	
	<b>c) Maximum</b>	<b>19</b>
For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information.		
<b>2.4.3 Additional information on population estimates / conversion</b> Optional	<b>a) Definition of "locality"</b>	<b>Locality is defined as the number of maerl beds in Welsh and Northern Irish inshore waters, plus the number of Special Areas of Conservation in Scottish inshore waters and English inshore waters where maerl beds are known to occur.</b>
	For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information.	
	<b>b) Method to convert data</b>	
	For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information.	
	<b>c) Problems encountered to provide population size estimation</b>	<b>Whilst the unit for reporting population size (square metres) is appropriate, it is not possible to determine between maerl species within mixed species maerl beds. The proportions in which each maerl species is present in any given maerl bed may vary widely between adjacent sites. See also relevant country-level reporting information.</b>
For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information.		
<b>2.4.4 Year or period</b>	<b>2005-2012</b>	
	For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information.	
<b>2.4.5 Method used Population size</b>	<b>Estimate based on partial data with some extrapolation and/or modelling</b>	
	For further details see the 2013 Article 17 UK Approach document and	

		relevant country-level reporting information.
<b>2.4.6 Short-term trend Period</b>		<b>2001-2012</b>
		For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information.
<b>2.4.7 Short-term trend Trend direction</b>		<b>unknown</b>
		For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information. However, because the short term trend direction for over 50% of the resource is unknown, the overall UK short term trend direction is considered to be unknown.
<b>2.4.8 Short-term trend Magnitude</b> Optional	<b>a) Minimum</b>	
	<b>b) Maximum</b>	
	<b>c) Confidence interval</b>	
<b>2.4.9 Short-term trend Method used</b>		<b>Estimate based on expert opinion with no or minimal sampling</b>
		For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information.
<b>2.4.10 Long-term trend – Period</b> Optional		<b>1989-2012</b>
		For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information.
<b>2.4.11 Long-term trend Trend direction</b> Optional		<b>unknown</b>
		For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information. However, because the long term trend direction for over 50% of the resource is unknown, the overall UK long term trend direction is considered to be unknown.
<b>2.4.12 Long-term trend Magnitude</b> Optional	<b>a) Minimum</b>	
	<b>b) Maximum</b>	
	<b>c) Confidence interval</b>	



<b>2.4.13 Long term trend Method used</b>	<b>Estimate based on expert opinion with no or minimal sampling</b>	
Optional	For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information.	
<b>2.4.14 Favourable reference population</b>	<b>a) Number of individuals/agreed exceptions/other units</b>	
	<b>b) Operator</b>	
	<b>c) FRP is unknown (indicated by "true")</b>	<b>True</b>
	It is not known whether the population size of <i>Phymatolithon calcareum</i> has decreased or remained stable since the Habitats Directive came into force. However, there is evidence that maerl derived gravel has undergone some decline, at least within sites. Furthermore, live maerl has been left vulnerable by pressures listed under section 2.6.	
	Based on this and expert opinion, it is possible that the current population may not be viable. In the absence of more comprehensive information, the favourable reference population has been reported as Unknown for this reporting round.	
	<b>d) Method used to set FRP</b>	
<b>2.4.15 Reason for change</b> Is the difference between the value reported at 2.4.1 or 2.4.2 and the previous reporting round mainly due to:	<b>a) Genuine change?</b>	<b>False</b>
	The population unit reported has changed since the 2007 report so this question is not applicable. For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information.	
	<b>b) Improved knowledge/more accurate data?</b>	<b>False</b>
	The population unit reported has changed since the 2007 report so this question is not applicable. For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information.	
	<b>c) Use of different method (e.g. "Range tool")?</b>	<b>False</b>
	The population unit reported has changed since the 2007 report so this question is not applicable. For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information.	

<b>2.5 Habitat for the species</b>	
<b>2.5.1 Area estimation</b>	<b>25.85</b> For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information.
<b>2.5.2 Year or period</b>	<b>2004-2012</b> For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information.
<b>2.5.3 Method used Habitat for the species</b>	<b>Estimate based on partial data with some extrapolation and/or modelling</b> For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information.
<b>2.5.4 Quality of the habitat</b>	<b>a) Habitat quality</b> <b>Unknown</b> For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information.  Based on SAC and SSSI/ASSI data, 13.8% of maerl bed habitat is considered to be in unfavourable condition and 56.4% is considered to be in favourable condition. However, the quality of habitat has been reported as unknown for this reporting round since a large proportion of the habitat has not been assessed.
	<b>b) Assessment method</b> <b>For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information.</b>
	For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information.
<b>2.5.5 Short-term trend Period</b>	<b>2001-2012</b> For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information.
<b>2.5.6 Short-term trend Trend direction</b>	<b>unknown</b> For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information. However, because the short term trend direction for over 50% of the resource is unknown, the overall UK short term trend direction is considered to be unknown.
<b>2.5.7 Long-term trend Period</b>  Optional	<b>1989-2012</b> For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information.
<b>2.5.8 Long-term trend Trend direction</b>  Optional	<b>unknown</b> For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information. However, because the long term trend direction for over 50% of the resource is unknown, the overall UK long term trend direction is considered to be unknown.
<b>2.5.9 Area of suitable habitat for the species</b>	<b>a) Value in km<sup>2</sup></b> <b>26.79</b>
	<b>b) Absence of data indicated as '0'</b>
<b>2.5.10 Reason for change</b>  Is the difference between the value reported at 2.5.1 and the previous reporting round mainly	<b>a) Genuine change?</b> <b>False</b>
	Habitat for species was reported as unknown in 2007 so no comparison

due to	is possible. For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information.	
	<b>b) Improved knowledge/more accurate data?</b>	<b>False</b>
	Habitat for species was reported as unknown in 2007 so no comparison is possible. For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information.	
	<b>c) Use of different method (e.g. "Range tool")?</b>	<b>False</b>
Habitat for species was reported as unknown in 2007 so no comparison is possible. For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information.		

<b>2.6 Main pressures</b>		
<b>a) Pressure</b>	<b>b) Ranking</b>	<b>c) Pollution qualifier</b>
	H = high importance (max 5 entries) M = medium importance L = low importance	
C01: Mining and quarrying	M	
F01: Marine and Freshwater Aquaculture	M	
F06: Hunting, fishing or collecting activities not referred to above	M	
G05: Other human intrusions and disturbances	M	P
J02: human induced changes in hydraulic conditions	M	O
K02: Biocenotic evolution, succession	M	
A08: Fertilisation	L	
D03: shipping lanes, ports, marine constructions	L	O
E03: Discharges	L	X
F02: Fishing and harvesting aquatic resources	L	O
H01: Pollution to surface waters (limnic & terrestrial, marine & brackish)	L	X
H02: Pollution to groundwater (point sources and diffuse sources)	L	X
H03: Marine water pollution	L	X
H04: Air pollution, air-borne pollutants	L	
H06: excess energy	L	T

I01: invasive non-native species	L	N
M01: Changes in abiotic conditions	L	P
M02: Changes in biotic conditions	L	T

Where more than 20 pressures were reported at a UK level the pressures of lowest importance were removed, as required by the EC reporting format.

For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information.

**2.6.1 Method used – Pressures**

**mainly based on expert judgement and other data**

For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information.

<b>2.7 Threats</b>		
<b>a) Threat</b>	<b>b) Ranking</b>	<b>c) Pollution qualifier</b>
	H = high importance (max 5 entries) M = medium importance L = low importance	
C01: Mining and quarrying	M	
F01: Marine and Freshwater Aquaculture	M	
F06: Hunting, fishing or collecting activities not referred to above	M	
G05: Other human intrusions and disturbances	M	P
J02: human induced changes in hydraulic conditions	M	T
K02: Biocenotic evolution, succession	M	
A08: Fertilisation	L	
C02: Exploration and extraction of oil or gas	L	
C03: Renewable abiotic energy use	L	
D03: shipping lanes, ports, marine constructions	L	X
E03: Discharges	L	X

F02: Fishing and harvesting aquatic resources	L	O
H01: Pollution to surface waters (limnic & terrestrial, marine & brackish)	L	X
H02: Pollution to groundwater (point sources and diffuse sources)	L	X
H03: Marine water pollution	L	X
H04: Air pollution, air-borne pollutants	L	
H06: excess energy	L	O
I01: invasive non-native species	L	O
M01: Changes in abiotic conditions	L	
M02: Changes in biotic conditions	L	

Where more than 20 threats were reported at a UK level the threats of lowest importance were removed, as required by the EC reporting format.

For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information.

#### 2.7.1 Method used – Threats

#### expert opinion

For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information.

### 2.8 Complementary information

#### 2.8.1 Justification of % thresholds for trends

#### 2.8.2 Other relevant information

For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information.

#### 2.8.3 Trans-boundary assessment

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

#### 2.9.1 Range

#### a) Conclusion

Unknown

	<p>Range has been assessed as unknown because</p> <p>(i) 2.3.4 Range short-term trend direction is unknown; and</p> <p>(ii) 2.3.9.a Favourable Reference Range is unknown</p> <p>For further details see the 2013 Article 17 UK Approach document</p>	
	<b>b) Qualifier</b>	
<b>2.9.2 Population</b>	<b>a) Conclusion</b>	<b>Unknown</b>
	<p>Population has been assessed as unknown because</p> <p>(i) 2.4.7 Population short-term trend direction is unknown; and</p> <p>(ii) 2.4.14 Favourable Reference Population is unknown.</p> <p>For further details see the 2013 Article 17 UK Approach document</p>	
	<b>b) Qualifier</b>	
<b>2.9.3 Habitat for the species</b>	<b>a) Conclusion</b>	<b>Unknown</b>
	<p>Habitat for species has been assessed as unknown because</p> <p>(i) it is unknown if there is sufficient habitat to support a viable population;</p> <p>(ii) 2.5.4a the quality of the habitat is unknown; and</p> <p>(iii) 2.9.1 and 2.9.2 the range and population status are unknown.</p> <p>For further details see the 2013 Article 17 UK Approach document</p>	
	<b>b) Qualifier</b>	
<b>2.9.4 Future prospects</b>	<b>a) Conclusion</b>	<b>Unknown</b>
	<p>Conclusion reached because prospects for all parameters are unknown.</p> <p>(i) 2.3.4 Range short-term trend direction is unknown and the relationship of 2.3.1 Range surface area to 2.3.9a Favourable reference range in c. 2025 is unknown (Unknown prospects);</p> <p>(ii) 2.4.5 Population size short-term trend direction is unknown and the relationship of 2.4.1 Population size to 2.4.14 Favourable reference population in c. 2025 is unknown (Unknown prospects); and</p> <p>(iii) 2.5.6 Habitat for species short-term trend direction is unknown and the true relationship of 2.5.1 Habitat for species to 2.5.9 Area of suitable habitat is unknown (Unknown prospects). Various threats (see 2.6.) are expected to impact on the future status of the habitat for species, and it is unknown whether the future area of habitat will be sufficiently large for the long-term survival of the species.</p>	

	For further details see the 2013 Article 17 UK Approach document.
	<b>b) Qualifier</b>
<b>2.9.5 Overall assessment of Conservation Status</b>	<b>Unknown</b>
	An overall conclusion of unknown is given based on the individual parameter conclusions - for further details see the 2013 Article 17 UK Approach document
<b>2.9.6 Overall trend in Conservation Status</b>	

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

<b>3.1 Population</b>	
<b>3.1.1 Population size</b>  Estimation of population size included in the SAC network	<b>a) Unit</b>
	<b>b) Minimum</b>
	<b>c) Maximum</b>
<b>3.1.2 Method used</b>	
<b>3.1.3 Trend of population size within the network</b> (short-term trend)  Optional	

### 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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