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:

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

NORTHERN IRELAND

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 (Northern Ireland information only)**
1.2 Habitat code	**6230 - Species-rich Nardus grasslands, on siliceous substrates in mountain are**

2. Maps

2.1 Year or period	2013-2018
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	Data on aerial Nitrogen deposition taken from Air Pollution Information System website - http://www.apis.ac.uk/ Cooper, A. & McCann, T. (2001). The Northern Ireland Countryside Survey 2000. Environment and Heritage Service, Belfast Cooper, A. & McCann, T. 2002. Habitat Change in the Northern Ireland Countryside - Summary report of the Northern Ireland Countryside Survey 2000. Cooper, A., McCann, T. (2002). Habitat change in the Northern Ireland Countryside: technical report of the Northern Ireland Countryside Survey 2000. Environment and Heritage Service, Department of the Environment for Northern Ireland, Belfast. 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 Environment and Heritage Service, Belfast. Corbett, P., 2003. Grassland Habitats. 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.

Report on the main results of the surveillance under Article 17 for Annex I habitat types (Annex D)

4. Range

4.1 Surface area (in km²)			
4.2 Short-term trend Period			
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			
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 No d) Method		
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	2013-2018		
5.2 Surface area (in km²)	a) Minimum	b) Maximum	c) Best single value 0.4
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	Stable (0)		
5.7 Short-term trend Magnitude	a) Minimum	b) Maximum	c) Confidence interval
5.8 Short-term trend Method used	Complete survey or a statistically robust estimate		
5.9 Long-term trend Period	1994-2018		
5.10 Long-term trend Direction	Stable (0)		
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 0.35	Maximum 0.35

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	b) Area in not-good condition (km²)	Minimum 0	Maximum 0	
	c) Area where condition is not known (km²)	Minimum 0.07	Maximum 0.07	
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	2013-2018			
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)	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
Agricultural activities generating air pollution (A27)	M
Other invasive alien species (other then species of Union concern) (I02)	M
Temperature changes (e.g. rise of temperature & extremes) due to climate change (N01)	M
Increases or changes in precipitation due to climate change (N03)	M

Threat	Ranking
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
Agricultural activities generating air pollution (A27)	M
Other invasive alien species (other then species of Union concern) (I02)	M
Temperature changes (e.g. rise of temperature & extremes) due to climate change (N01)	M

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Increases or changes in precipitation due to climate change (N03) 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 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		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)

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

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

Restore habitats impacted by multi-purpose hydrological changes (CJ03)

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

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	No change
	The change is mainly due to:
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 b) Maximum c) Best single value 0.1
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	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

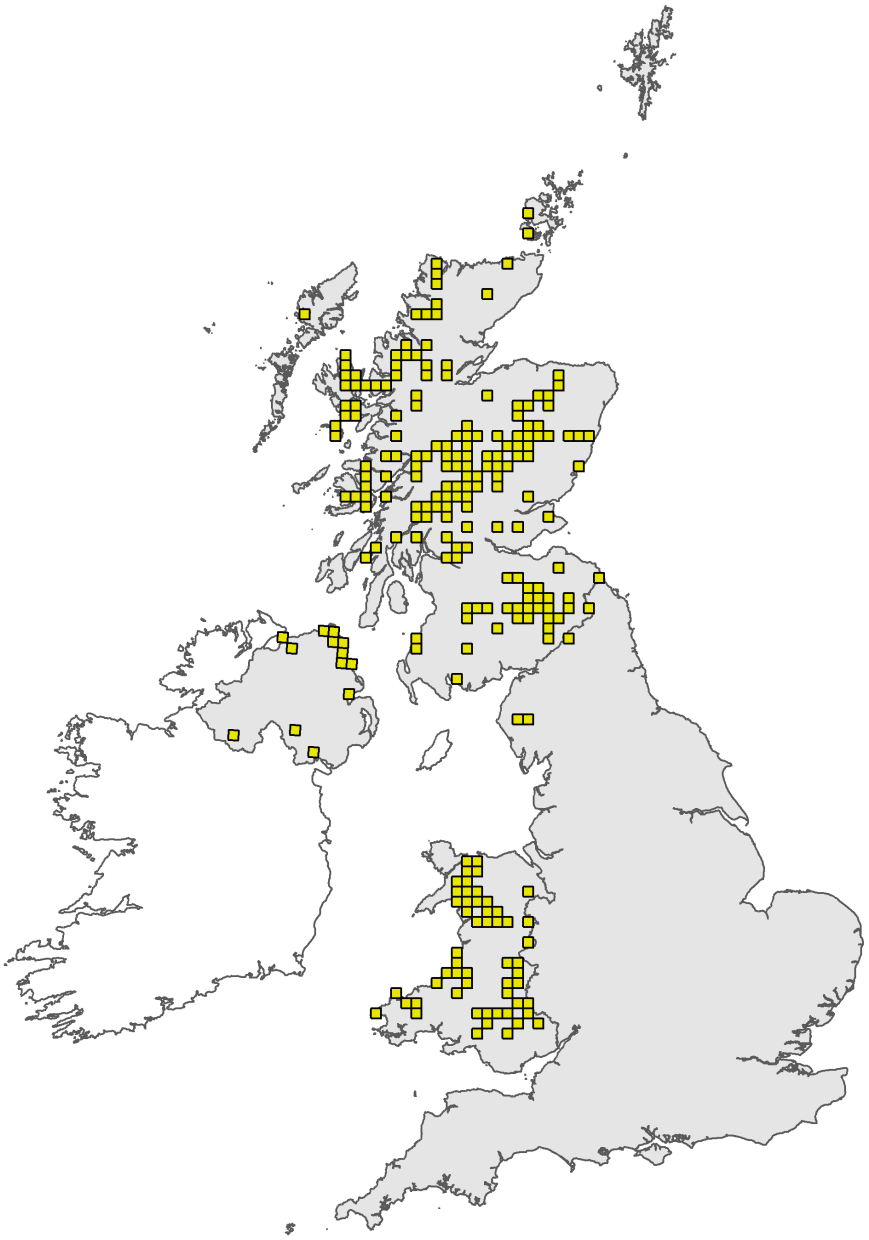

Figure 1: UK distribution map for H6230 - Species-rich *Nardus* grassland, on siliceous substrates in mountain areas (and submountain areas in continental Europe). Coastline boundary derived from the Oil and Gas Authority's OGA and Lloyd's Register SNS Regional Geological Maps (Open Source). Open Government 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

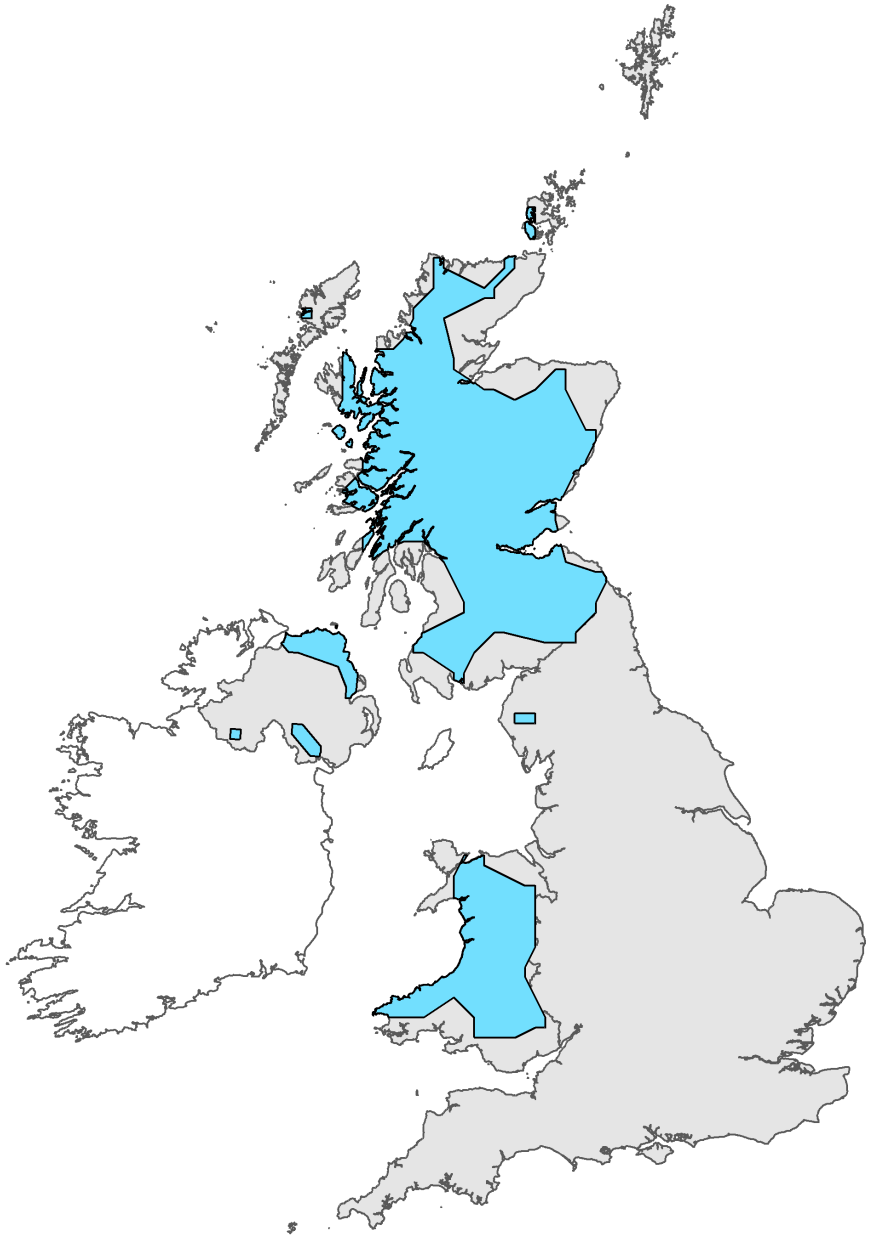

Figure 2: UK range map for H6230 - Species-rich *Nardus* grassland, on siliceous substrates in mountain areas (and submountain areas in continental Europe). Coastline boundary derived from the Oil and Gas Authority's OGA and Lloyd's Register SNS Regional Geological Maps (Open Source). Open Government 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.

Explanatory Notes

Habitat code: 6230

Field label	Note
2.2 Distribution map	The main NVC type associated with this Annex 1 habitat is CG10, which is a fairly restricted habitat in NI; it is generally found on shallow, freely-draining soils on base-rich parent material. Due to climate and soils drainage characteristics, such conditions are generally limited to steep slopes. H6230 is more restricted still, being limited to non-calcareous substrates. The main location for it is therefore on the Tertiary Basalts of Counties Antrim and Londonderry.
2.3 Distribution map; Method used	Survey nearly complete - due to restricted nature of the habitat in NI.

Habitat code: 6230 Region code: ATL

Field label	Note
10.6 Overal trend in Conservation Status	With the improvement in status over the reporting period in structure and function, and other factors favourable, the trend is improving.
4.1 Surface area	Species-rich Nardus grasslands in the UK are generally defined - in part - by the NVC communities CG10 Festuca ovina-Agrostis capillaris-Thymus praecox grassland and CG11 Festuca ovina-Agrostis capillaris-Alchemilla alpina grassland. The latter does not occur in NI. Note that similar grassland communities on limestone are excluded from the definition. CG 10 occurs in NI on the basalt rocks of Antrim and Londonderry, and can be difficult to separate floristically from species-rich examples of NVC type U 4. There are few extensive examples of the habitat in NI, with the two SACs - Binevenagh and North Antrim Coast - covering just over 10 ha of the habitat. The habitat is also present at several ASSIs - Galboly, Fair Head and Murlough Bay, Ballygalley Head and Knock Dhu and Sallagh Braes ASSIs. It is difficult to estimate accurately the extent of this Annex 1 habitat in Northern Ireland. This area of 40 ha represents the best current estimate. It is based on maps of ASSIs with this grassland type as a selection feature. Note that the Northern Ireland Countryside Survey does not provide a reliable estimate of the habitat extent, as 'calcareous grassland' (Murray et al., 1992) only included grassland on limestone (and thus limited to County Fermanagh), and excluded the habitat when it occurred on other substrates.
4.10 Favourable reference range	NOTE: 4.10 As discussed above, H6230 is a restricted habitat in NI; it is generally found on shallow, freely-draining soils on steep slopes with base-rich parent material. It is largely restricted to non-calcareous substrates on the Tertiary Basalts of Counties Antrim and Londonderry. Given the location of the habitat - on steep slopes with limited potential for agricultural intensification - there is no evidence of a loss in the range of the habitat in NI since 1994.
5.4 Surface area; Method used	Habitat area estimated from mapped data taken from ASSIs declared for this habitat. Habitat very restricted in extent outside designated sites.
5.8 Short term trend; Method used	Habitat area estimated from mapped data taken from ASSIs declared for this habitat. No evidence of habitat loss in long or short term periods.
5.10 Long term trend; Direction	NOTE 5.10 Habitat area estimated from mapped data taken from ASSIs declared for this habitat. No evidence of habitat loss in long or short term periods.
6.1 Condition of habitat	All 10 ha of habitat on SACs in favourable condition; 25 ha of the habitat on ASSIs in favourable condition. 7 ha of the habitat on recently declared ASSIs not yet assessed. The condition of the habitat on SACs and ASSIs is a good indicator of the condition in the wider countryside, as a high proportion of the habitat is within the protected sites network.

6.2 Condition of habitat; Method used	Data taken from the most recent Common Standards Monitoring on SACs and ASSIs that contain the habitat.
6.4 Short term trend of habitat area in good condition; Direction	One SAC moved from recovering to favourable condition during the reporting period.
6.5 Short term trend of habitat area in good condition; Method used	Data taken from the most recent Common Standards Monitoring on SACs and ASSIs that contain the habitat.
7.1 Characterisation of pressures/ threats	H6230 generally occurs within a very narrow ecological range on very shallow, well-drained, base-rich soils. Significant stands of the habitat are generally confined to steep slopes on basalt and other base-rich igneous rocks. As a result, the habitat is generally not subjected to many of the threats and pressures that are prevalent in the lowlands and more accessible parts of the uplands. The habitat depends upon a low level of grazing, so the main threats to the habitat are from insufficient grazing or complete abandonment - ultimately leading to rank growth and scrub encroachment. The shallow soils are subjected to rapid irrigation by rainwater, so are fairly well-buffered against damaging impacts from sources of eutrophication such as fertiliser and atmospheric Nitrogen deposition. Hence although APIS data indicate that Nitrogen deposition levels are above the critical thresholds for the habitat at most of its locations, this pressure/threat and fertiliser application are both given a Pressure Ranking of Medium. Invasion by non-native species (Cotoneaster spp; New Zealand Willowherb and Pirri-pirri bur) has been recorded at 2 of the sites for the habitat, but are currently localised and hence recorded as medium. Climate change may produce (as yet unknown) changes in species composition (most likely through changes in temperature and/or precipitation) and these are therefore recorded as a Medium threat.
7.2 Sources of information	Sources of information for atmospheric Nitrogen deposition come from the APIS website - http://www.apis.ac.uk/ . Other threats and pressures information comes from Common Standards monitoring of the habitat at designated sites.
8.2 Main purpose of the measures taken	This is a habitat that requires a low level of grazing to maintain it, so the main measures are to encourage extensive grazing in sites that contain the habitat. Some of the sites are owned and managed by NIEA and other nature conservation bodies so there is effective control of the management regime within these.
9.1 Future prospects of parameters	This is a rare habitat in NI and condition assessment data suggest that Species-rich Nardus grassland is generally in favourable condition. H6230 generally occurs in NI within a very narrow ecological range on very shallow, well-drained, base-rich soils. Significant stands of the habitat are generally confined to steep slopes on basalt and other base-rich igneous rocks. The shallow soils are subjected to rapid irrigation by rainwater, so are fairly well-buffered against damaging impacts from sources of eutrophication such as fertiliser and atmospheric Nitrogen deposition. Hence although APIS data indicate that Nitrogen deposition levels are above the critical thresholds for the habitat at most of its locations, this pressure/threat and fertiliser application are both given a Pressure Ranking of Medium. Clearly, N deposition is a factor that needs to be closely monitored for the habitat, but the Department is currently developing a road map to reduce atmospheric Nitrogen from agricultural sources. Future prospects for Structure and Function therefore assessed as Overall Stable.
10.5 Overall assessment of Conservation Status	Range and extent are stable; structure and function have shown some improvement over the reporting period. In addition, the habitat appears to have reasonably good future prospects, with no insurmountable threats identified. Hence an overall favourable assessment.

11.5 Short term trend of habitat area in good condition within the network; Method used	Data taken from the most recent Common Standards Monitoring on the 2 SACs that contain the habitat; one site maintained in favourable condition; the other recovered to favourable condition.