

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

**Second Report by the United Kingdom under  
Article 17  
on the implementation of the Directive  
from January 2001 to December 2006**

**Conservation status assessment for :  
S1409: *Sphagnum sp.* - Bog-mosses**

Please note that this is a section of the report. For the complete report visit <http://www.jncc.gov.uk/article17>

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# S1409 *Sphagnum* sp. Bog-mosses

*Audit trail compiled and edited by JNCC and the Plant Conservation Working Group*

This document is an audit of the data and judgements on conservation status in the UK's report on the implementation of the Habitats Directive (January 2001 to December 2006) for this species. Superscript numbers accompanying the headings below, cross-reference to headings in the corresponding Annex B reporting form. This supporting information should be read in conjunction with the UK approach for species (see 'Assessing Conservation Status: UK Approach').

## 1. Range Information<sup>2.3</sup>

The range for the genus *Sphagnum* includes the entirety of the UK, although there is an area of England roughly on a line between the Severn and the Wash where records are very sparse.

### 1.1 Surface area of range<sup>2.3.1</sup>

**Unknown**

General bryophyte mapping work has two date classes in the UK: up to 1950, and 1950 to present. Although a new atlas is in preparation, and there has been increased recording in recent years, it is unsafe to assume that squares without recent records, but with a record post-1950 represent recent losses. This will only be known if a new date class is included in mapping work, and comprehensive coverage is gained for this date class. Therefore post-1950 records is the closest estimate of the current range. If records from 1950 to 2006 are used to calculate an Alpha Hull, with the value of alpha set at 18 km to reflect the dispersal capacity of this species, then the extent of occurrence is 202,148 km<sup>2</sup>. However, it is reported as Unknown since it is considered that 1950 is too long ago to be included in current estimates, and changes that have occurred since then are Unknown.

### 1.2 Date of range determination<sup>2.3.2</sup>

**Not applicable**

### 1.3 Quality of range data<sup>2.3.3</sup>

**Poor**

Hill *et al.* (1992) provides reasonable survey coverage for the whole of the UK. However the date class is large and it is possible that there may have been significant changes within the last 50 years.

### 1.4 Range trend<sup>2.3.4</sup> and range trend magnitude<sup>2.3.5</sup>

**Unknown**

It is not possible to measure changes since 1950, and biases in recording effort mean that it is unsafe to assume that squares without recent records, but with a current record (post-1950) represent recent losses.

### 1.5 Range trend period<sup>2.3.6</sup>

**1994 – 2006**

## 1.6 Reasons for reported trend in range<sup>2.3.7</sup>

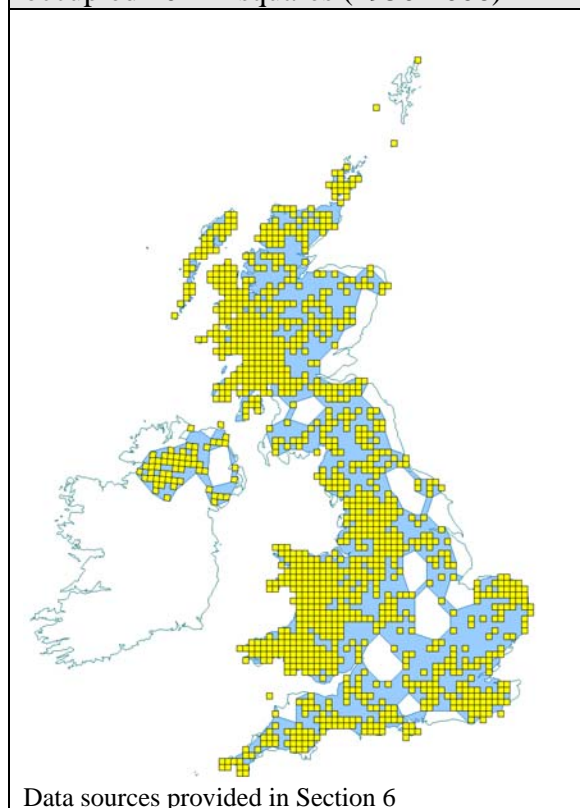
Not applicable

## 1.7 Favourable reference range<sup>2.7.1</sup>

Unknown

The trend and current extent are Unknown. Since the species is widespread, it is reasonable to assume that the 1994 range was equivalent to the favourable reference value, based on Note 1 of 'Assessing Conservation Status: UK Approach'. This value may have been in the region of 200,000 km<sup>2</sup> (calculated within Alpha Hull software, based on records from 1950 to 2006). However, in the absence of a more recent dataset, favourable reference range has been reported as Unknown.

**Map 1.1** Current extent of occurrence and occupied 10-km squares (1950-2006)



## 1.8 Range conclusion<sup>2.8</sup>

Unknown

The only possible conclusion is Unknown given that the current extent, the trend, and the relationship with the favourable reference range are all Unknown. It may be Favourable.

## 2. Population of the Species<sup>2.4</sup>

### 2.1 Population estimate<sup>2.4.1</sup>

Unknown

It is not possible to give any true population estimate for a plant that can provide extensive cover over large areas and which is widespread and locally plentiful over large parts of the

country. Also, it is not possible to give a current estimate of the number of occupied 10-km squares, since the data are only available including records from 1950 onwards.

## **2.2 Date of population estimate<sup>2.4.2</sup>**

Not applicable

## **2.3 Method of population estimate<sup>2.4.3</sup>**

Not applicable

## **2.4 Quality of population data<sup>2.4.4</sup>**

**Poor**

As was discussed for range, the only accurate assessment of data is 'post 1950', and it is possible that there have been significant changes during this time. Furthermore, because the estimate can only be made at a very coarse scale (occupied 10-km squares), data quality is assessed as Poor.

## **2.5 Population trend<sup>2.4.5</sup> and population trend magnitude<sup>2.4.6</sup>**

**Unknown**

There has been increased recording in recent years, it is unsafe to assume that squares without recent records, but with a current record (post-1950) represent recent losses. It is not possible to measure changes since 1950.

## **2.6 Population trend period<sup>2.4.7</sup>**

**1994 – 2006**

## **2.7 Reasons for reported trend in population<sup>2.4.8</sup>**

Not applicable

## **2.8 Justification of % thresholds for trends<sup>2.4.9</sup>**

Not applicable

## **2.9 Main pressures<sup>2.4.10</sup>**

**310 Peat extraction**

**312 Mechanical removal of peat**

**400 Urbanised areas, human habitation**

**803 Infilling of ditches, dykes, ponds, pools, marshes or pits**

**853 Management of water levels**

**810 Drainage**

## **2.10 Threats<sup>2.4.11</sup>**

**310 Peat extraction**

**312 Mechanical removal of peat**

**400 Urbanised areas, human habitation**

**803 Infilling of ditches, dykes, ponds, pools, marshes or pits**

**853 Management of water levels**

**810 Drainage**

**952 Eutrophication**

**920 Drying out**

## **2.11 Favourable reference population<sup>2.7.2</sup>**

### **Unknown**

The trend and current population are Unknown. Since the species is widespread, the 1994 population was likely to have been equivalent to the favourable reference population (in accordance with Note 1 of 'Assessing Conservation Status: UK Approach'). However, this figure is Unknown.

## **2.12 Population conclusion<sup>2.8</sup>**

### **Unknown**

The only possible conclusion is Unknown given that the current extent, the trend, and the relationship with the favourable reference population are all Unknown. It may be Favourable.

## **3. Habitat for the Species in the Biogeographic Region or Sea<sup>2.5</sup>**

With such a large group of species, it is inevitable that there should be a fairly broad range of habitats. This list of habitats is taken from Hill *et al.* (1992, the habitat information remains valid despite changing taxonomy within the group): ombrotrophic bogs, raised bogs, blanket bogs, minerotrophic mires, slightly basic flush-bogs, open bogs, boggy moorland, wet woods, boggy grassland, ditches, flushed peaty banks, marshes, streamsides, well-illuminated bogs, swampy mineral-rich ground, carr, rushy stream-banks, beside ponds, permanently wet ground, boggy woodland, moist broad-leaved woodland, damp conifer plantations, flushed grassy and heather banks, woods, block-strewn mountain-sides, heathery slopes, wet heath, flushes on mountains, valley bogs, moist rock-ledges, dripping rocks, oligotrophic springs, bog-pools, lakes.

### **3.1 Surface area of habitat<sup>2.5.2</sup>**

#### **Unknown**

### **3.2 Date of estimation<sup>2.5.3</sup>**

#### **Not applicable**

### **3.3 Quality of data on habitat area<sup>2.5.4</sup>**

#### **Poor**

Habitats within protected areas have been relatively well monitored and documented. However, survey effort outside these boundaries is relatively poor.

### **3.4 Habitat trend<sup>2.5.5</sup>**

#### **Decreasing**

*Sphagnum* is found across such a diversity of habitats, and it would be difficult to report a trend that was applicable to all. However, many wetland areas have suffered from declines in both area and quality as a result of hydrological changes (often resulting from changes in land use and urban development) and pollution incidents. Increased protection of wetland areas probably means that this decline has slowed although it does still continue.

### **3.5 Habitat trend period<sup>2.5.6</sup>**

#### **1994 – 2006**

### **3.6 Reasons for reported trend in habitat<sup>2.5.7</sup>**

#### **3. Direct human influence (restoration, deterioration, destruction)**

Drainage of wetland areas resulting from changes in land-use.

### **3.7 Suitable habitat for the species (in km<sup>2</sup>)<sup>2.7.3</sup>**

Unknown

### **3.8 Habitat conclusion<sup>2.8</sup>**

#### **Unfavourable – Inadequate**

The area of available habitat seems sufficiently large to ensure the long term survival. However, the habitat is (or has recently) decreased in area, and the habitat quality may not be sufficient. Taking Common Standards Monitoring results for the ‘Wetlands’ habitat group suggests that only 54% of blanket bogs, 21% of lowland raised bogs, 46% of upland fens and marshes, and 38% of lowland fens and marshes are currently in Favourable condition. This suggests that the overall condition might be considered Unfavourable – Bad, but Unfavourable – Inadequate has been selected since it is difficult to relate the habitat condition to the long-term prospects.

### **4. Future Prospects<sup>2.6</sup>**

#### **Good**

Species expected to survive and prosper.

The future prospects for range appears good unless climate change causes major shifts. The population has almost certainly declined more than the 10-km distribution suggests, however protection of wetland areas probably means that this decline has slowed, and prospects for habitat quality are reasonable.

### **4.1 Future prospects conclusion<sup>2.8</sup>**

#### **Favourable**

### **5. Overall Conclusion<sup>2.8</sup>**

#### **Unfavourable – Inadequate**

**Table 5.1.** Summary of conclusions

Parameter	Judgement	Grounds for Judgement (in accordance with Annex C)	Reliability*
<b>Range</b>	Unknown	No or insufficient reliable information available	N/A
<b>Population</b>	Unknown	No or insufficient reliable information available	N/A
<b>Habitat</b>	Unfavourable – Inadequate	Any other combination The quality of some of the habitats in which these species occur is deteriorating and some of the individual species may be at risk in part or even all of their range.	3
<b>Future Prospects</b>	Favourable	Main pressures and threats to the species not significant; species will remain viable on the long-term	2
<b>Overall Assessment</b>	Unfavourable – Inadequate	One Unfavourable – Inadequate but no Unfavourable – Bad	3

\*1=High, 2=Moderate, 3=Low

High – Expert opinion is that the concluding judgement accurately reflects the current situation based on a professional understanding of the species. For range, population, and habitat, quality of data used to establish the current estimate has been identified as good; data used to inform trends is comprehensive and up to date.

Moderate – A greater understanding of the feature, or the factors affecting it, is required before a confident concluding judgement can be made by experts. For range, population, and habitat, the current estimate and/or trend are based on recent, but incomplete or limited survey data; or alternately, a comprehensive, but outdated (pre-1994) review.

Low – Judgements, and comprising estimates, are based predominately on expert opinion.

N/A – Assessment conclusion is unknown, on the basis of insufficient reliable information

## 6. References

HILL, M. O., PRESTON, C. D. & SMITH A. J. E. 1992. *Atlas of the Bryophytes of Britain and Ireland; Volume 2, Mosses (Except Diplolepidae)*. Harley Books

WILLIAMS, J.M. (ed.) 2006. *Common Standards Monitoring For Designated Sites: First Six Year Report 2006*. Joint Nature Conservation Committee

### Map Data Source

Bryophyte data for Great Britain and Ireland, British Bryological Society (via the NBN Gateway)