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*)

SCOTLAND

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 (Scotland 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	1986-2011
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	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 condiition 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

4. Range

4.1 Surface area (in km²)		
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 (km²) b) Operator c) Unknown d) Method	 No
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	No reported loss of sites since 2013 when habitat was last reported on. New potential sites have however been identified through the HABMoS project and whilst not ground truthed for the purpose of this reporting they have been included.	

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5. Area covered by habitat

5.1 Year or period	1983-2017		
5.2 Surface area (in km²)	a) Minimum 0.29	b) Maximum 1.13	c) Best single value 1.13
5.3 Type of estimate	Best estimate		
5.4 Surface area Method used	Based mainly on extrapolation from a limited amount of data		
5.5 Short-term trend Period	2007-2018		
5.6 Short-term trend Direction	Decreasing (-)		
5.7 Short-term trend Magnitude	a) Minimum 0.01	b) Maximum	c) Confidence interval
5.8 Short-term trend Method used	Based mainly on expert opinion with very limited data		
5.9 Long-term trend Period	1993-2017		
5.10 Long-term trend Direction	Decreasing (-)		
5.11 Long-term trend Magnitude	a) Minimum 0.02	b) Maximum	c) Confidence interval
5.12 Long-term trend Method used	Based mainly on extrapolation from a limited amount of data		
5.13 Favourable reference area	a) Area (km²) b) Operator c) Unknown No d) Method		
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 current range is thought sufficient to maintain or restore this habitat over the next 50-100 years. Climate change is however a threat to the range due to changes in rainfall resulting in some areas becoming too wet and potentially becoming swamp or fen communities. 2013 reporting was based on survey of known sites. 2019 reporting is based on HABMoS figures which intern are based on a range of existing surveys from across Scotland. The existance of H6410 has not been verified for this reporting at these locations.		

6. Structure and functions

6.1 Condition of habitat	a) Area in good condition (km²)	Minimum 0.19	Maximum 0.19
	b) Area in not-good condition (km²)	Minimum 0.1	Maximum 0.1
	c) Area where condition is not known (km²)	Minimum 0.84	Maximum 0.84
6.2 Condition of habitat Method used	Based mainly on expert opinion with very limited data		
6.3 Short-term trend of habitat area in good condition Period	2013-2018		
6.4 Short-term trend of habitat area in good condition Direction	Decreasing (-)		
6.5 Short-term trend of habitat area in good condition Method used	Based mainly on expert opinion with very limited data		
6.6 Typical species	Has the list of typical species changed in comparison to the previous reporting period? No		

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6.7 Typical species Method used

6.8 Additional information

7. Main pressures and threats

7.1 Characterisation of pressures/threats

Pressure	Ranking
Droughts and decreases in precipitation due to climate change (N02)	M
Conversion to forest from other land uses, or afforestation (excluding drainage) (B01)	H
Application of synthetic (mineral) fertilisers on agricultural land (A20)	H
Abandonment of grassland management (e.g. cessation of grazing or mowing) (A06)	H
Problematic native species (I04)	H
Mixed source air pollution, air-borne pollutants (J03)	M

Threat	Ranking
Droughts and decreases in precipitation due to climate change (N02)	M
Conversion to forest from other land uses, or afforestation (excluding drainage) (B01)	H
Application of synthetic (mineral) fertilisers on agricultural land (A20)	H
Abandonment of grassland management (e.g. cessation of grazing or mowing) (A06)	H
Problematic native species (I04)	H
Mixed source air pollution, air-borne pollutants (J03)	M

7.2 Sources of information

7.3 Additional information

Climate change may impact upon this habitat through waterlogging or drought.
loss of other important grasslands due to afforestation reported
Increase in N through fertiliser application or N deposition may degrade this habitat.
SCM and Dadds et al data
bracken and gorse encroachment - SCM information

8. Conservation measures

8.1 Status of measures

a) Are measures needed? Yes

b) Indicate the status of measures Measures identified, but none yet taken

8.2 Main purpose of the measures taken: Restore the habitat of the species (related to 'Habitat for the species')

8.3 Location of the measures taken: Only 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

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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)
Management, control or eradication of other invasive alien species (CI03)
Prevent conversion of (semi-) natural habitats into forests and of (semi-)natural forests into intensive forest plantation (CB01)

8.6 Additional information	Pressures only assessed on the 10 SSSI sites where this habitat is a feature or a closely related habitat exists. Only 2 of the sites were reported as Unfavourable Declining and one as Unavourable no change and one as Favourable declining.. Gorse and bracken maangement along with undergrazing were the main pressures identified.

9. Future prospects

9.1 Future prospects of parameters	a) Range b) Area c) Structure and functions
9.2 Additional information	6 out of 10 sites that have been assessed are in favourable condition. 100% of sites recorded by Dadds & Averis in 2010 and 2011 were in favourable condition on the basis of reduced CSM thresholds Published by Hewins 2005. However, some of the key species of the habitat are declining. Nitrogen impact is assessed as medium for this habitat and therfore the trend will be negative.

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	
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

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11.1 Surface area of the habitat type inside the pSCIs, SCIs and SACs network (in km² in biogeographical/ marine region)	a) Minimum	0.07
	b) Maximum	0.07
	c) Best single value	0.07
11.2 Type of estimate		Best estimate
11.3 Surface area of the habitat type inside the network Method used		Based mainly on extrapolation from a limited amount of data
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		Habitat recorded in Taynish SAC only

12. Complementary information

12.1 Justification of % thresholds for trends	
12.2 Other relevant information	

Distribution Map

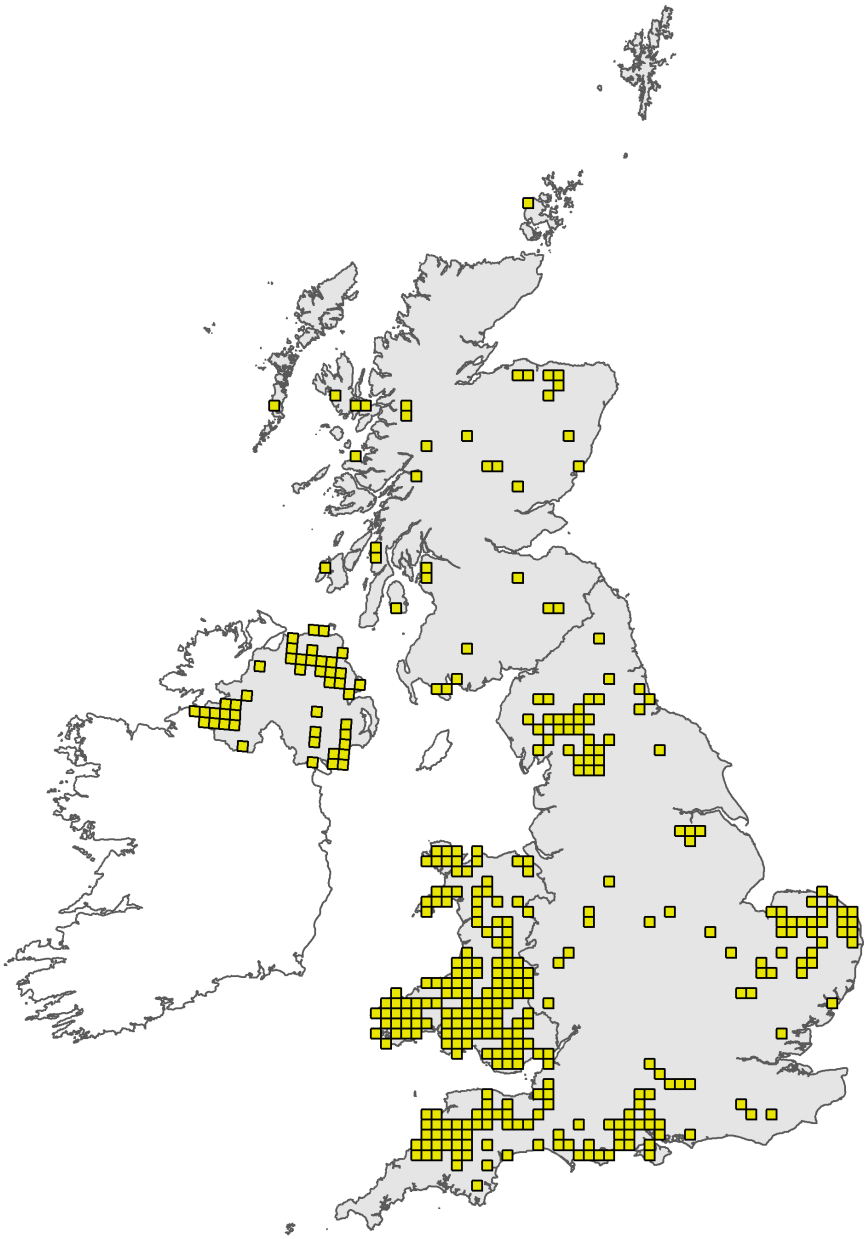

Figure 1: UK distribution map for H6410 - *Molinia* meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*). Coastline boundary derived from the Oil and Gas Authority's OGA and Lloyd's Register SNS Regional Geological Maps (Open Source). Open Government Licence v3 (OGL). Contains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

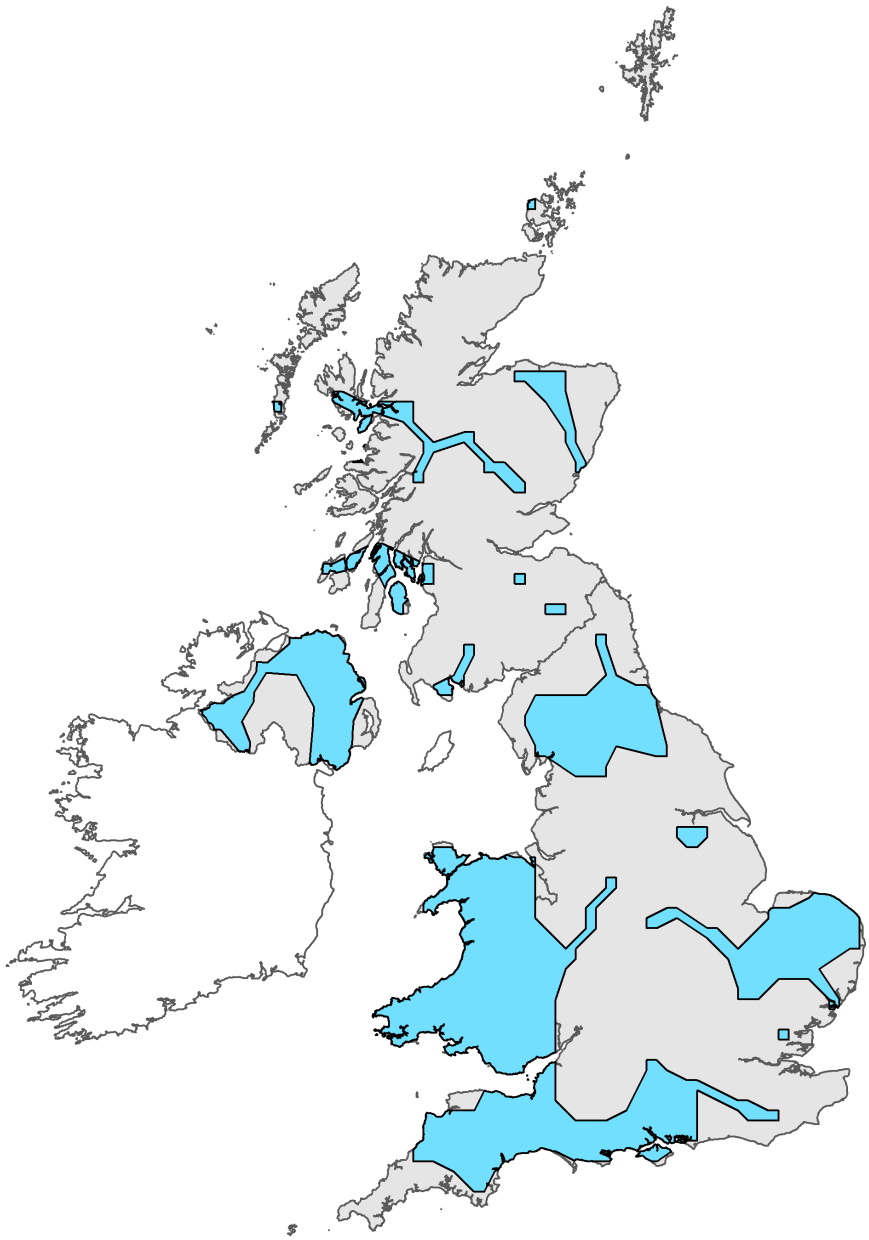

Figure 2: UK range map for H6410 - *Molinia* meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*). Coastline boundary derived from the Oil and Gas Authority's OGA and Lloyd's Register SNS Regional Geological Maps (Open Source). Open Government Licence v3 (OGL). Contains data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