

**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:

S1413 - Clubmosses (*Lycopodium* sp.)

IMPORTANT NOTE – PLEASE READ

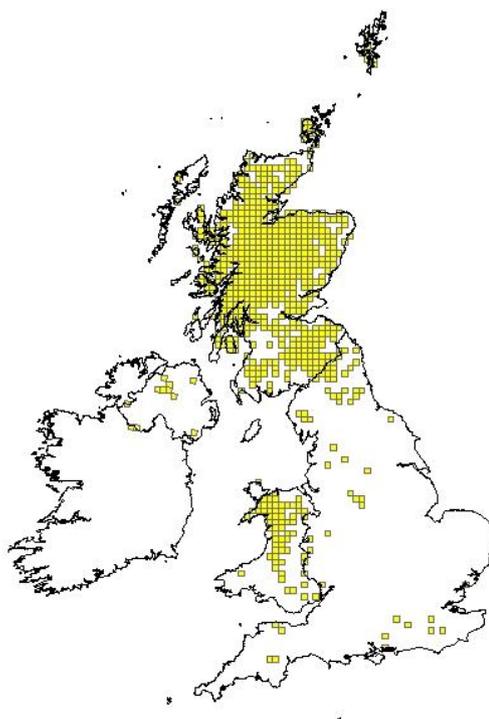
- The country-level reporting information contained in this document is a contribution to the Article 17 UK report for the habitat/species concerned.
- It has been provided by **Northern Ireland Environment Agency** and refers only to the state of the habitat/species in **Northern Ireland** - it does 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	S1413
	0.2.2 Species scientific name	<i>Lycopodium sp.</i>
	0.2.3 Alternative species scientific name Optional	
	0.2.4 Common name Optional	

1.1 Maps

1.1.1 Distribution map		Sensitive	False
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1.1.2 Method used - map	Estimate based on partial data with some extrapolation and/or modelling		
1.1.3 Year or period	2007-2012		
1.1.4 Additional distribution map	False		
1.1.5 Range map			

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2.1 Biogeographical region & marine regions	ATL
2.2 Published sources	<p>"McNeill, I. 2010. The Flora of County Tyrone. National Museums Northern Ireland.</p> <p>Parnell, J. and Curtis, T. 2012. Webb's an Irish Flora. Cork University Press.</p> <p>PRESTON, C.D., PEARMAN, D.A. & DINES, T.D. 2002. New Atlas of the British & Irish Flora. Oxford University Press.</p> <p>WALKER, K. J. and PRESTON C. D. 2006. Ecological predictors of extinction risk in the flora of lowland England, UK. Biodiversity and Conservation (2006) 15:1913–1942"</p>

2.3 Range	
2.3.1 Surface area Range	
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	unknown
2.3.5 Short-term trend Magnitude	a) Minimum
	b) Maximum
2.3.6 Long-term trend Period	1988-2012
2.3.7 Long-term trend Trend direction	unknown
	In NI, it is possible that the species has shown a decline in range since 1988, but this may be due to a lack of recording effort, rather than a genuine decline.
2.3.8 Long-term trend Magnitude	a) Minimum
	Optional

	b) Maximum	
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	The post-1994 range trend (at a 10-km resolution) is unknown. Therefore, on the basis that current range is not restricted, the favourable reference range has been set as at least equivalent to current.
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
	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	
	Information on population sizes for <i>Lycopodium</i> species is limited. The only proxy measure available for population size is the number of occupied 10-km squares.	
	Species recorded from 13 10km squares in NI.	
	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
	b) Minimum	7
	c) Maximum	7
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	2007-2012	
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	unknown	
2.4.8 Short-term trend Magnitude	a) Minimum	
	b) Maximum	
	c) Confidence interval	
2.4.9 Short-term trend Method used	Absent data	

2.4.10 Long-term trend – Period	1988-2012	
2.4.11 Long-term trend Trend direction	<p>decrease</p> <p>Described as "rare and declining" in Ireland (Parnell and Curtis, 2012). In Tyrone, described as "probably decreasing" (McNeill, 2010). Recent records here only from Mullaghclogha (1984 and later) and Sawel (1990).</p> <p>On the basis of these comments, it is believed that the species has been declining over the long-term, but it is not possible to quantify this.</p> <p>This coincides with the general UK view - i.e. from 2007 Report, "Observations by species experts indicate that small, fragmented populations in the lowlands, and also populations within its core upland areas, continue to be lost at a gradual but steady rate."</p>	
2.4.12 Long-term trend Magnitude Optional	a) Minimum	
	b) Maximum	
	c) Confidence interval	
2.4.13 Long term trend Method used	2	
2.4.14 Favourable reference population	a) Number of individuals/agreed exceptions/other units	
	b) Operator	
	c) FRP is unknown indicated by "true"	False
	d) Method used to set FRP	In the absence of a reliable population estimate, it is not appropriate to report a favourable reference population estimate. However, decreasing trends would indicate that any such value would be greater than current.

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	0	
2.5.2 Year or period	2007-2012	
2.5.3 Method used Habitat for the species	Estimate based on partial data with some extrapolation and/or modelling Preston et al. (2002) states for <i>L. clavatum</i> : "A prostrate, evergreen perennial herb of heaths, moors and mountains. It is often frequent on base-rich micaceous soils, but also occurs on more acidic <i>Calluna</i> heath and <i>Nardus</i> grassland. Propagation is mostly vegetative, but spores can colonise new sites, particularly the disturbed soil of roadside embankments and quarries."	
2.5.4 Quality of the habitat	a) Habitat quality	Unknown
	b) Assessment method	Preston et al. (2002) states for <i>L. clavatum</i>: "A prostrate, evergreen perennial herb of heaths, moors and mountains. It is often frequent on base-rich micaceous soils, but also occurs on more acidic <i>Calluna</i> heath and <i>Nardus</i> grassland. Propagation is mostly vegetative, but spores can colonise new sites, particularly the disturbed soil of roadside embankments and quarries." In NI, the species is generally found in upland heaths.
2.5.5 Short-term trend	2001-2012	

Period		
2.5.6 Short-term trend	unknown	
Trend direction		
2.5.7 Long-term trend	1988-2012	
Period		
2.5.8 Long-term trend	unknown	
Trend direction	Upland areas in NI have suffered from overgrazing and burning since 1988, although there are indications that grazing pressures have eased somewhat more recently. However, given that the effects of grazing and burning on the species are poorly understood, it is impossible to make a definitive statement on the long-term or short-term trends in habitat quality for the species.	
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 Is the difference between the value reported at 2.5.1 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

2.6 Main pressures		
a) Pressure	b) Ranking	c) Pollution qualifier
	H = high importance M = medium importance L = low importance	
A04: grazing	H	
J01: fire and fire suppression	H	
J02: human induced changes in hydraulic conditions	H	

Evidence from GB suggest that the species has declined severely in lowland areas as a result of agricultural intensification. However, there is little evidence of specific impacts in the uplands; the apparent decline in the species over the last few decades suggests that overgrazing, burning and drainage may be significant.

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	
A04: grazing	H	
J01: fire and fire suppression	H	
J02: human induced changes in hydraulic conditions	H	
M01: Changes in abiotic conditions	M	

Threats as pressures under 2.6, with additional unknown potential impact from climate change.

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

Lycopodium is a genus of clubmosses. For this reporting round, the UK has decided to retain the approach used in the 2007 report and interpret *Lycopodium* spp. strictly - i.e. only including the species that are within the genus *Lycopodium* and not the other genera in Lycopodiaceae. There are two well-known species in the UK: *L. clavatum* and *L. annotinum*. These are both considered in the assessment. However, note that only *Lycopodium clavatum* occurs in NI.

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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

