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

Supporting documentation for the
conservation status assessment for the species:

S1400 - Large white-moss (*Leucobryum glaucum*)

ENGLAND

IMPORTANT NOTE - PLEASE READ

- The information in this document is a country-level contribution to 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.
- The 2019 Article 17 UK Approach document provides details on how this supporting information was used to produce the UK Report.
- The UK Report on the conservation status of this species is provided in a separate document.
- The reporting fields and options used are aligned to those set out in the European Commission guidance.
- Explanatory notes (where provided) by the country are included at the end. These provide an audit trail of relevant supporting information.
- 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; (iii) the field was not relevant to this species (section 12 Natura 2000 coverage for Annex II species) and/or (iv) the field was only relevant at UK-level (sections 9 Future prospects and 10 Conclusions).
- For technical reasons, the country-level future trends for Range, Population and Habitat for the species are only available in a separate spreadsheet that contains all the country-level supporting information.
- The country-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.

Report on the main results of the surveillance under Article 11 for Annex II, IV and V species (Annex B)

NATIONAL LEVEL

1. General information

1.1 Member State	**UK (England information only)**
1.2 Species code	**1400**
1.3 Species scientific name	**Leucobryum glaucum**
1.4 Alternative species scientific name	
1.5 Common name (in national language)	Large white-moss

2. Maps

2.1 Sensitive species	No
2.2 Year or period	2013-2018
2.3 Distribution map	Yes
2.4 Distribution map Method used	Based mainly on extrapolation from a limited amount of data
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

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.

5. Range

5.1 Surface area (km²)

5.2 Short-term trend Period

2007-2018

5.3 Short-term trend Direction

Uncertain (u)

5.4 Short-term trend Magnitude

a) Minimum

b) Maximum

5.5 Short-term trend Method used

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)
b) Operator
c) Unknown
d) Method

5.11 Change and reason for change in surface area of range

The change is mainly due to: Use of different method

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5.12 Additional information	Leucobryum glaucum was recorded in 66 10x10 km grid squares in this 2013-18 reporting round, compared to 300 (min) - 310 (max) 10x10 km grid squares in the 2007-12 reporting round. This decrease is however considered to be likely to be the result of differences in recorder coverage rather than a genuine change. The Atlas of British & Irish Bryophytes was published in 2014 (see Species Sources), and the years leading up to this were the focus of increased bryological recording effort to contribute to the Atlas before publication. It is thus considered that this is likely to be a major cause of the higher number of hectads in which Leucobryum glaucum was recorded in 2007-2012, and it is not considered that there is evidence of overall decline.

6. Population

6.1 Year or period	2013-2016	
6.2 Population size (in reporting unit)	a) Unit	number of map 1x1 km grid cells (grids1x1)
	b) Minimum	125
	c) Maximum	
	d) Best single value	
6.3 Type of estimate	Minimum	
6.4 Additional population size (using population unit other than reporting unit)	a) Unit	
	b) Minimum	
	c) Maximum	
	d) Best single value	
6.5 Type of estimate		
6.6 Population size Method used	Based mainly on extrapolation from a limited amount of data	
6.7 Short-term trend Period	2007-2016	
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 extrapolation from a limited amount of 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	
	b) Operator	
	c) Unknown	
	d) Method	

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6.16 Change and reason for change in population size	The change is mainly due to:	Use of different method
6.17 Additional information		

7. Habitat for the species

7.1 Sufficiency of area and quality of occupied habitat	a) Are area and quality of occupied habitat sufficient (to maintain the species at FCS)?	Yes
	b) Is there a sufficiently large area of occupied AND unoccupied habitat of suitable quality (to maintain the species at FCS)?	Yes
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)	M
Mixed source air pollution, air-borne pollutants (J03)	M
Problematic native species (I04)	M

Threat	Ranking
Extensive grazing or undergrazing by livestock (A10)	M
Mixed source air pollution, air-borne pollutants (J03)	M
Problematic native species (I04)	M

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, but none yet taken
9.2 Main purpose of the measures taken	Maintain the current range, population and/or habitat for the species	

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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	

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

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

Reduce/eliminate air pollution from agricultural activities (CA12)

9.6 Additional information

10. Future prospects

10.1 Future prospects of parameters	a) Range b) Population c) Habitat of the species
10.2 Additional information	

11. Conclusions

11.1. Range	
11.2. Population	
11.3. Habitat for the species	
11.4. Future prospects	
11.5 Overall assessment of Conservation Status	
11.6 Overall trend in Conservation Status	
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	

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 b) Minimum c) Maximum d) Best single value
12.2 Type of estimate	

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12.3 Population size inside the network Method used

12.4 Short-term trend of population size within the network Direction

12.5 Short-term trend of population size within the network Method used

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

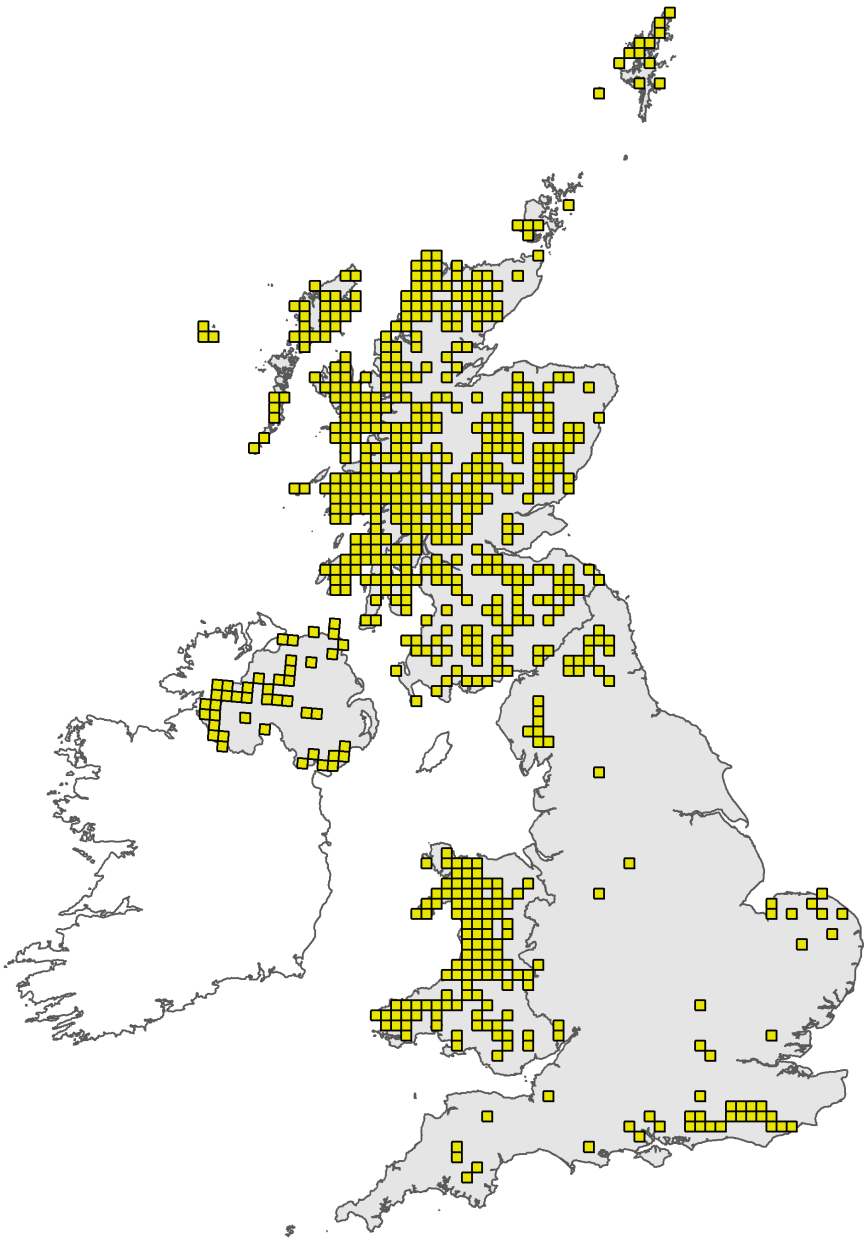

Figure 1: UK distribution map for S1400 - Large white-moss (*Leucobryum glaucum*). Coastline boundary derived from the Oil and Gas Authority's OGA and Lloyd's Register SNS Regional Geological Maps (Open Source). Open Government Licence v3 (OGL). Contains data © 2017 Oil and Gas Authority.

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

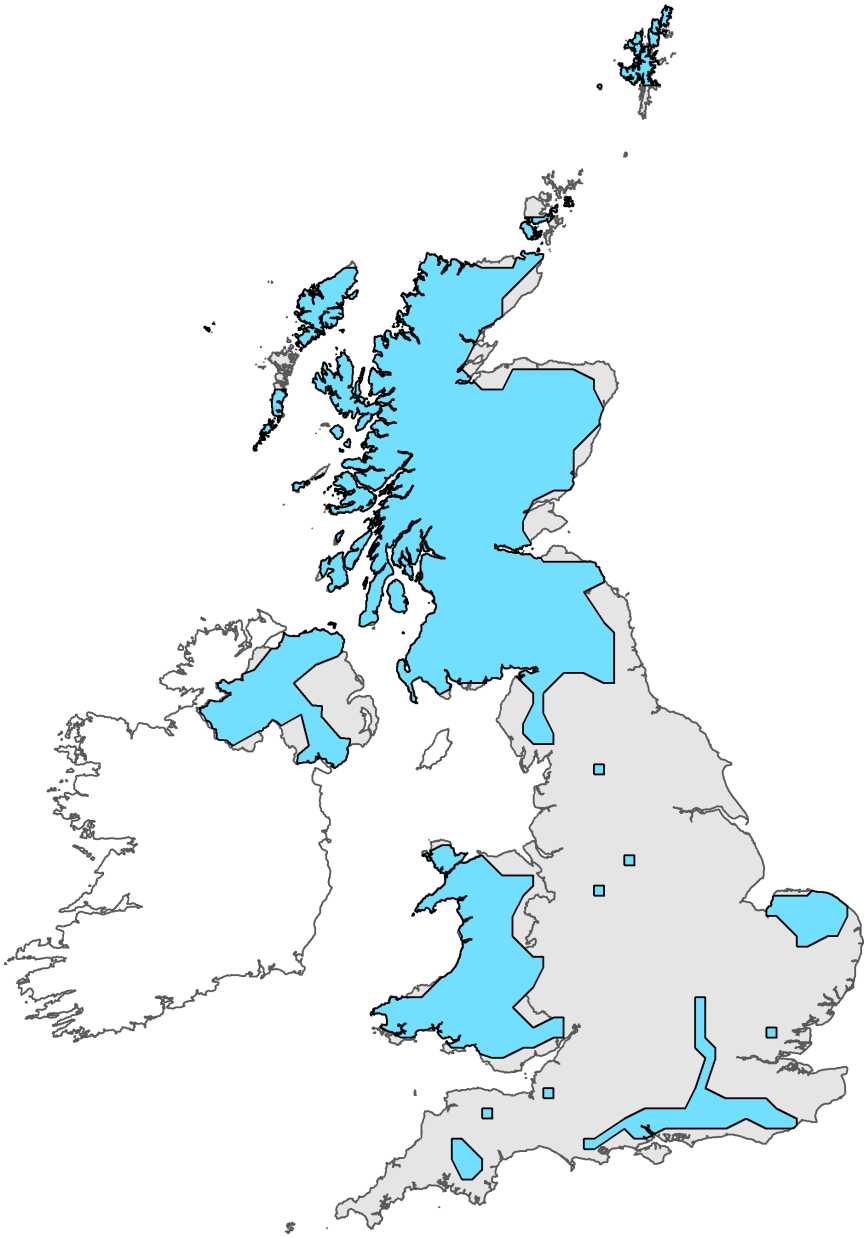

Figure 2: UK range map for S1400 - Large white-moss (*Leucobryum glaucum*). Coastline boundary derived from the Oil and Gas Authority's OGA and Lloyd's Register SNS Regional Geological Maps (Open Source). Open Government Licence v3 (OGL). Contains data © 2017 Oil and Gas Authority.

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.

Explanatory Notes

Species name: Leucobryum glaucum (1400)

Field label	Note
2.1 Sensitive species	The species is not considered to be at risk from collecting, hence not sensitive.
2.2 Year or Period	Species records from 2013, 2014, 2015 & 2016 have been used for this reporting round.
2.3 Distribution map	10 x 10 km grid map, produced by Natural England.
2.4 Distribution map; Method used	Records of Leucobryum glaucum on the British Bryological Society database.
3.1 Is the species take in the wild/ exploited	Expert opinion is that the species may possibly be occasionally taken in the wild, but not at a scale large enough to be classified as exploitation.

Species name: Leucobryum glaucum (1400) Region code: ATL

Field label	Note
5.2 Short term trend; Period	This trend covers the years 2007 to 2018.
5.3 Short term trend; Direction	Leucobryum glaucum was recorded in 66 10x10 km grid squares in this 2013-18 reporting round, compared to 300 (min) - 310 (max) 10x10 km grid squares in the 2007-12 reporting round. This decrease is however considered to be likely to be the result of differences in recorder coverage rather than a genuine change. The Atlas of British & Irish Bryophytes was published in 2014 (see Species Sources), and the years leading up to this were the focus of increased bryological recording effort to contribute to the Atlas before publication. It is thus considered that this is likely to be a major cause of the higher number of hectads in which Leucobryum glaucum was recorded in 2007-2012, and it is not considered that there is evidence of overall decline.
5.11 Change and reason for change in surface area of range	As mentioned in 5.3 above, it is not considered that there is evidence of overall decline.
6.1 Year or Period	2013-2018, with species records made in 2013, 2014, 2015 & 2016.
6.2 Population size	A total of 125 1x1 km grid squares were recorded as supporting Leucobryum glaucum in England in the 2013-18 reporting round, with records from 2013, 2014, 2015 & 2016. This total of 125 grid squares is a minimum, as it will have been under-recorded to some extent thus the true figure would almost certainly be higher.
6.6 Population size; Method used	Species records in BBS database.
6.7 Short term trend; Period	2007 to 2016 (there are no records for the species on the BBS database in 2017 and 2018).
6.8 Short term trend; Direction	It is considered that the population is overall stable, without evidence of overall decline.
10.1 Future prospects of parameters	It is considered that there is currently no evidence to suggest that the population will show an overall decline within the timescale of the next reporting round.