

**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

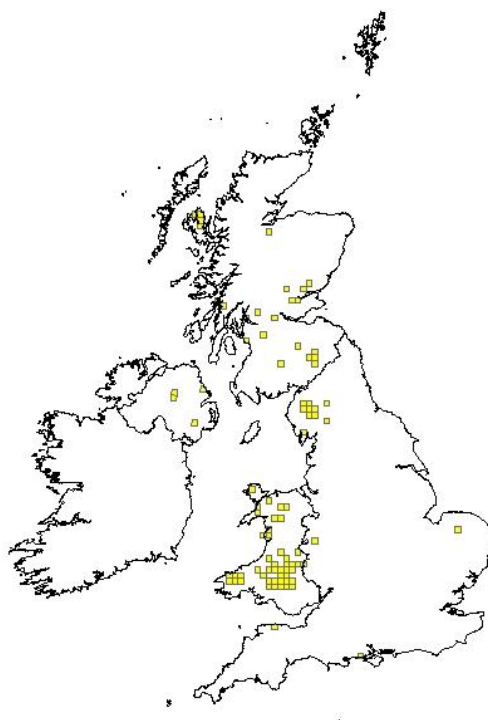
Species:

S1393 - Slender green feather-moss (*Hamatocaulis (Drepanocladus) vernicosus*)

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

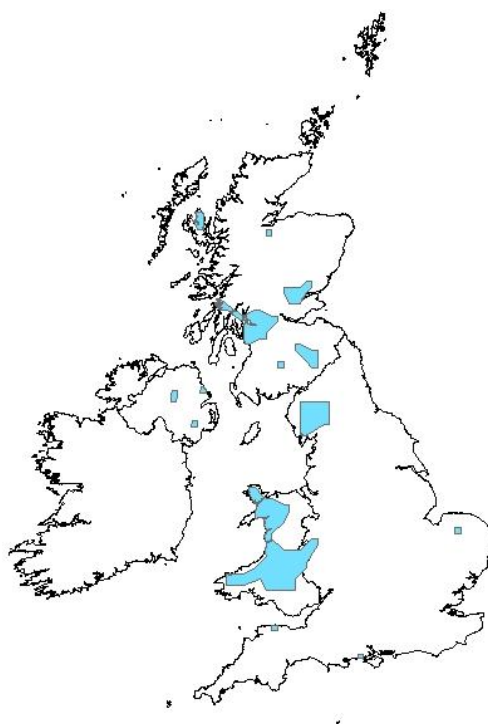
<i>Field name</i>	<i>Brief explanations</i>	
0.2 Species	0.2.1 Species code	S1393
	0.2.2 Species scientific name	<i>Hamatocaulis (Drepanocladus) vernicosus</i>
	0.2.3 Alternative species scientific name Optional	
	0.2.4 Common name Optional	

1.1 Maps			
1.1.1 Distribution map	True	Sensitive	False
	The distribution map is based on species records which are considered to be representative of the range within the current reporting period. For further details see the 2013 Article 17 UK Approach document.		



1.1.2 Method used - map	Estimate based on partial data with some extrapolation and/or modelling
	For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information
1.1.3 Year or period	1991-2012
	The distribution map is based on species records which are considered to be representative of the range within the current reporting period. For

	further details see the 2013 Article 17 UK Approach document.
1.1.4 Additional distribution map Optional	False
1.1.5 Range map	True
	The range map was produced by applying the UK range mapping tool to the distribution map presented in 1.1.4. The alpha value for this species was 20km. For further details see the 2013 Article 17 UK Approach document.



2.1 Biogeographical region & marine regions	ATL
2.2 Published sources	<p>Atherton, I., Bosanquet, S., and Lawley, M. 2010. Mosses and Liverworts of Britain and Ireland- a field guide. British Bryological Society, Plymouth.</p> <p>BIRCH, K. 2006. UK0030121 Corsydd Eifonydd Special Area of Conservation SAC Monitoring Report S1393 Slender Green Feather Moss (<i>Hamatocaulis vernicosus</i>). Countryside Council for Wales Report.</p> <p>Blockeel, T.L. 1997. A revision of British (and Irish) specimens of <i>Drepanocladus vernicosus</i>. Unpublished report to JNCC.</p> <p>Blockeel, T.L. 2000. The identification of <i>Drepanocladus revolvens</i> and <i>D. cossonii</i>, and their distribution in Britain and Ireland. Bulletin of the British Bryological Society 75: 32-40.</p> <p>BOSANQUET, S.D.S. 2009. UK0030221 Mynydd Epynt Special Area of Conservation SAC Monitoring Report S1393 Slender Green Feather Moss (<i>Hamatocaulis vernicosus</i>). Countryside Council for Wales Report.</p> <p>BOSANQUET, S.D.S. 2012. Supporting information for</p>

	<p>Countryside Council for Wales submission on <i>Drepanocladus vernicosus</i>. BOSANQUET, S.D.S., HALE, A.D., MOTLEY, G.S. AND WOODS, R.G. 2006. Recent work on <i>Hamatocaulis vernicosus</i> in mid and south Wales. <i>Field Bryology</i>, 90:228. British Bryological Society data, accessed via the NBN Gateway. Church, J.M., Hodgetts, N.G., Preston, C.D. & Stewart N.F. 2001. <i>British Red Data Books 2. Mosses and liverworts.</i> Peterborough, Joint Nature Conservation Committee. Crum, H.A. & Anderson, L.E. 1981. <i>Mosses of eastern North America. Volume 2.</i> New York, Columbia University Press. European Committee for Conservation of Bryophytes. 1995. <i>Red Data Book of European Bryophytes.</i> Trondheim, ECCB. Hedenäs, L. 1989. The genera <i>Scorpidium</i> and <i>Hamatocaulis</i>, gen. nov., in northern Europe. <i>Lindbergia</i> 15: 8-36. Hedenäs, L. 2003. The European species of the <i>Calliergon-Scorpidium-Drepanocladus</i> complex, including some related or similar species. <i>Meylania</i> 28: 1-116. Hill, M.O. & Preston, C.D. 1998. The geographical relationships of British and Irish bryophytes. <i>Journal of Bryology</i> 20: 127-226. HILL, M.O. 1988, A Bryophyte Flora of North Wales. <i>Journal of Bryology</i> 15: 377-491. Hill, M.O., Preston, C.D. & Smith, A.J.E. (eds.) 1994. <i>Atlas of the bryophytes of Britain and Ireland. Volume 3 Mosses (Diplolepideae).</i> Colchester, Harley Books. Hill, M.O., Preston, C.D., Bosanquet, S.D.S. & Roy, D.B. 2007. <i>BRYOATT. Attributes of British and Irish mosses, liverworts and hornworts.</i> Cambridge, Centre for Ecology and Hydrology. Hodgetts N.G. (2012) <i>Bryophyte survey of Knock Dhu and Sallagh Braes, Co. Antrim - revised.</i> Unpublished report. Hodgetts, N. 2011 <i>Surveillance of priority bryophytes in Scotland: Hamatocaulis vernicosus.</i> Unpublished report to SNH. Lawton, E. 1971. <i>Moss Flora of the Pacific Northwest. Suppl. No. 1 of the Journal of the Hattori Botanical Laboratory.</i> Nichinan, Hattori Botanical Laboratory. LEWIS, H. 2012. <i>UK0030104 Cadair Idris Special Area of Conservation SAC Monitoring Report S1393 Slender Green Feather Moss (Hamatocaulis vernicosus)</i> Lockhart, B., Hodgetts, N. & Holyoak, D. (2012). <i>Rare and threatened bryophytes of Ireland.</i> National Museums Northern Ireland Publication No 028. O'Shea, B.J. 2006. Checklist of the mosses of sub-Saharan Africa (version 5, 12/06). <i>Tropical Bryology Research Reports</i> 6: 1-255. Preston, C.D. 2006. A revised list of nationally scarce bryophytes. <i>Field Bryology</i> 90: 22-30. Wijk, R. van der, Margadant, W.D. & Florschütz, P.A. 1962. <i>Index Muscorum, Vol. II (D-Hypno).</i> <i>Regnum Vegetabile</i> 26: 1-535.</p> <p>UK distribution map data sources</p> <p>Additional data:Cumbria Biodiversity Data Centre - added by</p>
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	<p>Mike Sutcliffe (NE) 28/09/2012 BIS CCW Abergavenny SSSI Scientific Data Emailed to JNCC (no details) Summer 2012 BIS CCW BBNP Miscellaneous Data (Abergavenny) Emailed to JNCC (no details) Summer 2012 BIS CCW Brecknock Rare Mosses Emailed to JNCC (no details) Summer 2012 BIS CCW Radnor and North Brecknock-SSSI Scientific Data Emailed to JNCC (no details) Summer 2012 BIS sent directly to JNCC (no details) SurveyName Bryophyte records 2009 BIS sent directly to JNCC (no details) SurveyName Radnorshire Bryophytes VC43 Dr Francis Rose Field Notebook - added by Mike Sutcliffe (NE) 28/09/2012 NBN Gateway data: British Bryological Society GA000144 Extracted by LH 13/09/2012 Bryophyte data for Great Britain from the British Bryological Society held by BRC recent records from Nick Hodgetts not yet submitted to BBS dataset. Emailed to JNCC (AM) from NH 09/07/2012. Richard Weyl emailed to JNCC (LH) by Kyle Hunter (DOENI) 13/09/2012 Sam Bosquanet emailed to JNCC (LH) by Kyle Hunter (DOENI) 13/09/2012 Sent to JNCC (LH) by Colin McLeod of SNH by email 21/08/2012 Theatened Bryophyte Database</p> <p>UK Distribution Map data sources</p> <p>Additional data: Cumbria Biodiversity Data Centre - added by Mike Sutcliffe (NE) 28/09/2012 BIS CCW Abergavenny SSSI Scientific Data Emailed to JNCC (no details) Summer 2012 BIS CCW BBNP Miscellaneous Data (Abergavenny) Emailed to JNCC (no details) Summer 2012 BIS CCW Brecknock Rare Mosses Emailed to JNCC (no details) Summer 2012 BIS CCW Radnor and North Brecknock-SSSI Scientific Data Emailed to JNCC (no details) Summer 2012 BIS sent directly to JNCC (no details) SurveyName Bryophyte records 2009 BIS sent directly to JNCC (no details) SurveyName Radnorshire Bryophytes VC43 Dr Francis Rose Field Notebook - added by Mike Sutcliffe (NE) 28/09/2012 NBN Gateway data: British Bryological Society GA000144 Extracted by LH 13/09/2012 Bryophyte data for Great Britain from the British Bryological Society held by BRC recent records from Nick Hodgetts not yet submitted to BBS dataset. Emailed to JNCC (AM) from NH 09/07/2012. Richard Weyl emailed to JNCC (LH) by Kyle Hunter (DOENI) 13/09/2012 Sam Bosquanet emailed to JNCC (LH) by Kyle Hunter (DOENI)</p>
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	13/09/2012 Sent to JNCC (LH) by Colin McLeod of SNH by email 21/08/2012 Threatened Bryophyte Database

2.3 Range	
2.3.1 Surface area Range	18553
	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.
2.3.2 Method used Surface area of Range	Estimate based on partial data with some extrapolation and/or modelling
	For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information
2.3.3 Short-term trend Period	2001-2012
	For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information
2.3.4 Short term trend Trend direction	stable
	The short term trend direction was derived by comparing the range map in 1.1.5 with the range map produced in the 2007 report, by considering the range trend in the 2007 report, and by considering any further information provided by the UK country conservation agencies. For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information.
2.3.5 Short-term trend Magnitude Optional	a) Minimum
	b) Maximum
2.3.6 Long-term trend Period Optional	1988-2012
	For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information.
2.3.7 Long-term trend Trend direction Optional	stable
	The long term trend direction was derived by comparing the range map in 1.1.5 with the range map produced in the 2007 report, by considering the range trend in the 2007 report, and by considering any further information provided by the UK country conservation agencies. For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information.
2.3.8 Long-term trend Magnitude Optional	a) Minimum

	b) Maximum	
2.3.9 Favourable reference range	a) Value in km²	18553
	Due to recent clarification of taxonomy, and recent improved recording effort, the current range represents a better understanding of the likely range when the Habitats Directive came into force in the UK (1994). It is believed to be large enough to support a viable population.	
	b) Operator for FRR	
	c) FRR is unknown (indicated by "true")	False
	d) Method used to set FRR	Due to recent clarification of taxonomy, and recent improved recording effort, the current range represents a better understanding of the likely range when the Habitats Directive came into force in the UK (1994). It is believed to be large enough to support a viable population. For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information.
	Due to recent clarification of taxonomy, and recent improved recording effort, the current range represents a better understanding of the likely range when the Habitats Directive came into force in the UK (1994). It is believed to be large enough to support a viable population. For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information.	
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?	False
	The increase in range is not thought to be genuine but as a result of better data.	
	b) Improved knowledge/more accurate data?	True
	The increase in range is not thought to be genuine but as a result of better data.	
	c) Use of different method (e.g. "Range tool")?	False
	Use of a revised UK range mapping tool had little effect on the calculation for surface area of range.	

2.4 Population		
2.4.1 Population size estimation (using individuals or agreed exceptions where possible)	a) Unit	
	b) Minimum	
	c) Maximum	
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 map 10x10 km grid cells
	The population unit is the same as reported in 2007.	
	b) Minimum	75
	For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information	
	c) Maximum	75
For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information		
2.4.3 Additional information on population estimates / conversion Optional	a) Definition of "locality"	
	b) Method to convert data	
	c) Problems encountered to provide population size estimation	
2.4.4 Year or period	1989-2012	
	For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information	
2.4.5 Method used Population size	Estimate based on partial data with some extrapolation and/or modelling	
	For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information	
2.4.6 Short-term trend Period	2001-2012	
	For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information	
2.4.7 Short-term trend Trend direction	stable	
	For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information	
2.4.8 Short-term trend Magnitude Optional	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	
	For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information	
2.4.10 Long-term trend – Period	1989-2012	
Optional	For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information	
2.4.11 Long-term trend Trend direction	unknown	
Optional	For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information	
2.4.12 Long-term trend Magnitude	a) Minimum	
	b) Maximum	
	c) Confidence interval	
2.4.13 Long term trend Method used	Estimate based on partial data with some extrapolation and/or modelling	
Optional		
2.4.14 Favourable reference population	a) Number of individuals/agreed exceptions/other units	75
	Due to recent clarification of taxonomy, and recent improved recording effort, the current range represents a better understanding of the likely population when the Habitats Directive came into force in the UK (1994). It is believed to be large enough to support a viable population.	
	b) Operator	

	c) FRP is unknown (indicated by "true")	False
	d) Method used to set FRP	Due to recent clarification of taxonomy, and recent improved recording effort, the current range represents a better understanding of the likely population when the Habitats Directive came into force in the UK (1994). It is believed to be large enough to support a viable population. For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information.
	Due to recent clarification of taxonomy, and recent improved recording effort, the current range represents a better understanding of the likely population when the Habitats Directive came into force in the UK (1994). It is believed to be large enough to support a viable population. For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information.	
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
	The increase in population is not thought to be genuine but as a result of better data.	
	b) Improved knowledge/more accurate data?	True
	The increase in population is not thought to be genuine but as a result of better data.	
	c) Use of different method (e.g. "Range tool")?	False
	The increase in population is not thought to be genuine but as a result of better data.	

2.5 Habitat for the species	
2.5.1 Area estimation	The specific area of habitat occupied by this species in the UK is unknown.
	For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information.
	There is thought to be a sufficient amount of habitat in the UK to

	support a viable population of the species.	
2.5.2 Year or period	1989-2012	
	For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information.	
2.5.3 Method used	Absent data	
Habitat for the species	For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information.	
2.5.4 Quality of the habitat	a) Habitat quality	Good
	For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information.	
	b) Assessment method	Examination of SAC monitoring reports, and assumed due to there being little evidence of species decline.
	For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information.	
2.5.5 Short-term trend Period	2001-2012	
	For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information.	
2.5.6 Short-term trend Trend direction	stable	
	For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information.	
2.5.7 Long-term trend Period	1989-2012	
Optional	For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information.	
2.5.8 Long-term trend Trend direction	decrease	
Optional	For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information.	
2.5.9 Area of suitable habitat for the species	a) Value in km²	
	b) Absence of data indicated as '0'	
2.5.10 Reason for change	a) Genuine change?	False
Is the difference between the value reported at 2.5.1 and the previous reporting round mainly due to	Surface area of habitat was reported as unknown in 2007 so no comparison is possible.	
	b) Improved knowledge/more accurate data?	False
	Surface area of habitat was reported as unknown in 2007 so no comparison is possible.	
	c) Use of different method (e.g. "Range tool")?	False

	Surface area of habitat was reported as unknown in 2007 so no comparison is possible.
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2.6 Main pressures		
a) Pressure	b) Ranking	c) Pollution qualifier
	H = high importance (max 5 entries) M = medium importance L = low importance	
J02: human induced changes in hydraulic conditions	H	
A01: Cultivation	M	
A04: grazing	M	
A07: use of biocides, hormones and chemicals	M	
A08: Fertilisation	M	
B01: forest planting on open ground	M	
D02: Utility and service lines	M	
G04: Military use and civil unrest	M	
H01: Pollution to surface waters (limnic & terrestrial, marine & brackish)	M	
H04: Air pollution, air-borne pollutants	M	
I02: problematic native species	M	
K01: abiotic (slow) natural processes	M	
K02: Biocenotic evolution, succession	M	
A11: Agriculture activities not referred to above	L	
E03: Discharges	L	
F04: Taking / Removal of terrestrial plants, general	L	
G01: Outdoor sports and leisure activities, recreational activities	L	
L08: inundation (natural processes)	L	

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

2.6.1 Method used – Pressures

based exclusively or to a larger extent on real data from sites/occurrences or other data sources

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

2.7 Threats		
a) Threat	b) Ranking	c) Pollution qualifier
	H = high importance (max 5 entries) M = medium importance L = low importance	
A04: grazing	H	
A08: Fertilisation	H	N
B01: forest planting on open ground	H	
J02: human induced changes in hydraulic conditions	H	
A01: Cultivation	M	
A07: use of biocides, hormones and chemicals	M	
D02: Utility and service lines	M	
G04: Military use and civil unrest	M	
H01: Pollution to surface waters (limnic & terrestrial, marine & brackish)	M	
H04: Air pollution, air-borne pollutants	M	
I02: problematic native species	M	
K01: abiotic (slow) natural processes	M	
K02: Biocenotic evolution, succession	M	
A11: Agriculture activities not referred to above	L	
C03: Renewable abiotic energy use	L	
H02: Pollution to groundwater (point sources and diffuse sources)	L	N
M01: Changes in abiotic	L	

conditions		

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

Favourable

Range has been assessed as Favourable because range is equal to the FRV and the short term range trend is stable.

b) Qualifier

2.9.2 Population

a) Conclusion

Favourable

Population has been assessed as Favourable because population is equal to the FRV and the short term population trend is stable.

b) Qualifier

2.9.3 Habitat for the species

a) Conclusion

Favourable

Habitat has been assessed as Favourable because there is thought to be sufficient amount of habitat for the species to be viable, habitat quality is good, and the short term trend is stable.

b) Qualifier

2.9.4 Future prospects

a) Conclusion

Favourable

Future prospects is assessed as Favourable on the basis of assessments of the future prospects of the three parameters, range, population and

	<p>habitat for species: Range future prospects: Good Population future prospects: Good Habitat future prospects: Good Overall future prospects: Favourable.</p>		
	<table border="1"> <tr> <td>b) Qualifier</td> <td></td> </tr> </table>	b) Qualifier	
b) Qualifier			
2.9.5 Overall assessment of Conservation Status	<p>Favourable</p> <p>The overall assessment is Favourable because all parameters have been assessed as Favourable.</p>		
2.9.6 Overall trend in Conservation Status			

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

3.1 Population		
<p>3.1.1 Population size</p> <p>Estimation of population size included in the SAC network</p>	a) Unit	number of map 10x10 km grid cells
	b) Minimum	25
	For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information.	
	c) Maximum	28
	For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information.	
3.1.2 Method used	Complete survey/Complete survey or a statistically robust estimate	
	For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information.	
<p>3.1.3 Trend of population size within the network (short-term trend)</p> <p>Optional</p>	stable	
	For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information.	

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
2.1: Maintaining grasslands and other open habitats	Y		Y	Y	Y	H			Y	Y	Y	Y			
3.0: Other forestry- related measures	Y		Y	Y	Y	L		Y							Y
4.1: Restoring/im proving water quality	Y			Y		L			Y	Y	Y	Y			
4.2: Restoring/im proving the hydrological regime	Y		Y	Y	Y	L			Y	Y	Y	Y			
6.1: Establish protected areas/sites	Y				Y	H	Y			Y	Y	Y			
6.3: Legal protection of habitats and species	Y				Y	M			Y	Y		Y			
6.5: Adaptation/ abolition of military land use				Y		M	Y			Y					

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