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:

H8110 - Siliceous scree of the montane to snow levels
(*Androsacetalia alpinae* and *Galeopsietalia ladani*)

WALES

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 (Wales information only)**
1.2 Habitat code	**8110 - Siliceous scree of the montane to snow levels (Androsacetalia alpinae**

2. Maps

2.1 Year or period	1979-2012
2.3 Distribution map	Yes
2.3 Distribution map Method used	Based mainly on extrapolation from a limited amount of data
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	Burn A.M. (1982) Upland Vegetation Survey, Site Report No.5: NE Carneddau. Burn A.M. (1983) Upland Vegetation Survey, Site Report No.14: Moel Hebog. Burn A.M. (1987) Upland Vegetation Survey, Site Report No.35: Llantysilio Mountain. Burn A.M. (1989) Upland Vegetation Survey, Site Report No.23: Eryri (Glydeiriau, Carneddau, Y Wyddfa & Cwm Dwythch). Heaver D.J. & Burn A.M. (1989) Upland Vegetation Survey, Site Report No.39: Moel Siabod, Cnicht & the Moelwyns. Jackson P.K. (1987) Upland Vegetation Survey, Site Report No.29: Nantlle Ridge. Jackson P.K. (1987) Upland Vegetation Survey, Site Report No.37: Moel-y-Ci. Jackson P.K. (1988) Upland Vegetation Survey, Site Report No.45: Cefn Du. Jackson P.K. & Yeo M. (1991) Upland Vegetation Survey, Site Report No.38: Cadair Idris. Turner J.E.C. (1986) Upland Vegetation Survey, Site Report No.25: Mynydd Mawr. Turner J.C. & Burn A.M. (1986) Upland Vegetation Survey, Site Report No.24: The Berwyn NCR Site. Turner J.E.C. & Burn A.M. (1987) Upland Vegetation Survey, Site Report No.34: Ruabon Mountain & Eglwyseg Rocks. Yeo M. (1988) Upland Vegetation Survey, Site Report No.30: The Arans. Yeo M. (1988) Upland Vegetation Survey, Site Report No.43: Mynydd Ceiswyn-Craig Portas-Craig Maesglase area. Averis, A. 2001. Vegetation survey of selected proposed extensions to the Eryri SAC comprising parts of the Glyderiau and Carneddau SSSI, Gwynedd, Wales. CCW Science Report 448. Averis, A., 2002. Vegetation survey of the eastern part of the Carneddau SSSI and cSAC, Conwy, Summer 2001. CCW Science Report 535. Averis, B. and Averis, A., 2002. Vegetation survey of the western part of the Carneddau, Eryri Site of Special Scientific Interest and candidate Special Area of Conservation NW Wales 2002. CCW Science Report 577. Averis, B. 2002. Vegetation survey of parts of the Migneint-Dduallt area, North Wales 2001. CCW Science Report 533. Gray, D.A., 2002. NVC Survey of proposed extensions to Eryri cSAC (Glydeirau and Y Wyddfa). CCW Contract Science Report 517. Prosser M.V. & Wallace H.L. (1996) Cwm Idwal NNR : NVC Survey 1995. Turner,

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A. CCW, 1996-1998 Glyderiau (GIS data no report).
Joint Nature Conservation Committee. 2007. Second Report by the UK under Article 17 on the implementation of the Habitats Directive from January 2001 to December 2006. Peterborough: JNCC. Available from: http://jncc.defra.gov.uk/pdf/Article17/FCS2007-H8110-audit-Final.pdf [Accessed 10th May 2018]
NRW, 2013. Supporting documentation for the Third Report by the United Kingdom under Article 17 for Wales; H8110 - Siliceous scree of the montane to snow levels (Androsacetalia alpinae and Galeopsietalia ladani). JNCC. Available from: http://jncc.defra.gov.uk/pdf/Article17Consult_20131010/H8110_WALES.pdf [Accessed 10th May 2018]
Stevens, C.J., Smart, S.M., Henrys, P., Maskell, L.C., Walker, K.J., Preston, C.D., Crowe, A., Rowe, E., Gowing, D.J. and Emmett, B.A. 2011 Collation of evidence of nitrogen impacts on vegetation in relation to UK biodiversity objectives. JNCC Report 447.
Stevens, J., Sherry J. and A Turner. 2012. H8110 Siliceous Scree of the Montane to Snow Levels Inventory.
Wales Audit Office, 2012. Annual Improvement Report. Snowdonia National Park Authority.

4. Range

4.1 Surface area (in km²)			
4.2 Short-term trend Period			
4.3 Short-term trend Direction	Unknown (x)		
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 (km²) 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	1979-2012			
5.2 Surface area (in km²)	a) Minimum	b) Maximum	c) Best single value	3.17
5.3 Type of estimate	Minimum			
5.4 Surface area Method used	Based mainly on extrapolation from a limited amount of data			
5.5 Short-term trend Period	2001-2012			
5.6 Short-term trend Direction	Unknown (x)			
5.7 Short-term trend Magnitude	a) Minimum	b) Maximum	c) Confidence interval	

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5.8 Short-term trend Method used	Insufficient or no data available		
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 c) Unknown No d) Method		
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 (km²)	Minimum 0.21	Maximum 0.23
	b) Area in not-good condition (km²)	Minimum 1.95	Maximum 1.97
	c) Area where condition is not known (km²)	Minimum 0.99	Maximum 1.16
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	2007-2018		
6.4 Short-term trend of habitat area in good condition Direction	Unknown (x)		
6.5 Short-term trend of habitat area in good condition Method used	Insufficient or no data available		
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
Intensive grazing or overgrazing by livestock (A09)	H
Sports, tourism and leisure activities (F07)	H
Mixed source air pollution, air-borne pollutants (J03)	H

Threat	Ranking
Intensive grazing or overgrazing by livestock (A09)	H
Sports, tourism and leisure activities (F07)	H
Mixed source air pollution, air-borne pollutants (J03)	H
Problematic native species (I04)	M

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Change of habitat location, size, and / or quality due to climate change (N05)	M

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, but none yet taken

8.2 Main purpose of the measures taken

8.3 Location of the measures taken

8.4 Response to the measures

8.5 List of main conservation measures

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

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

DO NOT USE Management, control or eradication of other alien species (CI04)

Early detection and rapid eradication of invasive alien species of Union concern (CI01)

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

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:

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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	2.02
	b) Maximum	2.18
	c) Best single value	2.1
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		Based mainly on extrapolation from a limited amount of data
11.6 Additional information		

12. Complementary information

12.1 Justification of % thresholds for trends	
12.2 Other relevant information	

Distribution Map

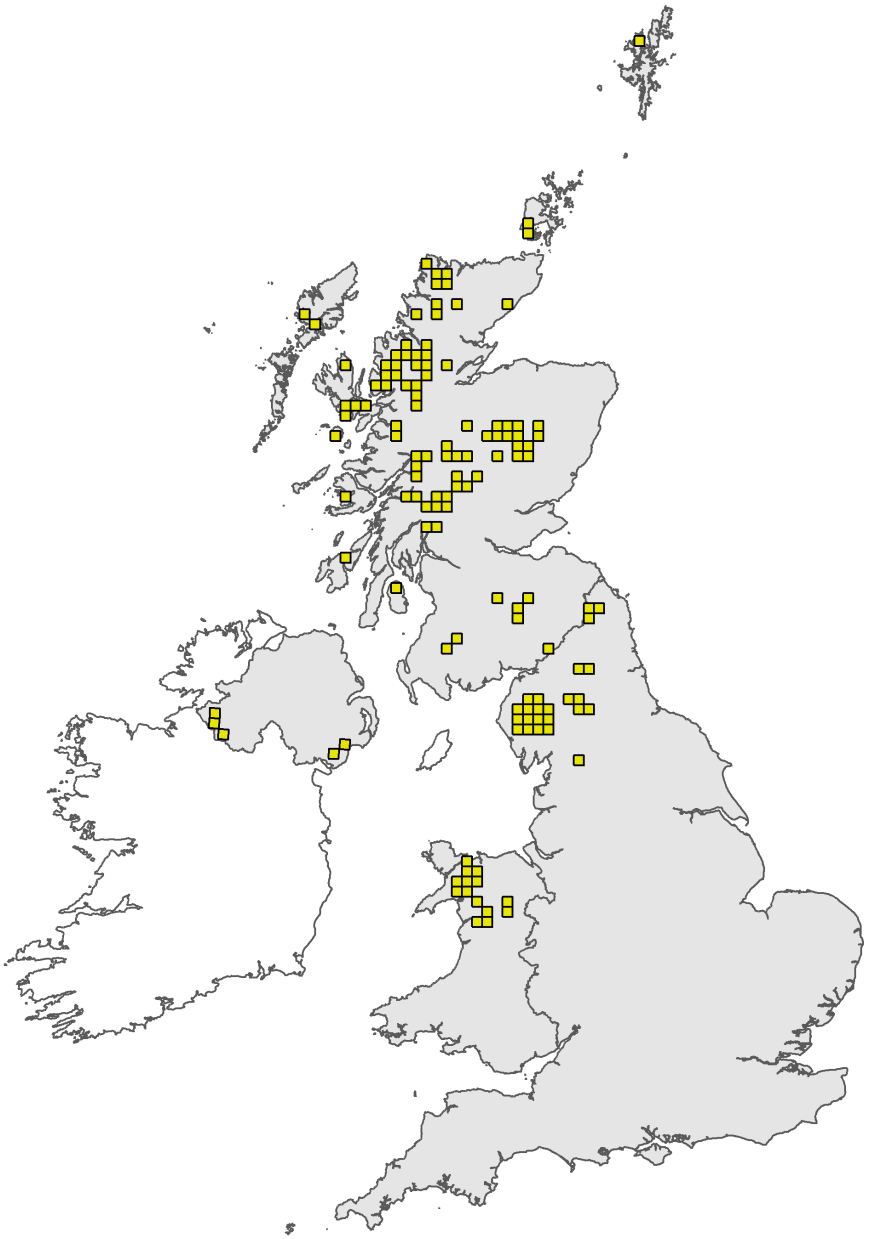

Figure 1: UK distribution map for H8110 - Siliceous scree of the montane to snow levels (*Androsacetalia alpinae* and *Galeopsietalia ladani*). Coastline boundary derived from the Oil and Gas Authority's OGA and Lloyd's Register SNS Regional Geological Maps (Open Source). Open Government Licence v3 (OGL). 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

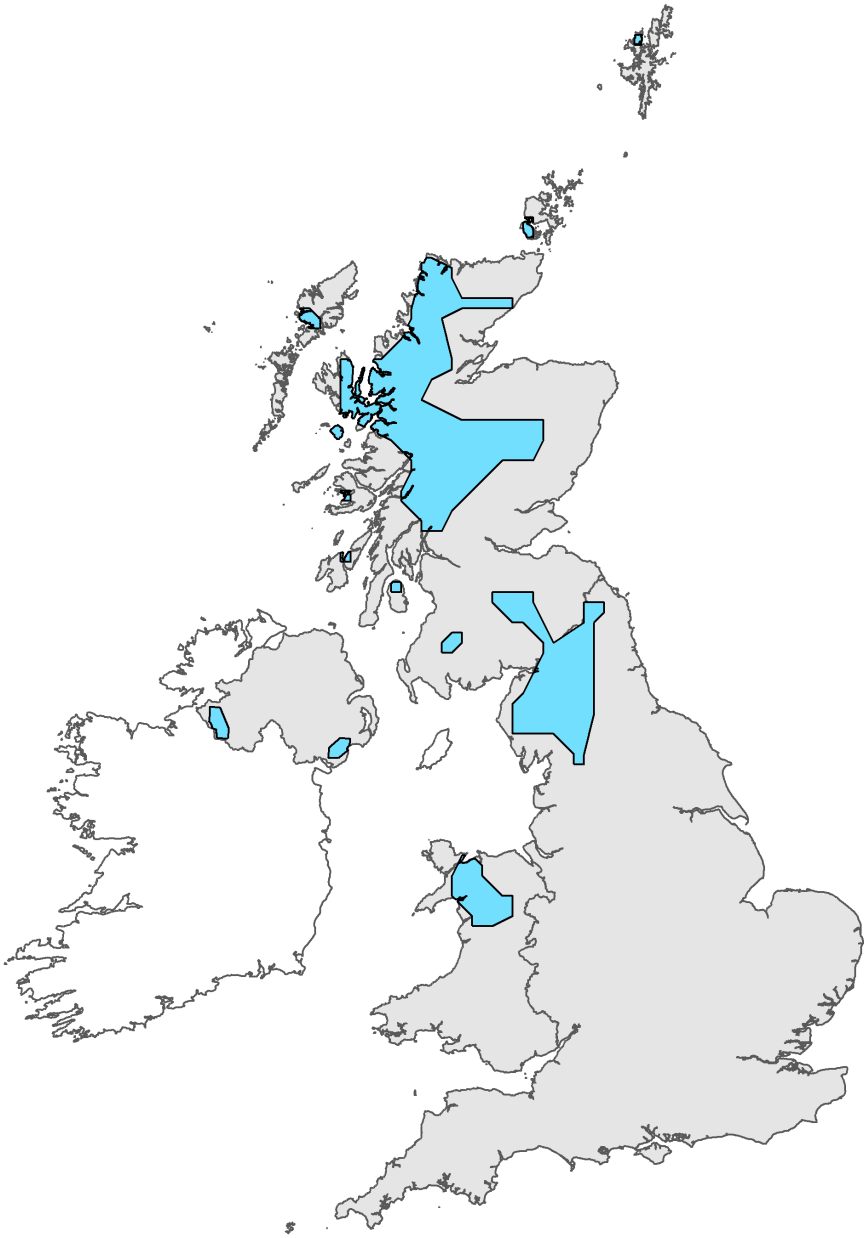

Figure 2: UK range map for H8110 - Siliceous scree of the montane to snow levels (*Androsacetalia alpinae* and *Galeopsietalia ladani*). Coastline boundary derived from the Oil and Gas Authority's OGA and Lloyd's Register SNS Regional Geological Maps (Open Source). Open Government Licence v3 (OGL). Contains 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: 8110

Field label	Note
2.1 Year or period	In 2013 NRW reported: 'There has been no survey work covering areas of H8110 since 2007. All data were collected between 1979 and 2002 and re-interpreted in 2012 to produce a GIS Inventory. All the field data sources pre-date 2007. The continued presence of habitat has only been formally reconfirmed on those sites which have been visited as part of the 2007-2012 SAC monitoring cycle.'
2.3 Distribution map; Method used	H8110 habitat has been mapped where Cryptogramma crispa vegetation is found within siliceous scree above the limit of agricultural enclosure. Its distribution has been derived from two data sources; the Wales Field Unit Upland Vegetation Surveys between 1979 and 1989 (see published sources) and a series of Upland NVC surveys between 1996 and 2002 (see published sources). The Birks and Ratcliffe D2a Cryptogramma crispa community was selected from the Wales Field Unit Survey and the U21 Cryptogramma crispa - Deschampsia flexuosa community was selected from the NVC surveys. The data collated are a mixture of polygon and point records. A revised GIS-based inventory for the habitat was produced using both of these data sources (Stevens, Sherry and Turner 2012). This is considered only a partial data set and further work is required to confirm the location and extent of the habitat. The methodology used may exclude some lichen/bryophyte rich scree which corresponds with the Annex 1 habitat, but there is insufficient data to locate such screes.

Habitat code: 8110 Region code: ATL

Field label	Note
4.11 Change and reason for change in surface area of range	The distribution data submitted in 2013 has not been updated. Changes in surface area or range may actually have occurred since the last reporting period, but NRW has no system in place for monitoring or recording such changes.
5.1 Year or period	All data were collected between 1979 and 2002 and re-interpreted in 2012 to produce a GIS Inventory. All the field data sources pre-date 2007. The continued presence of habitat has only been formally reconfirmed on those sites which have been visited as part of the 2007-2012 SAC monitoring cycle.
5.2 Surface area	A figure of 291.09ha has been calculated from polygon data. A further 41 points are recorded covering an estimated 25.42ha based on mean patch size (0.62ha) giving a total of 316.51ha. The methodology used may exclude some lichen/bryophyte rich scree which corresponds with the Annex 1 habitat. An estimate of 3,000ha of scree was given in 2007, this was calculated from the total figure for acid/neutral scree in Phase 1(Blackstock et al 2010 but the habitat definition includes a wider range of scree and rock communities than that of the Annex 1 habitat). It is therefore estimated that there is a minimum of 316.51ha with a potential upper limit of 3,000ha. Note all measurements are made from vertical projections which will underestimate area.
5.4 Surface area; Method used	See narrative supplied in section 2.3
5.6 Short term trend; Direction	There is no quantitative evidence on which to assess changes in range or surface area over the short or long term.

6.1 Condition of habitat	Data on the extent of habitat in good and not good condition was derived from NRWs SAC monitoring programme. The condition of the habitat was assessed on the two SACs on which the habitat is a recognised (A-C grade) feature. Features assessed as being in favourable condition were considered to be entirely in 'good condition' and those assessed as being in unfavourable were considered to be in entirely in 'not good-condition'. In the absence of reliable estimates for the habitat on individual SACs the area figures provided in the N2K Standard Data Forms have been used to calculate approximate proportions of the total SAC resource on individual sites. These figures have then been scaled up to match the total estimated extent on SACs as provided in section 11.1. That figure is based on all occurrences of the habitat within the N2K series and not just the qualifying features; as such the total areas in known condition reported above may represent over estimates.
6.2 Condition of habitat; Method used	The assessment of structure and function within SACs is based on the results of common standards monitoring visits undertaken between 2007 and 2012. The habitat is a feature of two welsh SACs, Cadair Idris and Eryri, and was assessed as being in favourable condition on the former and unfavourable recovering on the later. These assessments are made at a whole feature level and it is likely that this will mask local variations in habitat quality and condition. Monitoring in Eryri suggests that much of the scree is in a relatively healthy state with little scrub or tree invasion; lichen, bryophytes and Cryptogramma crispa are present at all sample points and although there are signs of grazing some grasses and forbs such as Galium saxatile are in flower. However disturbance to scree from sheep, goats and people is evident in a number of areas.
6.5 Short term trend of habitat area in good condition; Method used	Repeat monitoring of the two SACs supporting this habitat has been undertaken once since the baseline assessment in 2005/6, with the most recent assessments in 2009 and 2012 respectively. The overall condition of both features remained unchanged between the two visits (although the feature on Eryri SAC was considered to be recovering in 2012). In the absence of any trend in the extent of good condition habitat within the SAC series and any data on the condition of the habitat outside the N2K sites it was not possible to identify an overall trend in the extent of good condition habitat.

7.1 Characterisation of pressures/ threats	Pressures: Three pressures were identified as have a high impact; * A09 Over-grazing - high grazing levels identified in units with siliceous scree, sheep may avoid scree but some grazing of Cryptogramma occurs on more accessible scree. Goat grazing is identified as a pressure on a number of units and they are more likely to access scree areas. Goats were recorded on the scree in Eryri during SAC monitoring. * F07 Outdoor sports and leisure activities - localised erosion on footpaths crossing scree (noted in SAC monitoring). * J03 Air Pollution - siliceous scree supports a range of fern, bryophytes and lichens. Whilst Cryptogramma crispa has been shown not to be particularly sensitive to N deposition, many upland lichens and bryophytes show either positive or negative response to increased nitrogen (Stevens et al 2011). * IO4 problematic native species is assessed as a low pressure and refers to the spread of bracken.Method used to assess pressures: The data held in the 'Actions Database' were used to provide a basis for quantifying pressures/threats relating to the H8110 habitat. The 'Actions Database' provides information on pressures within the protected sites series; this was then matched to an expert judgement on the severity of these pressures/threats (at a generic level) to give an overall evaluation of the pressure/threat level (for more details see Guest, 2012). The special sites (SSSI and SAC) account for 79 % of the polygons mapped and 75% of the points mapped in Wales. The potential impacts of atmospheric nitrogen on this habitat are unclear and no generic critical load range has been agreed. Assessment of the 10km data for the habitat against the 2009 CEH moorland deposition data, shows an average of 19kg/N/ha/yr with no areas receiving less than 7kg/N/ha/yr therefore there is potential for significant impacts. Threats: * A09 Overgrazing - grazing agreements cover a proportion of the resource (see section 8) but large areas remain outside these agreements where there is no control of grazing. Existing agreements may not be renewed/replaced once they have elapsed. * J03 Air pollution - the impacts of nitrogen on vegetation may continue even with a decline in atmospheric deposition. * F07 Sports and leisure - visitor pressure has continued to rise in recent years with an 18% increase in the number of walkers on the footpaths of Snowdon between 2009/10 and 2010/2011 (Wales Audit Office 2012). It is highly likely recreational pressure on scree areas will, at the least, remain the same but could continue to increase. * IO4 Problematic native species - potential increase in bracken with climate change and changing management of wider habitat. * N05 Climate change impacts - the potential impacts of climate change on this habitat are unclear but upland species found in Wales at the southern edge of their distribution are likely to be most sensitive. Methods used to assess threats: All of the pressures listed were considered to be current and applicable to future scenarios representing ongoing threats in the long-term.
8.1 Status of measures	While the majority of the most important measures required to restore/maintain this habitat to FCS in Wales have been identified, the bulk have not yet been fully implemented.
8.5 List of main conservation measures	CA05 Maintaining appropriate grazing through agreement. 18% siliceous scree polygons plus 15% of points within SSSIs where scree is a qualifying feature are subject to land agency agreements and 39% of polygons and 32% of points are within an agri-environment scheme (note there is overlap between these 2 figures with areas being subject to both agreements), therefore it is likely that grazing will remain a threat on much of the resource outside these agreements or where agreements ae not renewed. There are no specific grazing prescriptions within Glastir for siliceous scree. * CF03 Management of footpaths and erosion control to protect fragile habitat e.g. work of National Trust and National Park Authorities. * CJ01 Emissions of airborne pollutants are controlled by a range of national and international regulations and local measures. However further measures are required if N pollution in particular is to be brought down to the levels likely to be safe for this habitat. Focussed monitoring/research is required to understand the impacts of nitrogen deposition on the habitat and implement effective mitigation. * CI06 Management of feral goat population e.g. strategic approach of the North Wales Feral Goat Group.

9.1 Future prospects of parameters	NRW currently lacks a specialist covering this habitat and as such we are unable to predict the likely trend in the area of this habitat over the next twelve years. NRW currently lacks a specialist covering this habitat and as such we are unable to predict the likely trend in the structure and function of this habitat over the next twelve years.
11.1 Surface area of the habitat type inside the pSCIs, SCIs and SACs network	The area figure given was produced by overlaying the H8110 GIS inventory (Stevens, Sherry and Turner. 2012) with SAC boundaries. The minimum figure (201.49ha) is derived from polygon data alone, whilst the maximum includes an estimate for the extent of point records (16.12 ha). The best estimate is simply the mid-point between the min and maximum values. Note that these figures does not include all the acid/neutral scree recorded in Phase 1 and the data are taken from a vertical projection.
11.4 Short term trend of habitat area in good condition within the network; Direction	Both Welsh SACs on which H8110 is a feature have been monitored once (in 2009 & 2012 respectively) since baseline recording was undertaken in 2005 and 2006. The overall condition of the habitat at both sites has remained unchanged, although it should be noted that these broad assessments of feature condition may mask local improvements and/or declines in habitat quality. This conclusion should be considered to be of low confidence given the absence of any assessment of feature condition within the current reporting round.
11.5 Short term trend of habitat area in good condition within the network; Method used	See narrative for section 11.4