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:

H7130 - Blanket bogs

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	**7130 - Blanket bogs (* if active bog)**

2. Maps

2.1 Year or period	1962-2006
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	References within - http://jncc.defra.gov.uk/pdf/Article17Consult_20131010/H7130_SCOTLAND.pdf SNH SCM database, extract A2298772, 2017, processed and summarised in A2483529. Blanket bog and valley bog (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 Smart, S., Scott, A., Wright, S., Stuart, R., Scott, R. & Maskell, L. 2005. Initial stock estimates for blanket bog and upland heathland priority habitats in Scotland. Scottish Natural Heritage Archive Report No. 028. http://www.snh.org.uk/pdfs/publications/archive_reports/AR028.pdf

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 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	NB Range entries and comments are made on the basis of Distribution maps and assumptions as to how these will affect previous range maps, without having seen new range maps. 1) Newly collated vegetation map information (HabMoS)	

has identified occurrences of this habitat which did not appear in previous Article 17 reporting distribution maps. It was noted in previous reporting that the reported range probably slightly under-represented the actual range, and this new mapping may help to correct this. Some of the new occurrences are outwith the currently-mapped range and would increase the surface area of the range around the edges. However, some of the new mapping is not credible for this habitat and should not be used without verification. NB only a cursory examination of additional occurrences has been possible. Therefore any change in range must be regarded as tentative pending verification. 2) For the previously-reported occurrences of the habitat, there is no evidence of any actual change in range in Scotland in the period 2006-2017. Within this period, persistence of the habitat has been confirmed in all the upland designated sites where it is a notified feature that have been checked (SCM database, extract A2298772).

5. Area covered by habitat

5.1 Year or period	2007-007-			
5.2 Surface area (in km²)	a) Minimum	b) Maximum	c) Best single value	17590
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	2006-2016			
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) 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	Conclusions are based on absence of evidence of significant change in extent in Scotland in the period. Within this period, losses of extent through denudation and erosion of peat, conversion to M25, and colonisation by non-native conifers have been recorded on four upland designated sites where blanket bog is a notified feature (SCM database, extract A2298772). Losses of extent to similar causes, and to renewables developments occur outwith designated sites; however this is neither recorded nor quantified in any systematic form. This is a significant omission likely to introduce error into reporting on extent. A large programme of work on blanket bogs in Scotland is currently underway through Peatland Action. As well as enhancing the condition of bog and reducing C loss, this can be expected to reduce losses of extent and indeed increase future extent through restoration.			

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6. Structure and functions

6.1 Condition of habitat	a) Area in good condition (km^2)	Minimum	213	Maximum 213
	b) Area in not-good condition (km^2)	Minimum	1952	Maximum 1952
	c) Area where condition is not known (km^2)	Minimum	15425	Maximum 15425
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	1999-2016			
6.4 Short-term trend of habitat area in good condition Direction	Stable (0)			
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	Site Condition Monitoring provides a means of assessing the structure and function of H7130 in Scotland. Assessment is based mainly on the results of fieldwork carried out between 2004 and 2016, with a few earlier results where more recent assessment is not avialable. Results are recorded on the SNH SCM database, from which data was extracted to A2298772 on 23/05/2017. Within this period, the proportion of H7130 on SACs considered to be in Favourable condition has increased marginally from 8% in 2012 (based on assessments carried out between 1999 and 2010) to 10% in 2016. Nineteen per cent of H7130 is assessed as recovering, a small increase from 2012 17%). A further 7% of the extent is now reported to be Unfavourable but recovering due to management, up from the 2012 figure of only 1%. In 2016 18 SSSI features are assessed as Favourable, with 19 Unfavourable, compared to 16 and 20 respectively in 2012. Overall, 116441ha was assessed as declining in condition (Unfavourable declining or Favourable declining), with 43875ha recovered or recovering (Favourable recovered, Unfavourable recovering, Unfavourable recovering due to management), compared to 115159ha and 40452ha respectively for 2012. The proportion in Favourable condition, and the proportion Recovering, have increased slightly, but the extent reported to be declining is more than double the extent reported as Recovering. Therefore the overall judgement is that condition is stable. The effect of the Unfavourable condition of a single SAC, Caithness and Sutherland Peatlands, on these results, is of major importance as it represents 52% of the extent of SAC H7130. The SAC comprises 37 separate components, not all of which are Unfavourable when assessed in their own right.			

7. Main pressures and threats

7.1 Characterisation of pressures/threats

Pressure	Ranking
Intensive grazing or overgrazing by livestock (A09)	H
Management of fishing stocks and game (G08)	H
Other invasive alien species (other then species of Union concern) (I02)	H

Drainage (K02)	H
Burning for agriculture (A11)	H
Peat extraction (C05)	M
Land, water and air transport activities not referred to above (E09)	M
Wind, wave and tidal power, including infrastructure (D01)	M
Hydropower (dams, weirs, run-off-the-river), including infrastructure (D02)	M
Increases or changes in precipitation due to climate change (N03)	M
Mixed source air pollution, air-borne pollutants (J03)	H

Threat	Ranking
Intensive grazing or overgrazing by livestock (A09)	H
Management of fishing stocks and game (G08)	H
Other invasive alien species (other then species of Union concern) (I02)	H
Drainage (K02)	H
Burning for agriculture (A11)	H
Peat extraction (C05)	M
Land, water and air transport activities not referred to above (E09)	M
Wind, wave and tidal power, including infrastructure (D01)	M
Hydropower (dams, weirs, run-off-the-river), including infrastructure (D02)	M
Increases or changes in precipitation due to climate change (N03)	H
Mixed source air pollution, air-borne pollutants (J03)	H

7.2 Sources of information

7.3 Additional information

Grazing and trampling - sheep, cattle
Deer grazing and trampling
Rank Molinia and Calluna
Rhododendron, conifers, feral pigs.
Continuing impact of existing drains rather than new drainage.
Also burning for game management (grouse, deer) but no code for this. The revised Muirburn Code recommends cessation of burning on peatland as a good practice recommendation. If this is followed threat level could be reduced.
Principally relating to discontinued extraction and small-scale domestic extraction.
Use of ATVs and track construction.
Some instances of turbine and associated infrastructure development leading to habitat loss, but this is unquantified.
Some instances of run-of river schemes and associated infrastructure development leading to habitat loss, but this is unquantified.
Changes in wetness and water tables.
From N deposition assessment

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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		Medium-term results (within the next two reporting periods, 2019-2030)
8.5 List of main conservation measures		

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

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

Manage drainage and irrigation operations and infrastructures in agriculture (CA15)

Prevent conversion of (semi-) natural habitats into forests and of (semi-)natural forests into intensive forest plantation (CB01)

Adapt/manage renewable energy installation, facilities and operation (CC03)

Reduce impact of hydropower operation and infrastructure (CC04)

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

8.6 Additional information	Conservation measures are generally implemented through designation of protected areas, voluntary and statutory procedures (Deer Act), agri-environment schemes (SRDP) , and Peatland Action. While some results are achievable in the short and medium term, some attributes will recover only over longer timescales, particularly htose related to restoring hydrological functioning. Although conservation measures have been identified, implementation is patchy.

9. Future prospects

9.1 Future prospects of parameters	a) Range b) Area c) Structure and functions	
9.2 Additional information		Range is considered likely to remain stable. Area is considered likely to remain stable or perhaps increase with restoration work, but losses also occur. The very modest improvements shown for Structure and function should continue, but the extent reported as declining significantly exceeds that reported as recoveringg. Given the large extent still unfavourable or at risk, and the patchy nature of both pressures and application of conservation measures, Structure and function must be considered to be still declining. Despite this evidence of moderate decline, the Future trend for Structure and Function must be classed as Very negative, as Nitrogen deposition is a High rank threat (for details see the UK Article 17 Approach document). The current assessment found empirical evidence of actual effects of N deposition on the ground in Scotland to be lacking.

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

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 2164.3
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	Site Condition Monitoring provides a means of assessing the structure and function of H7130 on SACs in Scotland. Assessment is based mainly on the results of fieldwork carried out between 2004 and 2016, with a few earlier results where more recent assessment is not available. Results are recorded on the SNH SCM database, from which data was extracted to A2298772 on 23/05/2017. Within this period, the proportion of H7130 on SACs considered to be in Favourable condition has increased marginally from 8% in 2012 (based on assessments carried out between 1999 and 2010) to 10% in 2016. Nineteen per cent of H7130 is assessed as recovering, a small increase from 2012 (17%). A further 7% of the extent is now reported to be Unfavourable but recovering due to management, up from the 2012 figure of only 1%. Overall, 116441ha was assessed as declining in condition (Unfavourable declining or Favourable declining), with 43875ha recovered or recovering (Favourable recovered, Unfavourable recovering, Unfavourable recovering due to management), compared to 115159ha and 40452ha respectively for 2012. The proportion in Favourable condition, and the proportion Recovering, have increased slightly, but the extent reported to be declining is more than double the extent reported as Recovering. Therefore the overall judgement is that condition is stable. The effect of the Unfavourable condition of a single SAC, Catithness and Sutherland Peatlands, on these results, is of major importance as it represents 52% of the

extent of SAC H7130. The SAC comprises 37 separate components, not all of which are Unfavourable when assessed in their own right.

12. Complementary information

12.1 Justification of % thresholds for trends

12.2 Other relevant information

Distribution Map

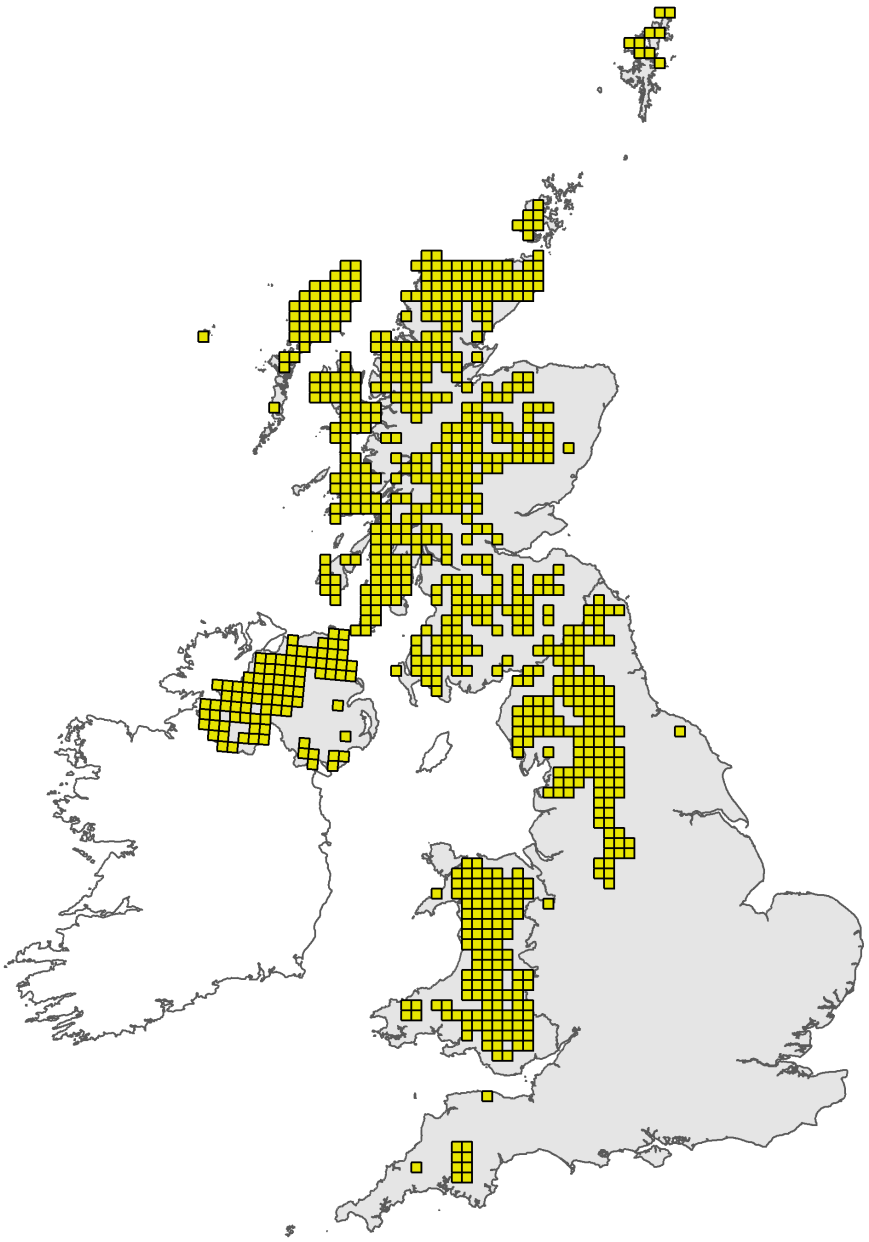

Figure 1: UK distribution map for H7130 - Blanket bogs. Coastline boundary derived from the Oil and Gas Authority's OGA and Lloyd's Register SNS Regional Geological Maps (Open Source). Open Government Licence v3 (OGL). Contains data © 2017 Oil and Gas Authority.

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

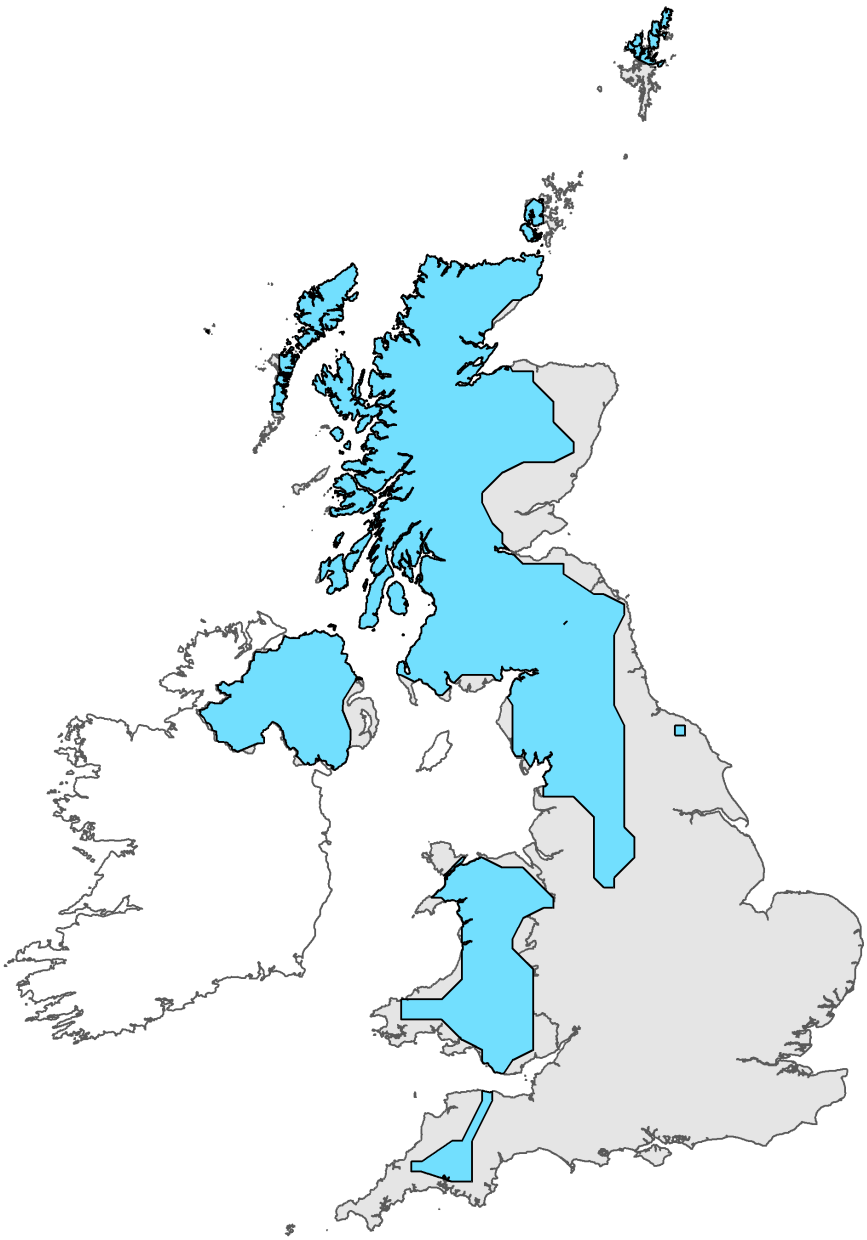

Figure 2: UK range map for H7130 - Blanket bogs. Coastline boundary derived from the Oil and Gas Authority's OGA and Lloyd's Register SNS Regional Geological Maps (Open Source). Open Government Licence v3 (OGL). Contains data © 2017 Oil and Gas Authority.

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.