

**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 **Natural Resources Wales** and refers only to the state of the habitat/species in **Wales** - 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.

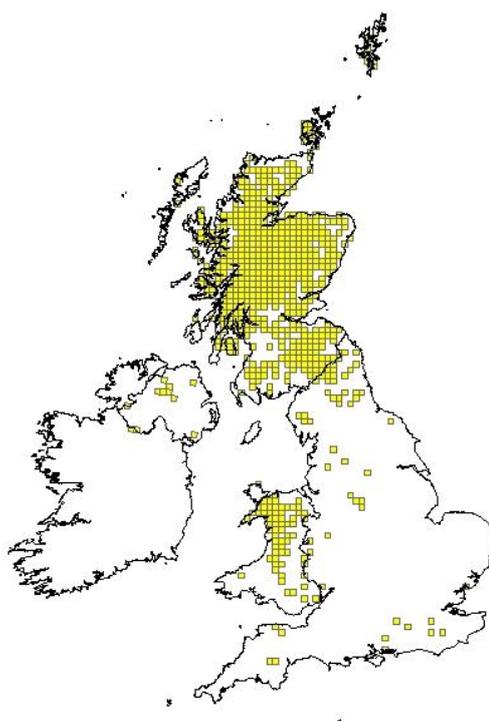
As of 1 April 2013, the Countryside Council for Wales, Environment Agency Wales and Forestry Commission Wales became Natural Resources Wales/Cyfoeth Naturiol Cymru

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	Clubmoss species

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
	Distribution data has been collected by amateur and professional botanists and collated on the distribution database of the Botanical Society of the British Isles (bsbidb.org.uk).
1.1.3 Year or period	1999-2012
	Information from before 2007 is included here because because populations of <i>Lycopodium clavatum</i> are not systematically surveyed. The species is thought, however, to maintain a relatively stable distribution over this time period (ie these records probably still represent

	occurrences of the species in 2007-2012).
1.1.4 Additional distribution map	False
1.1.5 Range map	

2.1 Biogeographical region & marine regions	ATL
2.2 Published sources	<p>"Distribution Database for the Botanical Society of the British Isles (bsbidb.org.uk). Accessed 9/10/12</p> <p>Bonner, I.D. (2008) Anglesey Rare Plant Register. Botanical Society of the British Isles.</p> <p>Chater, A.O. (2010) Flora of Cardiganshire. Aberystwyth. 930pp.</p> <p>Dines, T.D. (2012) Section 42 UKBAP species register (Wales). (Unpublished draft. Plantlife Wales)"</p>

2.3 Range					
2.3.1 Surface area Range					
2.3.2 Method used Surface area of Range	<p>Estimate based on partial data with some extrapolation and/or modelling</p> <p>Distribution data has been collected by amateur and professional botanists and collated on the distribution database of the Botanical Society of the British Isles (bsbidb.org.uk).</p>				
2.3.3 Short-term trend Period	<p>1999-2012</p> <p>Data from 1999 are included here because populations of <i>Lycopodium clavatum</i> are not systematically surveyed. The species is thought, however, to maintain a relatively stable distribution over this time period (ie these records probably still represent occurrences of the species in 2007-2012).</p>				
2.3.4 Short term trend Trend direction	<p>Range trends are calculated for the UK as a whole. In Wales these are believed to be relatively stable, although locally, at least, there are likely historical declines due to grassland improvement schemes and afforestation "it has, at the same time, benefitted to some extent both from the disturbance of road-making and quarrying and from the protection from grazing provided by the FC" (Chater, 2010).</p>				
2.3.5 Short-term trend Magnitude	<table border="1"> <tr> <td>a) Minimum</td> <td></td> </tr> <tr> <td colspan="2">See note 2.3.4 above.</td> </tr> </table>	a) Minimum		See note 2.3.4 above.	
a) Minimum					
See note 2.3.4 above.					

	b) Maximum	
	See note 2.3.4 above.	
2.3.6 Long-term trend Period		
	Records for <i>Lycopodium clavatum</i> are not routinely collected but data over the period from 1989 should provide a long term trend.	
2.3.7 Long-term trend Trend direction		
	Range trends are calculated for the UK as a whole. The observations in note 2.3.4 above will also probably apply to the 1989-2012 trend.	
2.3.8 Long-term trend Magnitude	a) Minimum	
Optional	See note 2.3.7 above.	
	b) Maximum	
	See note 2.3.7 above.	
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	a) Genuine change?	False
Is the difference between the reported value in 2.3.1 and the previous reporting round mainly due to...	Lycopodium clavatum has almost certainly declined in some habitats as a result of grassland improvement and afforestation but, as outlined in note 2.3.4 above, the species has also increased locally through the creation of disturbed habitats and protection of sites in forestry. For these reasons there may be differing trends in distribution over time, in addition to the number of new records due to previous oversight.	
	b) Improved knowledge/more accurate data?	True
	Some differences in the range of <i>L. clavatum</i> in Wales between current and former reporting periods may be due to improved recording and the discovery of new, formerly overlooked populations (not as a result of dispersal into new habitat). This is a likely attribute of improved	

	knowledge or more accurate data.	
	c) Use of different method (e.g. "Range tool")?	False
	It is unlikely that different methods (eg "range tools") are responsible for observed change.	

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
	For these reporting purposes, the populations of <i>Lycopodium clavatum</i> in Wales are measured in terms of 10 km sq distribution.	
	b) Minimum	64
	The 10 km sq distribution for <i>Lycopodium clavatum</i> in Wales amounts to a minimum of 64 unit squares.	
	c) Maximum	65
	There is uncertainty in the records over one 10 km sq (SO25) which might record <i>Lycopodium clavatum</i> in England or in Wales. The data is uncertain over this possibly additional record, so the maximum number of recorded 10 km square records for <i>Lycopodium clavatum</i> in Wales is 65.	
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	1999-2012	
	Population trend information should be based over a long time period (including records prior to 2001, if possible), since records have not been systematically collected. See note 2.3.3 above.	
2.4.5 Method used Population size	Estimate based on partial data with some extrapolation and/or modelling	
	There is good cover on the distribution of <i>Lycopodium clavatum</i> in	

	Wales at the 10 km sq unit of measurement but this does not translate readily into population size. Some 10 km sq records, especially at the edges of the species' range (eg. SH49) represent only very small populations; in other parts of central and north Wales the 10 km sq (eg. SH72) represents many 100 m sq of subdominant species cover. For this reason the population size data is effectively absent.	
2.4.6 Short-term trend Period	1999-2012	
	See note 2.3.3 above.	
2.4.7 Short-term trend Trend direction	unknown	
	See note 2.4.5 above. In the absence of reliable population size data it is not possible to provide short term trend direction.	
2.4.8 Short-term trend Magnitude	a) Minimum	
	See note 2.4.7 above.	
	b) Maximum	
	See note 2.4.7 above.	
	c) Confidence interval	
	See note 2.4.7 above.	
2.4.9 Short-term trend Method used	Absent data	
	See note 2.4.5 above.	
2.4.10 Long-term trend – Period	1989-2012	
	See note 2.3.6 above.	
2.4.11 Long-term trend Trend direction	unknown	
	See note 2.4.7 above.	
2.4.12 Long-term trend Magnitude Optional	a) Minimum	
	See note 2.4.7 above	
	b) Maximum	
	See note 2.4.7 above	
	c) Confidence interval	
	See note 2.4.7 above	
2.4.13 Long term trend	0	

Method used	See note 2.4.5 above	
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	
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
	It is not possible to establish any genuine change in population size based on the 10 km sq units of measurement (see note 2.4.5 above).	
	b) Improved knowledge/more accurate data?	False
	See note 2.4.15a above	
	c) Use of different method (e.g. "Range tool")?	False
	See note 2.4.15a above.	

2.5 Habitat for the species	
2.5.1 Area estimation	It is not possible to provide an accurate estimate of the surface area of <i>Lycopodium clavatum</i> habitat in Wales, based on the available 10 km sq information. The species is typically confined to sites of non-intensive management but these may be roadsides or large areas of upland heath. The actual area may be something between 0.5 km sq (if the boundaries are close to areas of occupancy) and 20 km sq (by including management units) but there is no means of establishing this figure with relevance to previous or future reporting.
	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	1999-2012
	Lycopodium distribution data have been collected over a 13 year period

	(see 2.3.3 above) but these do not give any measurable habitat information.	
2.5.3 Method used Habitat for the species	Absent data See note 2.5.1 above	
2.5.4 Quality of the habitat	a) Habitat quality	Unknown
	See note 2.5.1 above	
	b) Assessment method	N/A
2.5.5 Short-term trend Period	1999-2012 See note 2.5.2 above	
2.5.6 Short-term trend Trend direction	unknown See note 2.5.1 above	
2.5.7 Long-term trend Period	1989-2012 See note 2.5.2 above. The long term data do not provide evidence of habitat trends.	
2.5.8 Long-term trend Trend direction	unknown Despite information on local change in species distribution and habitat change (2.3.4) this cannot be quantified to provide long term trend information.	
2.5.9 Area of suitable habitat for the species	a) Value in km²	0
	See note 2.5.1 above.	
	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
	See note 2.4.15a above	
	b) Improved knowledge/more accurate data?	False
	See note 2.4.15a above	
	c) Use of different method (e.g. "Range tool")?	False
See note 2.4.15a above		

2.6 Main pressures		
a) Pressure	b) Ranking	c) Pollution qualifier
	H = high importance M = medium importance L = low importance	
A04: grazing	M	

B01: forest planting on open ground	M	
B02: Forest and Plantation management & use	M	
D01: Roads, paths and railroads	L	

Road-building (D01) has been identified as a local factor in the provision of habitat for *Lycopodium clavatum* in Wales and improvements to grazing land (A04) are responsible for more widespread loss of habitat. Forestry activities (B01, B02) have a greater influence, both in shading out heathland sites and in providing protection against grazing - and some local forest edge / woodland ride habitat.

2.6.1 Method used – Pressures

mainly based on expert judgement and other data

Evaluation of pressures is based on source materials quoted in the references 2.2, correspondence with local botanists (particularly the vice-county recorders with the Botanical Society of the British Isles) and discussions with the national expert, Dr Fred Rumsey of the British Museum (Natural History).

2.7 Threats		
a) Threat	b) Ranking	c) Pollution qualifier
	H = high importance M = medium importance L = low importance	
A04: grazing	M	
B01: forest planting on open ground	M	
B03: forest exploitation without replanting or natural regrowth	M	

Improvements to grazing land (A04) are responsible for more widespread loss of habitat. Forestry activities (B01, B02) have a greater influence, both in shading out heathland sites and in providing protection against grazing - and some local forest edge / woodland ride habitat. It should be emphasised, however, that collecting / taking / removal of *Lycopodium* species in Wales (F04) is not a significant threat.

2.7.1 Method used – Threats

expert opinion

Evaluation of threats is based on source materials quoted in the references 2.2, correspondence with local botanists (particularly the vice-county recorders with the Botanical Society of the British Isles) and discussions with the national expert, Dr Fred Rumsey of the British Museum (Natural History).

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	3.2.4 Location	3.2.5 Broad evaluation of the measure
		H = high importance	where the measure is PRIMARILY applied	

	a) Legal/statutory	b) Administrative	c) Contractual	d) Recurrent	e) One-off	M = medium importance L = low importance	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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