

**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 habitat:

**H6410 - *Molinia* meadows on calcareous, peaty or
clayey-silt-laden soils (*Molinion caeruleae*)**

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 habitat, 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 habitat 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; and/or (iii) the field was only relevant at UK-level (sections 10 Future prospects and 11 Conclusions).
- For technical reasons, the country-level future trends for Range, Area covered by habitat and Structure and functions 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 17 for Annex I habitat types (Annex D)

NATIONAL LEVEL

1. General information

1.1 Member State	UK (England information only)
1.2 Habitat code	6410 - Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molin

2. Maps

2.1 Year or period	2013-2018
2.3 Distribution map	Yes
2.3 Distribution map Method used	Complete survey or a statistically robust estimate
2.4 Additional maps	No

BIOGEOGRAPHICAL LEVEL

3. Biogeographical and marine regions

3.1 Biogeographical or marine region where the habitat occurs	Atlantic (ATL)
3.2 Sources of information	<p>Hewins, E.J., Pinches, C., Arnold, J., Lush, M., Robertson, H. and Escott, S. 2005. The condition of lowland BAP priority grasslands: results from a sample survey of non-statutory stands in England. English Nature Research Reports 636. English Nature, Peterborough.</p> <p>Rodwell, J.S., Morgan, V., Jefferson, R.G. and Moss, D. 2007. The European context of British lowland grasslands. JNCC Report 394. Joint Nature Conservation Committee, Peterborough.</p> <p>Natural England and RSPB 2014 Climate Change Adaptation Manual: Evidence to support nature conservation in a changing climate. Natural England Commissioned Research Report no. 546.</p> <p>Tallowin, J.R.B., Mountford, J.O., Savage, J., Shaw, S.C., Wallace, H.L., Prosser, M.V. & Gowing, D.J.G. 2014. Fen-meadow, rush-pasture, mire and swamp communities: A review of knowledge gaps, restoration issues and their potential to deliver Ecosystem Services. Defra Commissioned Research Report, Project BD5103. Defra, London.</p> <p>Wheeler, B.D., Gowing, D.J.G., Shaw, S.C., Mountford J.O. & Money, R.P. 2004 Ecohydrological Guidelines for Lowland Wetland Plant Communities (ed. A.W. Brooks, P.V. Jos00e9 & M. I..Whiteman). Environment Agency - Anglian Region, Peterborough, UK.</p> <p>Stevens, C.J., Smart, S.M., Henrys, P.A., Maskell, L.C., Walker, K.J., Preston, C.D., Crowe, A., Rowe, E.C., Gowing, D.J. & Emmett, B.A. 2011. Collation of evidence of nitrogen impacts on vegetation in relation to UK biodiversity objectives. JNCC Report, No.447.</p> <p>Jefferson, R.G. 2017 H6410 Purple moor-grass meadow. Favourable Conservation Status Template: England contribution. Unpublished statement, Natural England, York.</p> <p>Interim year 1 results from Natural England sample survey of the condition of grassland Priority Habitats outside of designated sites (unpublished)</p> <p>Bullock, J.M., Jefferson, R.G., Blackstock, T.H., Pakeman, R. J., Emmett, B. A., Pywell, R. J., Grime, J. P. and Silvertown, J. W. 2011. Chapter 6: Semi-natural grasslands. In: The UK National Ecosystem Assessment Technical Report. UK National Ecosystem Assessment, UNEP-WCMC, Cambridge.</p> <p>JNCC reporting data for H6410 submitted to EU for the 2013 Article 17 reporting round.</p>

Report on the main results of the surveillance under Article 17 for Annex I habitat types (Annex D)

Wheeler, B. & Wilson, P. (2014) The effectiveness of Higher Level Stewardship for maintaining and restoring species-rich grasslands: a resurvey of a sample of grasslands under HLS options HK6 and HK7. LM0443. Report to Defra.
 Wheeler, B. R. & Wilson, P.J. (2018) Interim Progress Report to Natural England on Year 1 of 2: the 2017 field survey results. Re-survey of a sample of priority grasslands outside of SSSIs to determine impact and effectiveness of Environmental Stewardship agreements in delivering outcomes.

4. Range

4.1 Surface area (in km ²)			
4.2 Short-term trend Period			
4.3 Short-term trend Direction	Stable (0)		
4.4 Short-term trend Magnitude	a) Minimum	b) Maximum	
4.5 Short-term trend Method used			
4.6 Long-term trend Period			
4.7 Long-term trend Direction			
4.8 Long-term trend Magnitude	a) Minimum	b) Maximum	
4.9 Long-term trend Method used			
4.10 Favourable reference range	a) Area (km ²) b) Operator c) Unknown d) Method	No	
4.11 Change and reason for change in surface area of range	No change		
	The change is mainly due to:		
4.12 Additional information			

5. Area covered by habitat

5.1 Year or period	2013-2018		
5.2 Surface area (in km ²)	a) Minimum	b) Maximum	c) Best single value 25
5.3 Type of estimate	Best estimate		
5.4 Surface area Method used	Complete survey or a statistically robust estimate		
5.5 Short-term trend Period	2007-2018		
5.6 Short-term trend Direction	Decreasing (-)		
5.7 Short-term trend Magnitude	a) Minimum	b) Maximum	c) Confidence interval
5.8 Short-term trend Method used	Based mainly on extrapolation from a limited amount of data		
5.9 Long-term trend Period			
5.10 Long-term trend Direction			
5.11 Long-term trend Magnitude	a) Minimum	b) Maximum	c) Confidence interval
5.12 Long-term trend Method used			
5.13 Favourable reference area	a) Area (km ²) b) Operator c) Unknown d) Method	No	

Report on the main results of the surveillance under Article 17 for Annex I habitat types (Annex D)

5.14 Change and reason for change in surface area of range

No change
The change is mainly due to:

5.15 Additional information

6. Structure and functions

6.1 Condition of habitat

a) Area in good condition (km ²)	Minimum 3.8	Maximum 3.8
b) Area in not-good condition (km ²)	Minimum 3.9	Maximum 3.9
c) Area where condition is not known (km ²)	Minimum 17.3	Maximum 17.3

6.2 Condition of habitat Method used

Based mainly on extrapolation from a limited amount of data

6.3 Short-term trend of habitat area in good condition Period

2007-2018

6.4 Short-term trend of habitat area in good condition Direction

Stable (0)

6.5 Short-term trend of habitat area in good condition Method used

Based mainly on extrapolation from a limited amount of data

6.6 Typical species

Has the list of typical species changed in comparison to the previous reporting period? No

6.7 Typical species Method used

6.8 Additional information

The data in sections 6.1a to 6.1c is based on data on the Purple moor-grass rush pasture (PMGRP) Priority habitat of which H6410 is a subset. (PMGRP = NVC types M22-M26 & H6410 = NVC types M24 & M26 only). The figures show that there is an approximate 50% in good condition and 50% in not good condition in SSSIs. This contrasts with around 72% in good condition and 28% in not good condition for the specific habitat H6410 (M24 & M26) in SACs. Even if one was comparing like with like then one might expect the SACs to have a higher % area in good condition due to the fact they are likely to be prioritised for conservation action. There is a recorded 6320 ha of PMGRP outside of SSSIs of which c. 62% is under an A-E scheme agreement and 38% not under A-E agreement. Whilst presence of and A-E scheme agreement provides reassurance of grassland protection per se, internal scheme monitoring from a random sample of species rich grasslands in the main maintenance and restoration options indicate relatively modest improvements in condition for 25% of grasslands, with 64% showing no change and 11% declining (Wheeler & Wilson, 2014). Sub optimal performance of the scheme in improving grass condition was attributed to poor targeting of options in the early days of Higher Level Stewardship (the previous scheme) and a lack of tailored interventionist restoration techniques (i.e. green hay introduction, seed introduction) without which recovery is unlikely within a 10 year agreement term, particularly when sites are isolated and opportunity for positive indicator species to colonise is limited. A survey of 77 non-statutory grasslands PMGRP sites resurveyed in 2017 found an overall decline in their condition since 2002. The presence of an agri-environment scheme appeared to have made little difference to site condition, although a cluster of sites within a specific focal area for Culm grassland restoration (Devon & Cornwall) that had been managed under stewardship agreements throughout the duration of the 15 year period were found to have significantly better condition compared to the rest of the sample potentially demonstrating the value of highly tailored advice and continued support (Wheeler & Wilson, 2018). Interestingly Molinia

Report on the main results of the surveillance under Article 17 for Annex I habitat types (Annex D)

domintaed communities were found to be in better condition than those which are rush dominated. Note that the figures given in section 6.2 are based on data from the PMGRP Priority habitat - although this habitat type is broader in scope than H6410 (which is limited to NVC types M24 & M26), it is considered to be representative of its condition.

7. Main pressures and threats

7.1 Characterisation of pressures/threats

Pressure	Ranking
Conversion into agricultural land (excluding drainage and burning) (A01)	H
Abandonment of grassland management (e.g. cessation of grazing or mowing) (A06)	H
Extensive grazing or undergrazing by livestock (A10)	H
Burning for agriculture (A11)	M
Agricultural activities generating diffuse pollution to surface or ground waters (A26)	M
Active abstractions from groundwater, surface water or mixed water for agriculture (A30)	M
Drainage for use as agricultural land (A31)	H
Mixed source pollution to surface and ground waters (limnic and terrestrial) (J01)	M
Mixed source air pollution, air-borne pollutants (J03)	H
Droughts and decreases in precipitation due to climate change (N02)	M
Increases or changes in precipitation due to climate change (N03)	M

Threat	Ranking
Conversion into agricultural land (excluding drainage and burning) (A01)	M
Abandonment of grassland management (e.g. cessation of grazing or mowing) (A06)	H
Extensive grazing or undergrazing by livestock (A10)	H
Burning for agriculture (A11)	M
Agricultural activities generating diffuse pollution to surface or ground waters (A26)	M
Active abstractions from groundwater, surface water or mixed water for agriculture (A30)	M
Drainage for use as agricultural land (A31)	M
Mixed source pollution to surface and ground waters (limnic and terrestrial) (J01)	M
Mixed source air pollution, air-borne pollutants (J03)	H
Droughts and decreases in precipitation due to climate change (N02)	M

Report on the main results of the surveillance under Article 17 for Annex I habitat types (Annex D)

Increases or changes in precipitation due to climate change M
(N03)

7.2 Sources of information

7.3 Additional information

8. Conservation measures

8.1 Status of measures

a) Are measures needed? Yes

b) Indicate the status of measures Measures identified and taken

8.2 Main purpose of the measures taken

Maintain the current range, population and/or habitat for the species

8.3 Location of the measures taken

Both inside and outside Natura 2000

8.4 Response to the measures

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

8.5 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)

Adapt mowing, grazing and other equivalent agricultural activities (CA05)

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

Manage drainage and irrigation operations and infrastructures in agriculture (CA15)

Reduce impact of mixed source pollution (CJ01)

Adopt climate change mitigation measures (CN01)

Implement climate change adaptation measures (CN02)

8.6 Additional information

9. Future prospects

9.1 Future prospects of parameters

- a) Range
- b) Area
- c) Structure and functions

9.2 Additional information

10. Conclusions

10.1. Range

10.2. Area

10.3. Specific structure and functions (incl. typical species)

10.4. Future prospects

10.5 Overall assessment of Conservation Status

10.6 Overall trend in Conservation Status

Report on the main results of the surveillance under Article 17 for Annex I habitat types (Annex D)

10.7 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:

10.8 Additional information

11. Natura 2000 (pSCIs, SCIs, SACs) coverage for Annex I habitat types

11.1 Surface area of the habitat type inside the pSCIs, SCIs and SACs network (in km² in biogeographical/marine region)

a) Minimum

b) Maximum

c) Best single value 5.7

11.2 Type of estimate

Best estimate

11.3 Surface area of the habitat type inside the network Method used

Complete survey or a statistically robust estimate

11.4 Short-term trend of habitat area in good condition within the network Direction

Stable (0)

11.5 Short-term trend of habitat area in good condition within network Method used

Complete survey or a statistically robust estimate

11.6 Additional information

12. Complementary information

12.1 Justification of % thresholds for trends

12.2 Other relevant information

Distribution Map

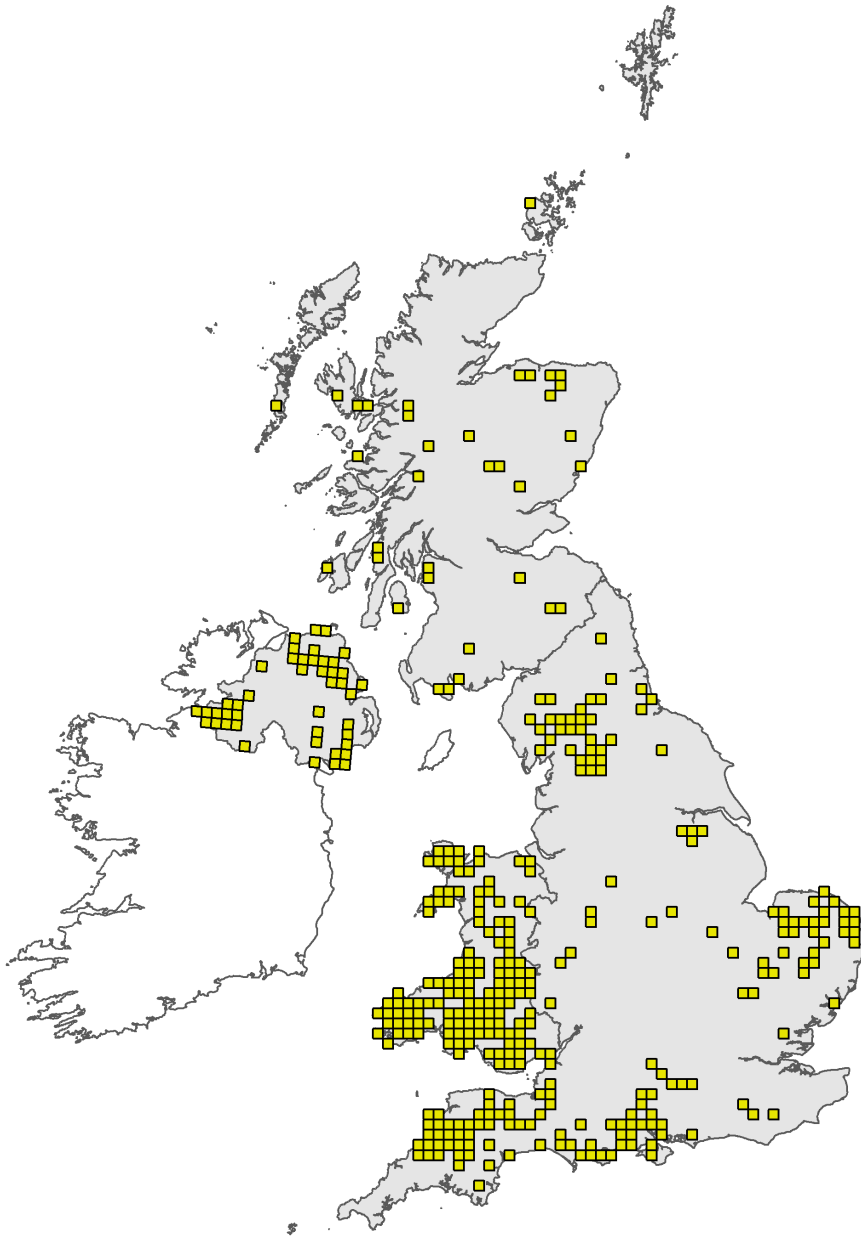


Figure 1: UK distribution map for H6410 - *Molinia* meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*). Coastline boundary derived from the Oil and Gas Authority's OGA and Lloyd's Register SNS Regional Geological Maps (Open Source). Open Government Licence v3 (OGL). Contains data © 2017 Oil and Gas Authority.

The 10km grid square distribution map is based on available habitat records which are considered to be representative of the distribution within the current reporting period. For further details see the 2019 Article17 UK Approach document.

Range Map

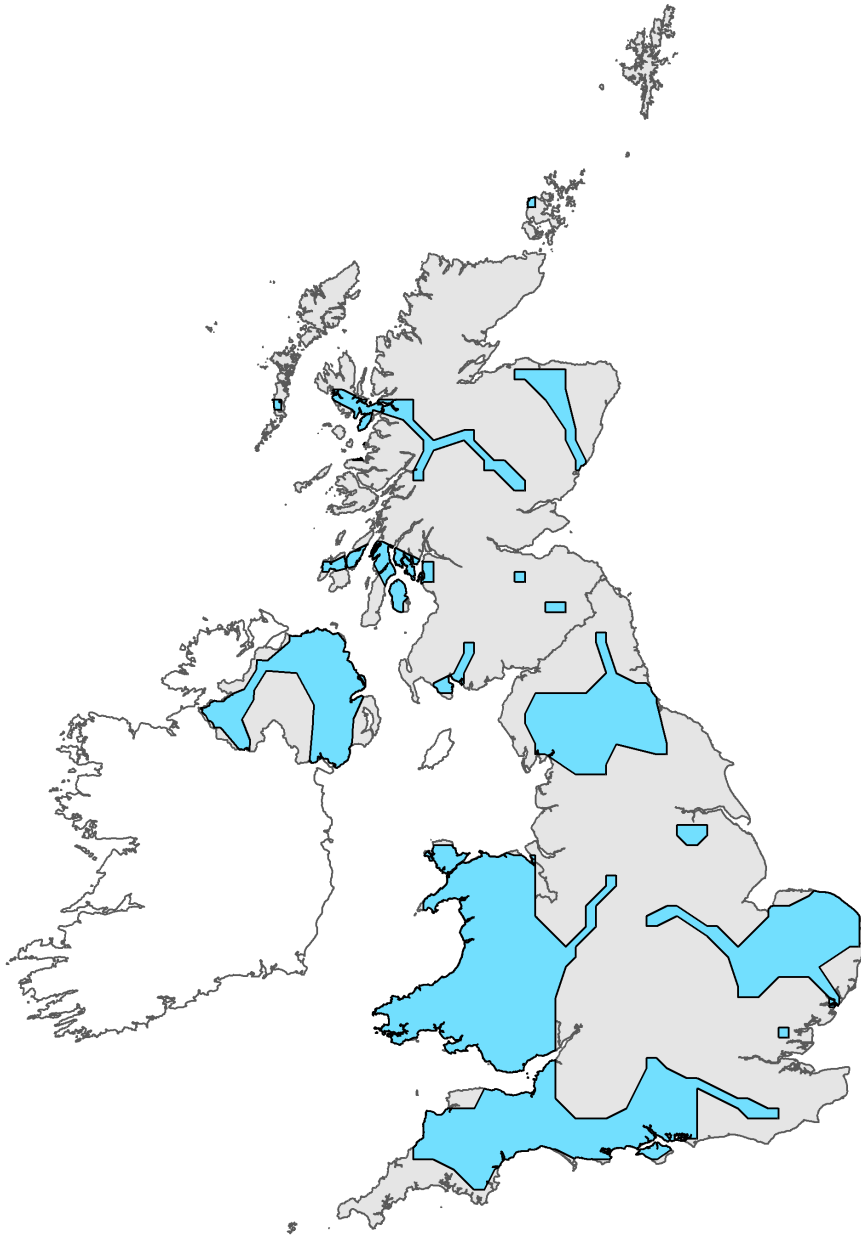


Figure 2: UK range map for H6410 - *Molinia* meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*). Coastline boundary derived from the Oil and Gas Authority's OGA and Lloyd's Register SNS Regional Geological Maps (Open Source). Open Government Licence v3 (OGL). Contains data © 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 habitat was 25km. For further details see the 2019 Article 17 UK Approach document.

Explanatory Notes

Habitat code: 6410 Region code: ATL

Field label	Note
3.2 Sources of information	<p>The data and information that underpin the assessments in sections 4-11 are drawn from a variety of sources including the sources listed in section 3.2 plus expert opinion and external intelligence. The figures in section 6.1 are drawn from data on statutory sites only (SSSIs including SACs) based on the Purple moor-grass rush pasture (PMGRP) Priority habitat of which H6410 is a subset. (PMGRP = NVC types M22-M26 & H6410 = NVC types M24 & M26 only). The data are not deemed to be fully representative of the resource as a whole (i.e including resource outside of SSSIs) - see also section 6.8 - additional information. There is currently no recent data on the resource outside of statutory sites. An England-level sample survey of non-statutory grasslands, is currently in progress. The interim findings have been used to provide commentary on the likely state of the purple moor grass and rush pasture resource outside of protected areas (see section 6.8 on structure and function). The short-term trend in area (5.7d) is recorded as decreasing but at <1% a year. This is based on expert judgement based on intelligence many gleaned from EIA cases and NE area team colleagues. Data on habitat area within N2K sites is taken from CMSi. In addition, the following sources have been used to populate the sections on range (4) and habitat area including trends (5), pressures and threats (7) and conservation measures (8): i) Published documents as listed in section 3.2 ii) Expert opinion and informal 'specialist intelligence' including that derived from casework iii) Data from the previous 2013 Article 17 reporting round iv) Wide scale and geographic and site-based survey and monitoring data as listed in section 3.2</p>