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:

H6230 - Species-rich *Nardus* grassland, on siliceous substrates in mountain areas (and submountain areas in continental Europe)

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	**6230 - Species-rich Nardus grasslands, on siliceous substrates in mountain are**

2. Maps

2.1 Year or period	1962-2018
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	England

England
Jean Johnston personal communication to Alistair Crowle, November 2017. J. Johnston. 2013. Estimates of Extent of Species-rich Mountain Ledge Vegetation (NVC type U170 and Alpine Lady'smantle Grass Heath (NVC type CG11) in the Lake District. Natural England internal note. Joint Nature Conservation Committee. 2009. Common Standards Guidane for Apland Habitats. www.jncc.defra.gove.uk/page-2237
Holland, J, P. 2004?. Changes in the composition of a species-rich montane grassland following the removal of grazing livestock. Scottish Agricultural College report to SNH.
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Stevens, C. , Gowing, D. J. G. , Wotherspoon, K. A. , Alard, D. , Aarrestad, P. A. , Bleeker, A. , Bobbink, R. , Diekmann, M. , Dise, N. B. , Dupre, C. , Dorland, E. , Gaudnik, C. , Rottier, S. , Soons, M. & Corcket, E. 2011. Addressing the impact of atmospheric nitrogen deposition on European grasslands. In : Environmental Management. 48, 5, p. 885-894. 10 pp
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Scotland
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http://jncc.defra.gov.uk/pdf/Article17Consult_20131010/H6230_SCOTLAND.pdf
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Calcareous grassland (upland) feature type (JNCC, (2009), Common Standards Monitoring Guidance for Upland Habitats, Version July 2009 and previous versions) http://jncc.defra.gov.uk/page-2237
Wales
Blackstock T. H., Howe E. A., Stevens J. P., Burrows C. R. & Jones P. S. 2010. Habitats of Wales. A comprehensive field survey 1979-1997. University of Wales Press, Cardiff.
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Day, A. 1989. Upland vegetation survey 1979-1989. Background, methodology and summary of data collected. NCC report no. W91/2, Nature Conservancy Council, Bangor.

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Guest, D. 2012 (b). Assessing N deposition as a pressure for Article 17 reporting on habitats. CCW HQ internal document.

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Lewis. H. 2006. Eryri SAC: 6230 Species Rich Nardus Grassland, on siliceous substrates in mountain areas. SAC Monitoring report.

Natural England and RSPB, 2014. Climate Change Adaptation Manual.

Rodwell, J.S. (ed.). 1992. British plant communities. Volume 3. Grasslands and montane communities. Cambridge University Press, Cambridge.

Smith, S.L.N., Sutton, M.D. & Turner, A.J. In prep. An assessment of a selection of non-statutory priority grasslands in Wales. NRW Evidence Report.

Stevens J. & Smith S. 2012. H6230 Species-rich Nardus grassland, on siliceous substrates in mountain areas (and submountain areas in continental Europe): Wales GIS inventory. NRW HQ dataset. Updated 2017.

Stevens D. P., Smith S. L. N., Blackstock T. H., Bosanquet S. D. S. & Stevens J. P. 2010. Grasslands of Wales. A survey of lowland species-rich grasslands, 1987-2004. University of Wales Press, Cardiff.

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Stevens, C.J., Dise, N.B., Mountford, J.O. & Gowing, D.J. 2004. Impact of Nitrogen Deposition on the Species Richness of Grasslands. Science 303: 1876-1879.

Van Den Berg, L.J.L, Vergeer, P, Rich, T.C.G., Smart, S.M., Guest, D & Ashmore, M.R. 2011. Direct and indirect effects of nitrogen deposition on species composition change in calcareous grasslands. Global Change Biology 17: 1871-1883.

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Cooper, A., McCann, T. and Rogers, D. (2009) Northern Ireland Countryside Survey 2007: Broad Habitat Change 1998-2007. Northern Ireland Environment Agency. Research and Development Series No. 09/06. Web address; https://www.daera-ni.gov.uk/sites/default/files/publications/doe/natural-report-broad-habitat-change-1998-2007.pdf

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Internal discussion paper.
Environment and Heritage Service, Belfast. Northern Ireland Habitat Action Plan - Calcareous Grassland - March 2005
McCann, T., Rogers, D. and Cooper, A. (2009) Northern Ireland Countryside Survey 2007: Field methods and technical manual. Northern Ireland Environment Agency. Northern Ireland Environment Agency, Research and Development Series No 09/07. Belfast.
Murray, R., McCann, T. and Cooper, A. (1992). A Land Classification and Landscape Ecological Study of Northern Ireland. Department of the Environment NI and Department of Environmental Studies, University of Ulster, Coleraine.
NIEA. Internal Condition Assessment Reports (various sites and years).
Rodwell, J.S. (1992). British Plant Communities. Volume 3, Grasslands and Montane Communities. Cambridge: Cambridge University Press
Rodwell, J.S., Dring, J.C., Averis, A.B.V., Proctor, M.C.F., Malloch, A.J.C., Schaminee, J.H.J & Dargie, T.C.D. 1998. Review of Coverage of the National Vegetation Classification. Lancaster: Unit of Vegetation Science report to the Joint Nature Conservation Committee.

4. Range

4.1 Surface area (in km²)	68795.94	
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)	68795.94
	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	1962-2018		
5.2 Surface area (in km²)	a) Minimum	b) Maximum	c) Best single value 51.258
5.3 Type of estimate	Best estimate		
5.4 Surface area Method used	Based mainly on extrapolation from a limited amount of data		

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5.5 Short-term trend Period	2005-2018		
5.6 Short-term trend Direction	Stable (0)		
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 (km²)	51.488	
	b) Operator		
	c) Unknown	No	
	d) Method	The FRA is not more than 10% above the current area. The FRA value has been updated to take account of improved information on the habitat area. 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			

6. Structure and functions

6.1 Condition of habitat	a) Area in good condition (km²)	Minimum 5.36	Maximum 5.36
	b) Area in not-good condition (km²)	Minimum 42.367	Maximum 42.367
	c) Area where condition is not known (km²)	Minimum 3.551	Maximum 3.551
6.2 Condition of habitat Method used	Complete survey or a statistically robust estimate		
6.3 Short-term trend of habitat area in good condition Period	2002-2018		
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	Complete survey or a statistically robust estimate		
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)	M

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Intensive grazing or overgrazing by livestock (A09)	H
Application of synthetic (mineral) fertilisers on agricultural land (A20)	H
Conversion to forest from other land uses, or afforestation (excluding drainage) (B01)	M
Sports, tourism and leisure activities (F07)	M
Management of fishing stocks and game (G08)	H
Problematic native species (I04)	H
Mixed source air pollution, air-borne pollutants (J03)	H
Temperature changes (e.g. rise of temperature & extremes) due to climate change (N01)	M

Threat	Ranking
Abandonment of grassland management (e.g. cessation of grazing or mowing) (A06)	M
Intensive grazing or overgrazing by livestock (A09)	H
Application of synthetic (mineral) fertilisers on agricultural land (A20)	H
Conversion to forest from other land uses, or afforestation (excluding drainage) (B01)	M
Sports, tourism and leisure activities (F07)	M
Management of fishing stocks and game (G08)	M
Problematic native species (I04)	H
Mixed source air pollution, air-borne pollutants (J03)	H
Temperature changes (e.g. rise of temperature & extremes) due to climate change (N01)	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	Restore the habitat of the species (related to 'Habitat for the species')	
8.3 Location of the measures taken	Both inside and outside Natura 2000	
8.4 Response to the measures	Short-term results (within the current reporting period, 2013-2018)	
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)

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

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

Other measures related to agricultural practices (CA16)

Reduce impact of outdoor sports, leisure and recreational activities (CF03)

Management of hunting, recreational fishing and recreational or commercial harvesting or collection of plants (CG02)

Management of problematic native species (CI05)

8.6 Additional information

9. Future prospects

9.1 Future prospects of parameters	a) Range	Good
	b) Area	Poor
	c) Structure and functions	Bad
9.2 Additional information	Future trend of Range is Overall stable; Future trend of Area is Overall stable; and Future trend of Structure and functions is Very negative - important 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 - Inadequate (U1)
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	Improving (+)
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 stable; and (ii) the current Area is not 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)

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condition.

Conclusion on Future prospects reached because: (i) the Future prospects for Range are good; (ii) the Future prospects for Area covered by habitat are poor; 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 - stable, and Structure and functions - increasing. If the very negative future trend in Structure and functions is also taken into account, the Overall trend would be stable.

The Overall trend in Conservation Status has changed between 2013 and 2019 because the Area trend has changed from decreasing to stable, and 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 km² in biogeographical/ marine region)	a) Minimum b) Maximum c) Best single value 45.37
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	Increasing (+)
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

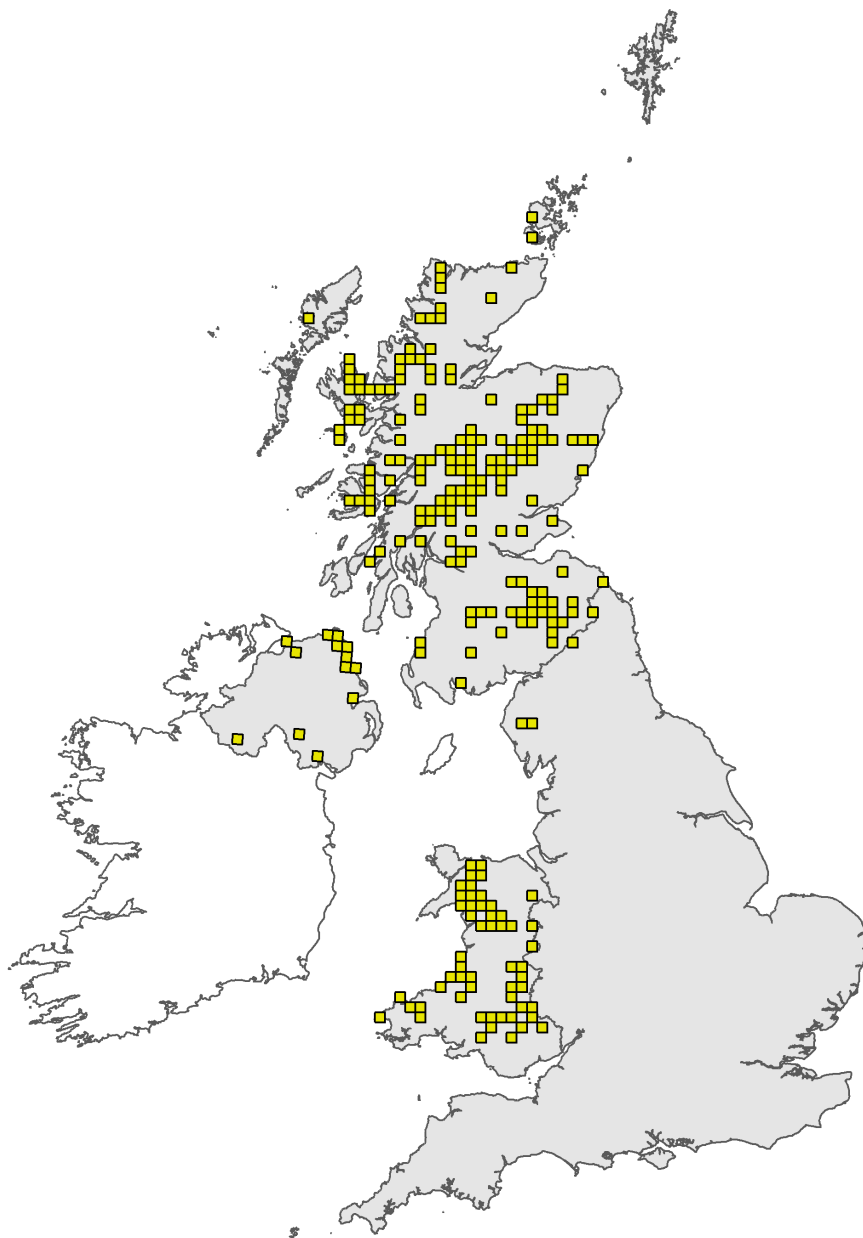|	
12.1 Justification of % thresholds for trends	
12.2 Other relevant information	

Distribution Map

Figure 1: UK distribution map for H6230 - Species-rich *Nardus* grassland, on siliceous substrates in mountain areas (and submountain areas in continental Europe). 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.
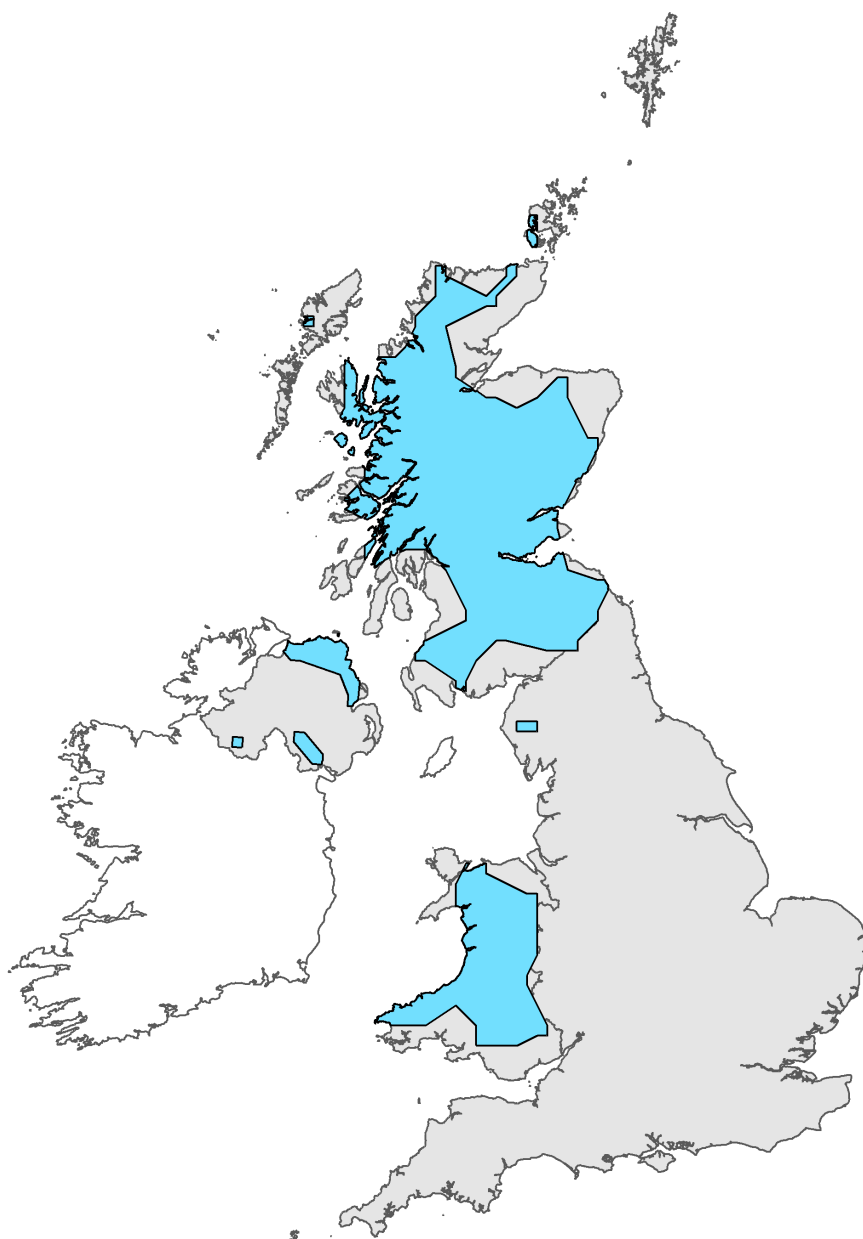
Range Map

Figure 2: UK range map for H6230 - Species-rich *Nardus* grassland, on siliceous substrates in mountain areas (and submountain areas in continental Europe). 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.