

**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

Conservation status assessment for the habitat:

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

UNITED KINGDOM

IMPORTANT NOTE - PLEASE READ

- The information in this document represents 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.
- It is based on supporting information provided by the geographically-relevant Statutory Nature Conservation Bodies, which is documented separately.
- The 2019 Article 17 UK Approach document provides details on how this supporting information contributed to the UK Report and the fields that were completed for each parameter.
- The reporting fields and options used are aligned to those set out in the European Commission guidance.
- Maps showing the distribution and range of the habitat are included (where available).
- Explanatory notes (where provided) are included at the end. These provide additional audit trail information to that included within the UK assessments. Further underpinning explanatory notes are available in the related country-level and/or UK offshore-level reports.
- Some of the reporting fields have been left blank because either: (i) there was insufficient information to complete the field; and/or (ii) completion of the field was not obligatory.
- The UK-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.

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NATIONAL LEVEL

1. General information

1.1 Member State	UK
1.2 Habitat code	6410 - <i>Molinia</i> meadows on calcareous, peaty or clayey-silt-laden soils (Molin)

2. Maps

2.1 Year or period	1986-2018
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>England</p> <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. Jose & 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</p>

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Scotland

basic data sources used for 2007, 2013 and 2018 reporting : SNH Lowland Grassland Database, containing data collected during NCC and SNH grassland surveys, 1986 - 2000, MacKintosh, J. 2005. Distribution and Extent of Unimproved Lowland Grassland National Vegetation Classification (NVC) Types in Scotland. Bot. J. Scotl. 56(2) 119-146, Dadds, N.J. and Averis, A.B.G. In press. Review of the extent and condition of lowland grassland Priority BAP habitats and Annex 1 habitats. Scottish Natural Heritage Commissioned Report. SCM data. 2019 areas based on HABMoS measurements with some additional expert interpretation

Wales

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Countryside Council for Wales. 2012. Interpretation of grassland Annex 1 habitats in Wales for 2013 Article 17 reporting. CCW HQ internal document.

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- Wilkinson, K. In prep. Gower Commons Molinia meadows SAC Monitoring Report and Performance Indicators Monitoring Round 2013 to 2018.
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4. Range

4.1 Surface area (in km ²)	77527.9		
4.2 Short-term trend Period	2007-2018		
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	Based mainly on extrapolation from a limited amount of data		
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)	77527.9	
	b) Operator		
	c) Unknown	No	
	d) Method	The FRR is approximately equal to the current range area. The FRR value has been updated to take account of improved information on the habitat range. The approach taken to set the FRR is explained in the 2007 and 2013 UK Article 17 habitat reports (see http://jncc.defra.gov.uk/page-4064 and http://jncc.defra.gov.uk/page-6563).	
4.11 Change and reason for change in surface area of range	Improved knowledge/more accurate data		
	The change is mainly due to: Improved knowledge/more accurate data		

4.12 Additional information

5. Area covered by habitat

5.1 Year or period	1983-2018		
5.2 Surface area (in km ²)	a) Minimum	b) Maximum	c) Best single value 66.286
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			

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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	Much more than (>>)	
	c) Unknown	No	
	d) Method	The FRA is more than 10% above the current area. An FRA operator has been used as it is not clear what the exact area of the FRA is. The approach taken to set the FRA is explained in the 2007 and 2013 UK Article 17 habitat reports (see http://jncc.defra.gov.uk/page-4064 and http://jncc.defra.gov.uk/page-6563).	
5.14 Change and reason for change in surface area of range	Improved knowledge/more accurate data		
	The change is mainly due to:	Improved knowledge/more accurate data	
5.15 Additional information	The short term trend direction is considered to be decreasing by 1%/yr or less, based on the rates of decline identified in Northern Ireland, England and Scotland.		

6. Structure and functions

6.1 Condition of habitat	a) Area in good condition (km ²)	Minimum 13.887	Maximum 13.887
	b) Area in not-good condition (km ²)	Minimum 5.9027	Maximum 5.9027
	c) Area where condition is not known (km ²)	Minimum 46.4963	Maximum 46.4963
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	2004-2018		
6.4 Short-term trend of habitat area in good condition Direction	Increasing (+)		
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			

7. Main pressures and threats

7.1 Characterisation of pressures/threats

Pressure	Ranking
Abandonment of grassland management (e.g. cessation of grazing or mowing) (A06)	H
Intensive grazing or overgrazing by livestock (A09)	M
Extensive grazing or undergrazing by livestock (A10)	M
Application of natural fertilisers on agricultural land (A19)	M
Agricultural activities generating air pollution (A27)	M
Drainage for use as agricultural land (A31)	H

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Conversion to forest from other land uses, or afforestation (excluding drainage) (B01)	M
Mixed source air pollution, air-borne pollutants (J03)	H
Droughts and decreases in precipitation due to climate change (N02)	M
Threat	Ranking
Conversion from one type of agricultural land use to another (excluding drainage and burning) (A02)	M
Abandonment of grassland management (e.g. cessation of grazing or mowing) (A06)	H
Intensive grazing or overgrazing by livestock (A09)	M
Extensive grazing or undergrazing by livestock (A10)	M
Agricultural activities generating air pollution (A27)	M
Drainage for use as agricultural land (A31)	M
Conversion to forest from other land uses, or afforestation (excluding drainage) (B01)	M
Drainage, land reclamation and conversion of wetlands, marshes, bogs, etc. to settlement or recreational areas (F26)	M
Mixed source air pollution, air-borne pollutants (J03)	H
Droughts and decreases in precipitation due to climate change (N02)	H

7.2 Sources of information

7.3 Additional information

J03: Mixed source air pollution, air-borne pollutants is ranked as a High ranked pressure and threat, due to the nutrient N critical load for the habitat being exceeded across >25% of the habitat area

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)

Reinstate appropriate agricultural practices to address abandonment, including mowing, grazing, burning or equivalent measures (CA04)

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

Manage the use of natural fertilisers and chemicals in agricultural (plant and animal) production (CA09)

Reduce/eliminate air pollution from agricultural activities (CA12)

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

Prevent conversion of (semi-) natural habitats into forests and of (semi-)natural forests into intensive forest plantation (CB01)

Reduce impact of mixed source pollution (CJ01)

Implement climate change adaptation measures (CN02)

8.6 Additional information

9. Future prospects

9.1 Future prospects of parameters

a) Range Good
b) Area Bad
c) Structure and functions Bad

9.2 Additional information

Future trend of Range is Overall stable; Future trend of Area is Negative - decreasing $\leq 1\%$ (one percent or less) per year on average; and Future trend of Structure and functions is Negative - slight/moderate deterioration. The Future prospects for Structure and functions takes into account that at least 25% of the habitat area is expected to be in unfavourable (not good) condition in c.2030 due to nutrient N critical load exceedance, unless measures are taken to reduce N deposition impacts.

10. Conclusions

10.1. Range

Favourable (FV)

10.2. Area

Unfavourable - Bad (U2)

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

Unfavourable - Bad (U2)

10.4. Future prospects

Unfavourable - Bad (U2)

10.5 Overall assessment of Conservation Status

Unfavourable - Bad (U2)

10.6 Overall trend in Conservation Status

Stable (=)

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

Genuine change

The change is mainly due to: Genuine change

10.8 Additional information

Conclusion on Range reached because: (i) the short-term trend direction in Range surface area is stable; and (ii) the current Range surface area is approximately equal to the Favourable Reference Range.
Conclusion on Area covered by habitat reached because: (i) the short-term trend direction in Area is decreasing by 1% per year or less; and (ii) the current Area is more than 10% below the Favourable Reference Area.
Conclusion on Structure and functions reached because habitat condition data indicates that more than 25% of the habitat is in unfavourable (not good) condition.
Conclusion on Future prospects reached because: (i) the Future prospects for

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Range are good; (ii) the Future prospects for Area covered by habitat are bad; and (iii) the Future prospects for Structure and functions are bad.
Overall assessment of Conservation Status is Unfavourable-bad because one or more of the conclusions is Unfavourable-bad.
Overall trend in Conservation Status is based on the combination of the short-term trends for Range - stable, Area covered by habitat - decreasing, and Structure and functions - increasing. If negative future trends for Area and Structure and functions are also taken into account, the Overall trend would be deteriorating.
The Overall trend in Conservation Status has changed between 2013 and 2019 because the Structure and functions trend has changed from decreasing to increasing.

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 km ² in biogeographical/marine region)	a) Minimum b) Maximum c) Best single value	10.732
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	Decreasing (-)	
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

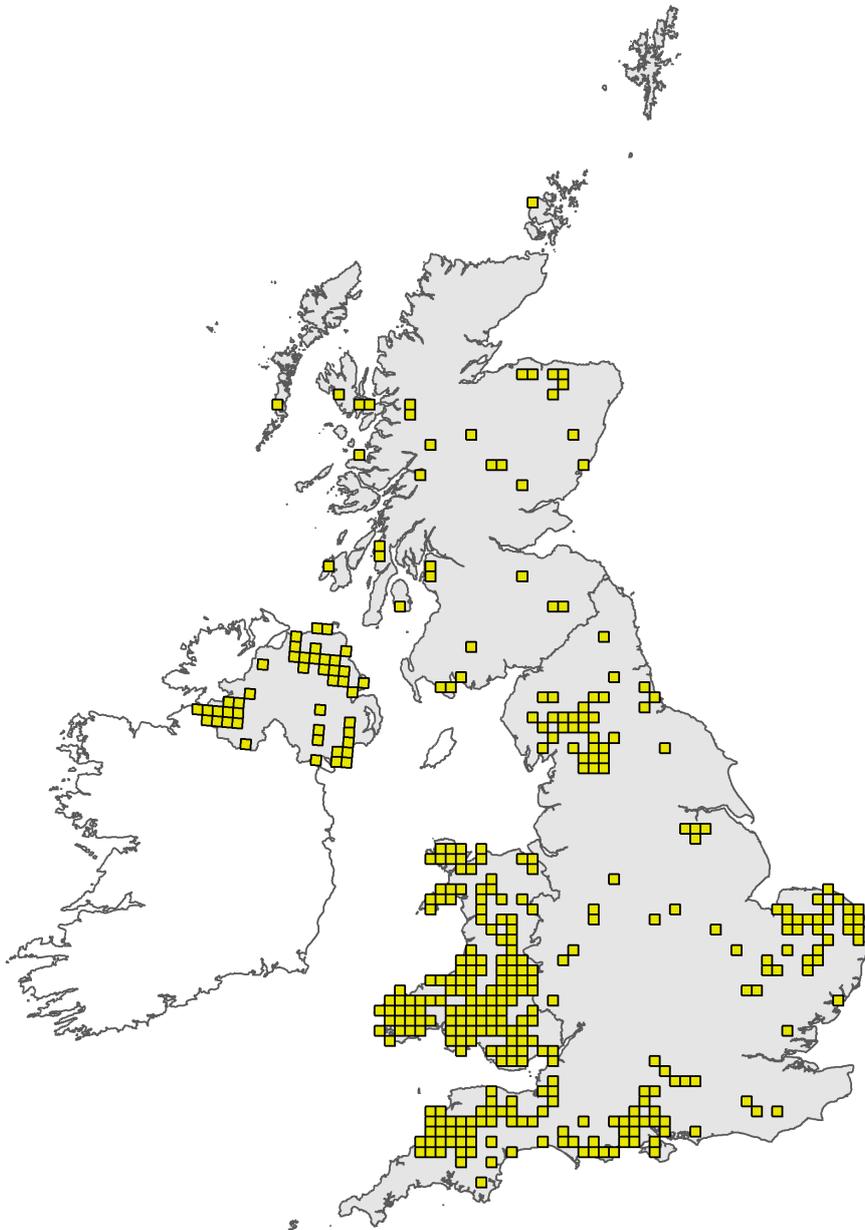


Figure 1: UK distribution map for H6410 - *Molinia* meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*). Coastline boundary derived from the Oil and Gas Authority's OGA and Lloyd's Register SNS Regional Geological Maps (Open Source). Open Government Licence v3 (OGL). Contains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

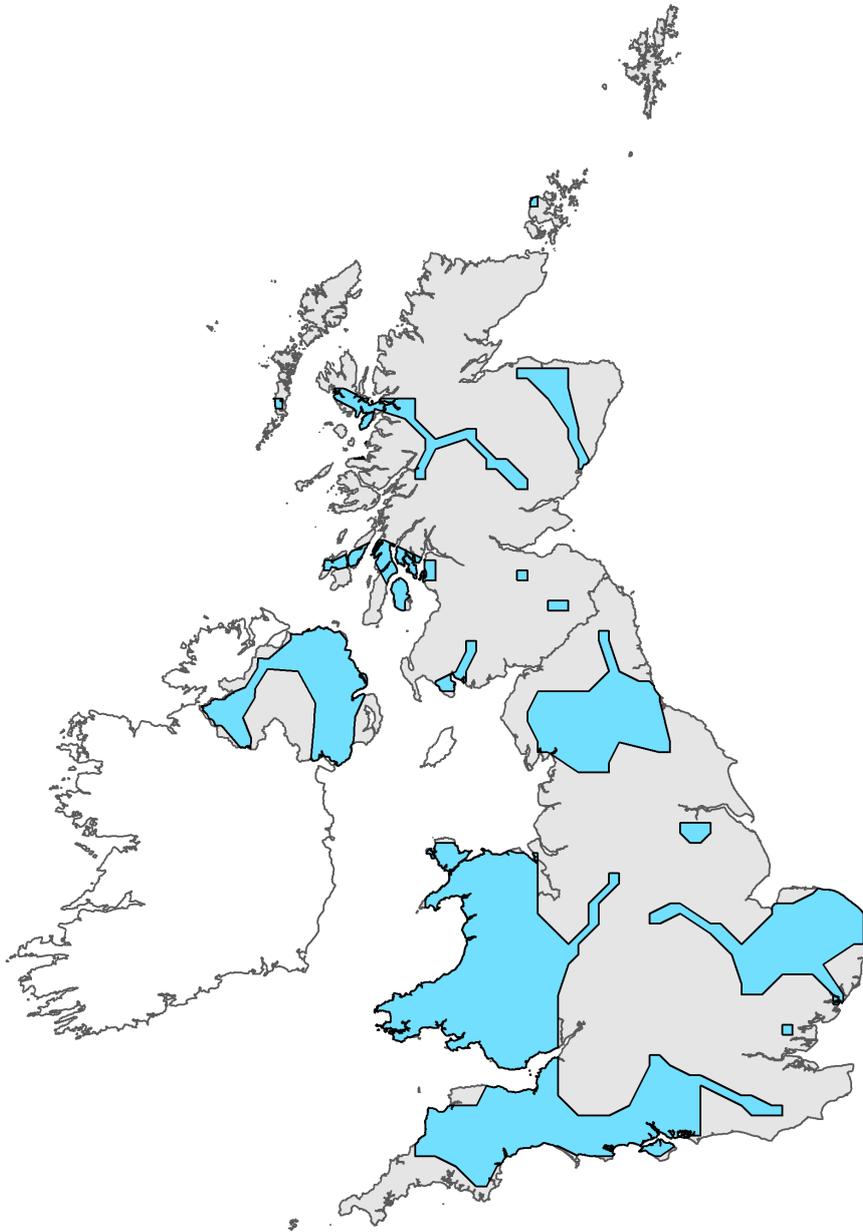


Figure 2: UK range map for H6410 - *Molinia* meadows on calcareous, peaty or clayey-silt-laden soils (*Molinia caeruleae*). Coastline boundary derived from the Oil and Gas Authority's OGA and Lloyd's Register SNS Regional Geological Maps (Open Source). Open Government Licence v3 (OGL). Contains data © 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.