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:

H6210 - Semi-natural dry grasslands and scrubland facies: on calcareous substrates (*Festuco-Brometalia*)

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.

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**
1.2 Habitat code	**6210 - Semi-natural dry grasslands and scrubland facies on calcareous substra**

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	England Janssen, J.A.M. and 48 others 2016 European Red List of habitats. Part 2. Terrestrial and freshwater habitats. European Union, Luxembourg. 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. 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. 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. 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. JNCC reporting data for H6210 submitted to EU for the 2013 Article 17 reporting round. 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. Interim year 1 results from Natural England sample survey of the condition of grassland Priority Habitats outside of designated sites (unpublished) Stroh, P.A., Pescott, O.L. & Mountford, J.O. (2017) Long-term changes in lowland calcareous grassland plots using Tephroseris integrifolia subsp. Integrifolia as an indicator species. Plant Ecology Walker, K.J., Stroh, P.A. & Ellis, R.W. (2018) Threatened Plants of Britain and Ireland. Botanical Society of Britain and Ireland 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

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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.

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 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

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.

British Geological Survey. 2003. Digital geology data layer DiGMapGB250. BGS dataset.

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

Creer, J. & Harrison, T. 2009. Halkyn Mountain / Mynydd Helygain SAC. 6210: Semi-natural dry grasslands and scrubland facies: on calcareous substrates (Festuco-Brometalia). Draft SAC Monitoring report.

Creer, J. 2013a. Coedwigoedd Dyffryn Alyn / Alyn Valley Woods SAC UK 0030078. 6210: Semi-natural dry grasslands and scrubland facies: on calcareous substrates (Festuco-Brometalia) SAC Monitoring report.

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NRW. 2018. Briefing Note. Article 17, 2013-18: Pressures, threats and conservation measures guidance. Internal NRW document.

Ridding, L.E., Redhead, J.W. & Pywell, R.F. 2015. Fate of semi-natural grassland in England between 1960 and 2013: A test of national conservation policy. Global Ecology and Conservation 4: 516-525.

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montane communities. Cambridge University Press, Cambridge.

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.

Smith S. 2012. An assessment of a selection of lowland calcareous grasslands in Wales from site visits and aerial photography. CCW HQ internal document.

Smith, S., Birch, K., Bosanquet, S., Guest, D., Westwood, S. Wilkinson, K. & Woodman, J. 2017. A vegetation survey and conservation assessment of the Gower limestone coast SS58/1. NRW Evidence Report no. 188.

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, 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.

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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Sutton, M. 2012. Survey of Stackpole NNR grasslands, heaths, dunes and coast. Natural Resources Wales internal report.

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

Wilkinson, K. 2012. Limestone Coast of South West Wales SAC. Semi-natural dry grasslands and scrubland facies: on calcareous substrates (Festuco-Brometalia) (known as calcareous grassland). Six sections. SAC Monitoring reports

Wilkinson, K. 2014. Limestone Coast of South West Wales SAC UK (0014787). Feature code (6210): Semi-natural dry grasslands and scrubland facies: on calcareous substrates (Festuco-Brometalia). SAC Monitoring report

N.Ireland

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4. Range

4.1 Surface area (in km²)	128084.33	
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)	128084.33
	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 Use of different method	
	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 km²)	a) Minimum	b) Maximum	c) Best single value	513.2279

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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	Increasing (+)

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)	
	b) Operator	Approximately equal to (≈)
	c) Unknown	No
	d) Method	The FRA is approximately equal to 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 Use of different method	
	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 135.002	Maximum 135.812
	b) Area in not-good condition (km²)	Minimum 187.3486	Maximum 187.3486
	c) Area where condition is not known (km²)	Minimum 190.8791	Maximum 190.8791
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	2002-2018		
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 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	

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Pressure	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)	H
Extensive grazing or undergrazing by livestock (A10)	H
Application of synthetic (mineral) fertilisers on agricultural land (A20)	M
Use of plant protection chemicals in agriculture (A21)	M
Mixed source air pollution, air-borne pollutants (J03)	M
Natural succession resulting in species composition change (other than by direct changes of agricultural or forestry practices) (L02)	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 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)	H
Extensive grazing or undergrazing by livestock (A10)	H
Application of synthetic (mineral) fertilisers on agricultural land (A20)	M
Use of plant protection chemicals in agriculture (A21)	M
Mixed source air pollution, air-borne pollutants (J03)	M
Natural succession resulting in species composition change (other than by direct changes of agricultural or forestry practices) (L02)	H
Droughts and decreases in precipitation due to climate change (N02)	M
Increases or changes in precipitation due to climate change (N03)	M

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

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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)

Recreate Annex I agricultural habitats (CA07)

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

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	Good
	b) Area	Good
	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 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	Favourable (FV)
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
	No change

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	The change is mainly due to:
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 increasing; and (ii) the current Area is approximately equal to 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 Range are good; (ii) the Future prospects for Area covered by habitat are good; 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 - increasing, and Structure and functions - decreasing.

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 310.0336
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

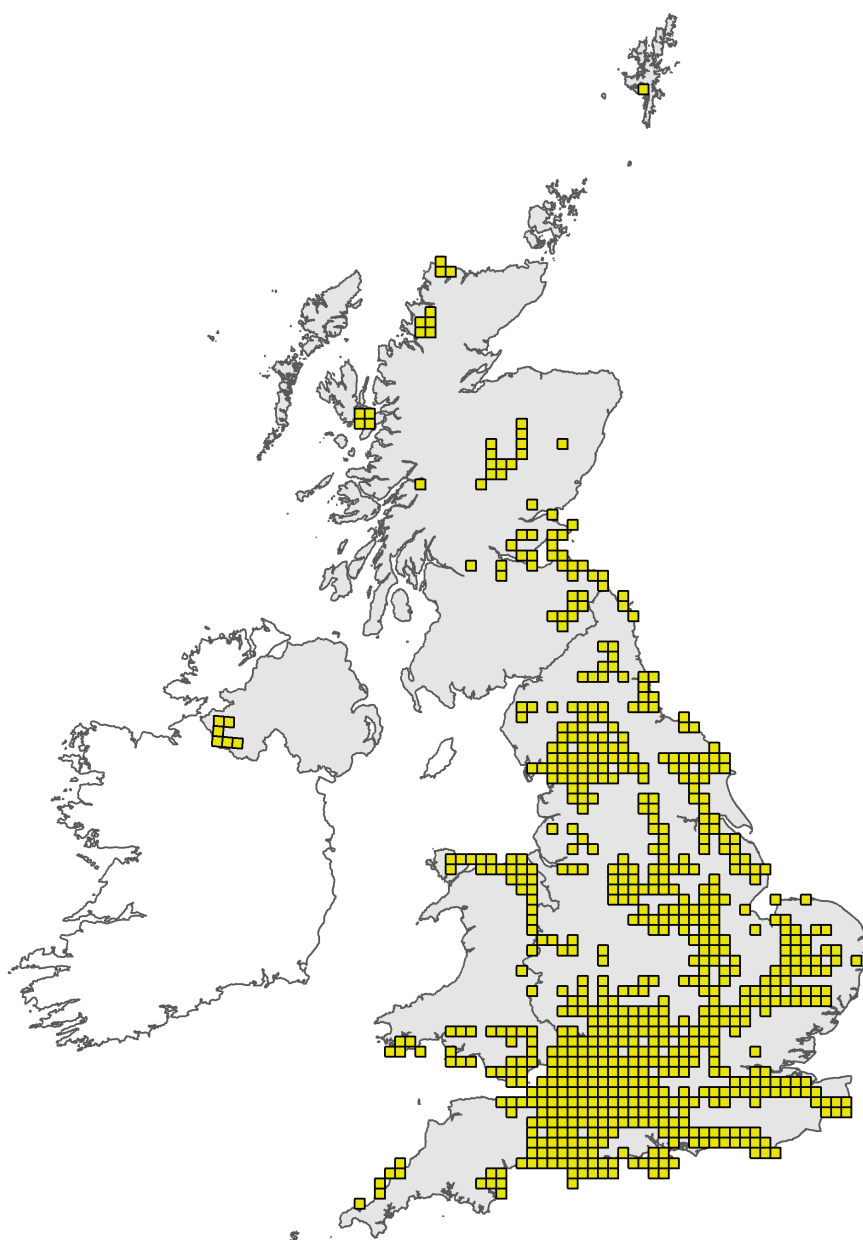|	
12.1 Justification of % thresholds for trends	
12.2 Other relevant information	

Distribution Map

Figure 1: UK distribution map for H6210 - Semi-natural dry grasslands and scrubland facies: on calcareous substrates (*Festuco-Brometalia*). 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.
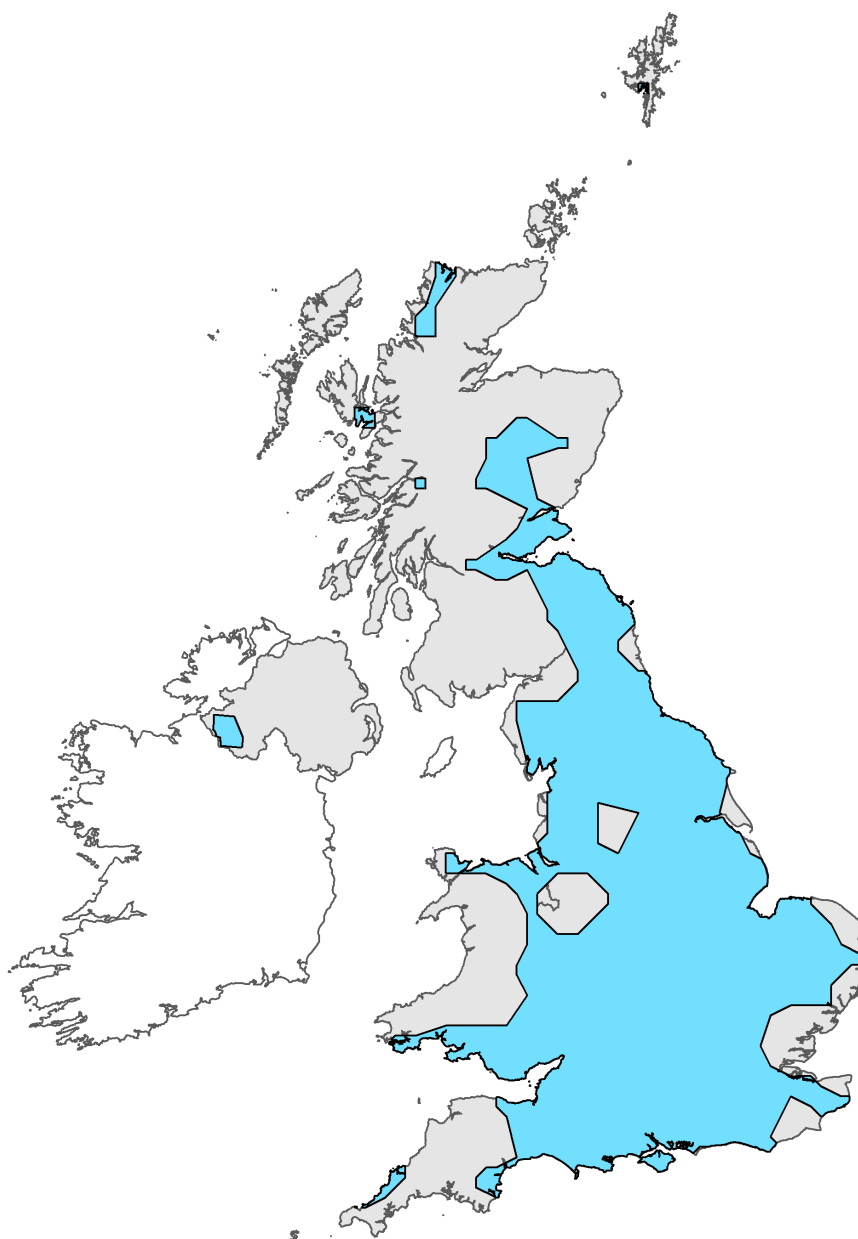
Range Map

Figure 2: UK range map for H6210 - Semi-natural dry grasslands and scrubland facies: on calcareous substrates (*Festuco-Brometalia*). 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.