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

Conservation status assessment for the species:

S6216 - Slender green feather- moss (*Hamatocaulis vernicosus*)

UNITED KINGDOM

IMPORTANT NOTE - PLEASE READ

- The information in this document represents 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.

- It is based on supporting information provided by the geographically-relevant Statutory Nature Conservation Bodies, which is documented separately.

- The 2019 Article 17 UK Approach document provides details on how this supporting information contributed to the UK Report and the fields that were completed for each parameter.

- The reporting fields and options used are aligned to those set out in the European Commission guidance.

- Maps showing the distribution and range of the species are included (where available).

- Explanatory notes (where provided) are included at the end. These provide additional audit trail information to that included within the UK assessments. Further underpinning explanatory notes are available in the related country-level reports.

- 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 not relevant to this species (section 12 Natura 2000 coverage for Annex II species).

- The UK-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.

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NATIONAL LEVEL	

1. General information

1.1 Member State	**UK**
1.2 Species code	**6216**
1.3 Species scientific name	**Hamatocaulis vernicosus**
1.4 Alternative species scientific name	
1.5 Common name (in national language)	Slender green feather-moss

2. Maps

2.1 Sensitive species	No
2.2 Year or period	1989-2018
2.3 Distribution map	Yes
2.4 Distribution map Method used	Complete survey or a statistically robust estimate
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						
	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	**Atlantic (ATL)**
4.2 Sources of information	England British Bryological Society, 2018. Database to the end of 2017. Blockeel, T.L., Bosanquet, S.D.S., Hill, M.O. & Preston, C.D. 2014. Atlas of British & Irish Bryophytes. Pisces Publications, Newbury. Atherton, I., Bosanquet, S. & Lawley, M. (eds). 2012. Mosses and Liverworts of Britain and Ireland: A Field Guide. British Bryological Society. Edwards, S.R. 2012. English Names for British Bryophytes. British Bryological Society. Scotland Main data source/review: Hodgetts, N. & Phillips, S. 2018 Surveillance of priority bryophytes in Scotland 2010-2013: Hamatocaulis vernicosus. Unpublished report to SNH. National Biodiversity Network Atlas Scotland, (https://scotland.nbnatlas.org/) accessed on the 20th December 2017 using data from the British Bryological Society datasets dr859 and dr924. The Data Provider, Original Recorder [where identified], and the NBN Trust bear no responsibility for any further analysis or interpretation of the data and/or information. Records from Payne, S. (2017) pers comm Records from Hodgetts, N. (2015) pers comm. Wales BLOCKEEL, T.L., BOSANQUET, S.D.S., HILL, M.O. & PRESTON, C.D., 2014, Atlas of British and Irish bryophytes. Pisces Publications, Newbury. BOSANQUET, S.D.S. 2012. Supporting information for Countryside Council for Wales submission on Drepanocladus vernicosus.

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BOSANQUET, S.D.S., HALE, A.D., MOTLEY, G.S. & WOODS, R.G. 2006, Recent work on Hamatocaulis vernicosus in Mid and South Wales. Field Bryology. British Bryological Society database, accessed 6th February 2018
N.Ireland
Atherton, I., Bosanquet, S., and Lawley, M. 2010. Mosses and Liverworts of Britain and Ireland- a field guide. British Bryological Society, Plymouth.
BOSANQUET, S.D.S., HALE, A.D., MOTLEY, G.S. AND WOODS, R.G. 2006. Recent work on Hamatocaulis vernicosus in mid and south Wales. Field Bryology, 90:228.
CHURCH, J.M., HODGETTS, N.G., PRESTON, C.D. & STEWART, N.F. 2001. British Red Data Books mosses and liverworts. Joint Nature Conservation Committee.
Hodgetts N.G. (2012) Bryophyte survey of Knock Dhu and Sallagh Braes, Co. Antrim - revised. Unpublished report.
Lockhart, B., Hodgetts, N. & Holyoak, D. (2012). Rare and threatened bryophytes of Ireland. National Museums Northern Ireland Publication No 028.
NIEA. Unpublished surveys and reports. Various years

5. Range

5.1 Surface area (km²)	18765.48	
5.2 Short-term trend Period	2007-2018	
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	Complete survey or a statistically robust estimate	
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)	18533
	b) Operator	
	c) Unknown	
	d) Method	The FRR is the same as in 2013. The value is considered to be large enough to support a viable population and no lower than the range estimate when the Habitats Directive came into force in the UK. For further information see the 2019 Article 17 UK Approach document.
5.11 Change and reason for change in surface area of range	Improved knowledge/more accurate data Use of different method The change is mainly due to: Improved knowledge/more accurate data	
5.12 Additional information		

6. Population

6.1 Year or period	1989-2018	
6.2 Population size (in reporting unit)	a) Unit	number of map 1x1 km grid cells (grids1x1)
	b) Minimum	

	c) Maximum	
	d) Best single value	228
6.3 Type of estimate	Best estimate	
6.4 Additional population size (using population unit other than reporting unit)	a) Unit	number of map 10x10 km grid cells (grids10x10)
	b) Minimum	
	c) Maximum	
	d) Best single value	91
6.5 Type of estimate	Best estimate	
6.6 Population size Method used	Complete survey or a statistically robust estimate	
6.7 Short-term trend Period	2007-2018	
6.8 Short-term trend Direction	Stable (0)	
6.9 Short-term trend Magnitude	a) Minimum	
	b) Maximum	
	c) Confidence interval	
6.10 Short-term trend Method used	Based mainly on expert opinion with very limited 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		
6.15 Favourable reference population (using the unit in 6.2 or 6.4)	a) Population size	75 with unit number of map 10x10 km grid cells (grids10x10)
	b) Operator	
	c) Unknown	
	d) Method	The FRP is the same as in 2013. The value is considered to be large enough to support a viable population and no less than when the Habitats Directive came into force in the UK. For further information see the 2019 Article 17 UK Approach document.
6.16 Change and reason for change in population size	Improved knowledge/more accurate data	
	The change is mainly due to:	Improved knowledge/more accurate data
6.17 Additional information	The short-term trend is reported as 'stable' because whilst there has been an increase in the number of map 10x10km grid cells reported since the last reporting round i.e. 75 in 2013 to 91 in 2019, this is largely due to improved knowledge of the extant population as result of increased survey effort.	

7. Habitat for the species

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7.1 Sufficiency of area and quality of occupied habitat	a) Are area and quality of occupied habitat sufficient (for long-term survival)?	Yes
	b) Is there a sufficiently large area of unoccupied habitat of suitable quality (for long-term survival)?	
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
Extensive grazing or undergrazing by livestock (A10)	H
Agricultural activities generating air pollution (A27)	M
Drainage for use as agricultural land (A31)	M
Conversion to forest from other land uses, or afforestation (excluding drainage) (B01)	M
Military, paramilitary or police exercises and operations on land (H01)	M
Problematic native species (I04)	M
Mixed source air pollution, air-borne pollutants (J03)	M
Natural succession resulting in species composition change (other than by direct changes of agricultural or forestry practices) (L02)	M

Threat	Ranking
Extensive grazing or undergrazing by livestock (A10)	H
Agricultural activities generating air pollution (A27)	M
Drainage for use as agricultural land (A31)	M
Conversion to forest from other land uses, or afforestation (excluding drainage) (B01)	H
Military, paramilitary or police exercises and operations on land (H01)	M
Problematic native species (I04)	M
Mixed source air pollution, air-borne pollutants (J03)	M

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Natural succession resulting in species composition change   M
(other than by direct changes of agricultural or forestry
practices) (L02)

8.2 Sources of information

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   Medium-term results (within the next two reporting periods, 2019-2030)

9.5 List of main conservation measures

Prevent conversion of natural and semi-natural habitats, and habitats of species into agricultural land (CA01)

Maintain existing extensive agricultural practices and agricultural landscape features (CA03)

Reduce diffuse pollution to surface or ground waters from agricultural activities (CA11)

Reduce/eliminate air pollution from agricultural activities (CA12)

Prevent conversion of (semi-) natural habitats into forests and of (semi-)natural forests into intensive forest plantation (CB01)

Reduce impact of military installations and activities (CH01)

Management of problematic native species (CI05)

Reduce impact of mixed source pollution (CJ01)

Management of habitats (others than agriculture and forest) to slow, stop or reverse natural processes (CL01)

9.6 Additional information

10. Future prospects

10.1 Future prospects of parameters	a) Range	Good
	b) Population	Good
	c) Habitat of the species	Good

10.2 Additional information   Future trend of Range is Overall stable; Future trend of Population is Overall stable; and Future trend of Habitat for the species is Overall stable. For further information on how future trends inform the Future Prospects conclusion see the 2019 Article 17 UK Approach document.

11. Conclusions

11.1. Range   Favourable (FV)

11.2. Population   Favourable (FV)

11.3. Habitat for the species   Favourable (FV)

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11.4. Future prospects	Favourable (FV)
11.5 Overall assessment of Conservation Status	Favourable (FV)
11.6 Overall trend in Conservation Status	Stable (=)
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	Conclusion on Range reached because: (i) the short-term trend direction in Range surface area is stable; and (ii) the current Range surface area is not less than the Favourable Reference Range. Conclusion on Population reached because: (i) the short-term trend direction in Population size is stable; and (ii) the current Population size is not less than the Favourable Reference Population. Conclusion on Habitat for the species reached because: (i) the area of occupied and unoccupied habitat is sufficient and (ii) the habitat quality is sufficient for the long-term survival of the species; and (iii) the short-term trend in area of habitat is stable. Conclusion on Future prospects reached because: (i) the Future prospects for Range are good; (ii) the Future prospects for Population are good and (iii) the Future prospects for Habitat for the species are good. Overall assessment of Conservation Status is Favourable because all of the conclusions are Favourable. Overall trend in Conservation Status is based on the combination of the short-term trends for Range - stable, Population - stable, and Habitat for the species - stable. Overall assessment of Conservation Status has not changed since 2013. Overall trend in Conservation Status has not changed since 2013.

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	number of map 1x1 km grid cells (grids1x1)
	b) Minimum	
	c) Maximum	
	d) Best single value	52
12.2 Type of estimate	Best estimate	
12.3 Population size inside the network Method used	Complete survey or a statistically robust estimate	
12.4 Short-term trend of population size within the network Direction	Stable (0)	

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12.5 Short-term trend of population size within the network Method used	Based mainly on expert opinion with very limited data

| 12.6 Additional information | |

13. Complementary information

| 13.1 Justification of % thresholds for trends | |

| 13.2 Trans-boundary assessment | |

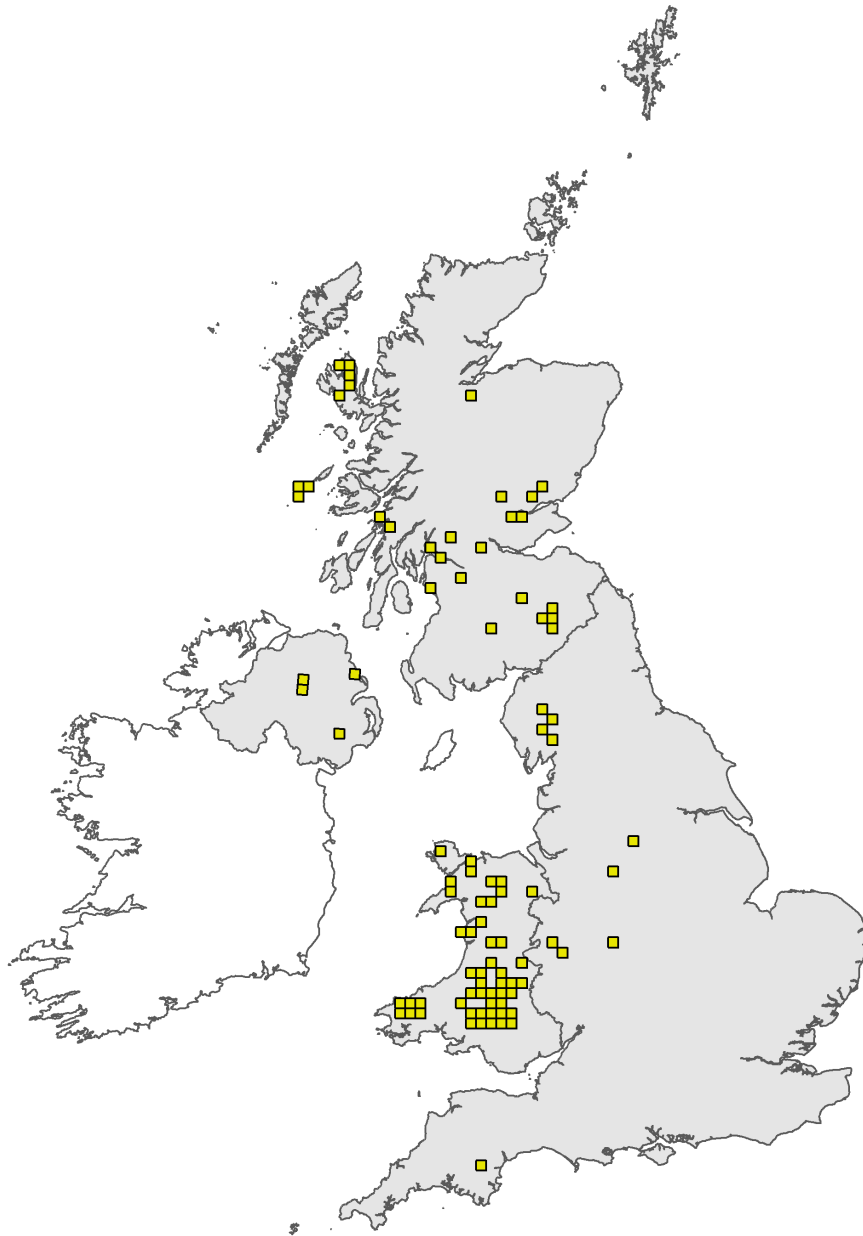| 13.3 Other relevant Information | |

Distribution Map

Figure 1: UK distribution map for S6216 - Slender green feather- moss (*Hamatocaulis vernicosus*). Coastline boundary derived from the Oil and Gas Authority's OGA and Lloyd's Register SNS Regional Geological Maps (Open Source). Open Government Licence v3 (OGL). Contains data © 2017 Oil and Gas Authority.

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.
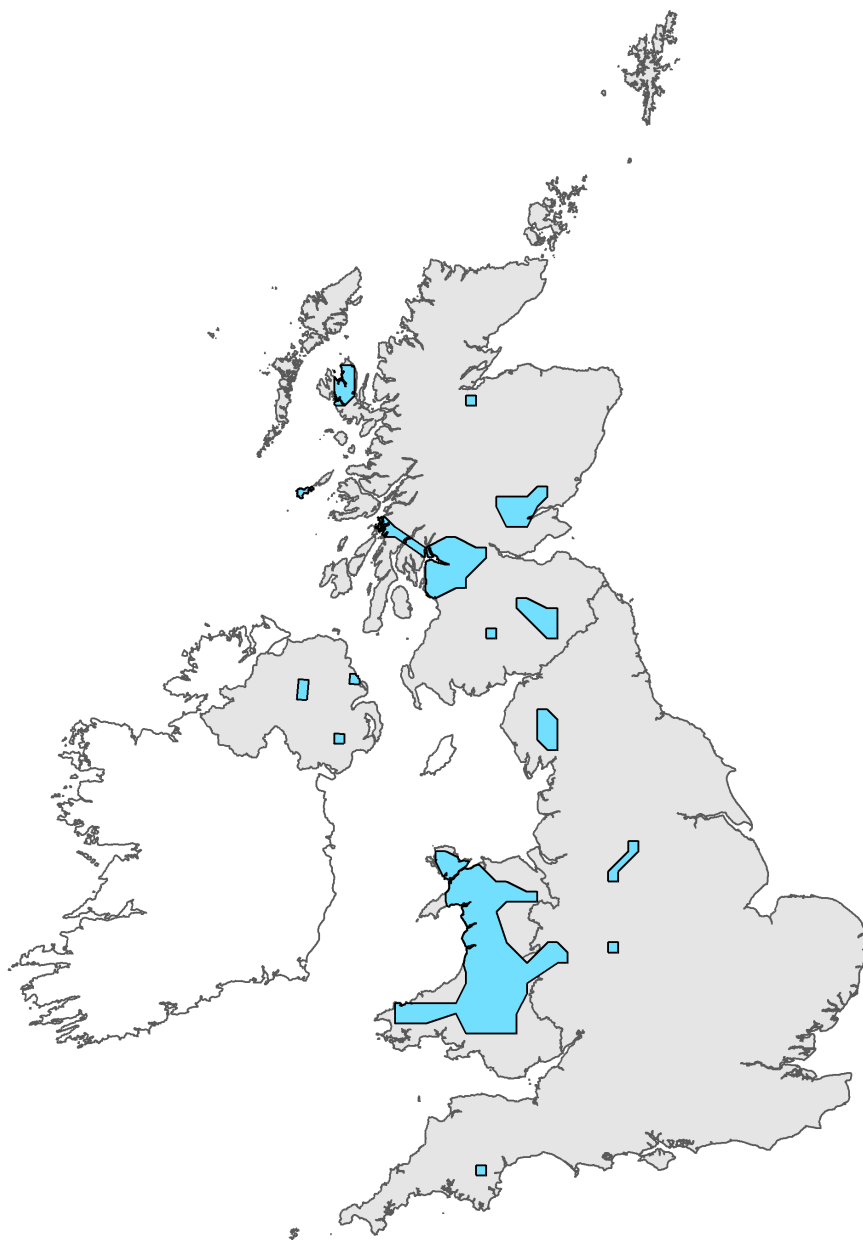
Range Map

Figure 2: UK range map for S6216 - Slender green feather- moss (*Hamatocaulis vernicosus*). Coastline boundary derived from the Oil and Gas Authority's OGA and Lloyd's Register SNS Regional Geological Maps (Open Source). Open Government Licence v3 (OGL). Contains data © 2017 Oil and Gas Authority.

The range map has been produced by applying a bespoke range mapping tool for Article 17 reporting (produced by JNCC) to the 10km grid square distribution map presented in Figure 1. The alpha value for this species was 20km. For further details see the 2019 Article 17 UK Approach document.