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

ENGLAND

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 (England information only)**
1.2 Habitat code	**7130 - Blanket bogs (* if active bog)**

2. Maps

2.1 Year or period	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	ANDERSON, P., BUCKLER, M. & WALKER, J. 2009. Moorland restoration: potential and progress. In; BONN, A., ALLOTT, T., HUBACEK, K & STEWART, J. (eds). Drivers of environmental change in uplands. Routledge. ARMSTRONG, A., HOLDEN, J., KAY., FOULGER., GLEDHILL, S., MCDONALD, A.T & WALKER, A. 2009. Drain-blocking techniques on blanket peat: A framework for best practice. Journal of Environmental Management, 90, 3512-3519. BELLAMY, P. E., STEPHEN, L., MACLEAN, I.S. & GRANT, M.C. 2012. Response of blanket bog vegetation to drain-blocking. Applied Vegetation science, 15, 129-135. BACKSHALL, J., MANLEY, J., REBANE, M. 2001. Chapter 6: Moorland. In: The Upland Management Handbook. English Nature, Peterborough. CAPORN, S.J.M & EMMETT, B.A. 2009. Threats from air pollution and climate change to upland systems: past, present, future. In; BONN, A., ALLOTT, T., HUBACEK, K & STEWART, J. (eds). Drivers of environmental change in uplands. Routledge. Chambers, F., Crowle, A., Daniell, F., Mauquoy, D, McCarroll, J., Sanderson, N., Thom, T., Toms, P and Webb, J. 2017. Ascertaining the nature and timing of mire degradation: using palaeoecology to assist future conservation management in Northern England. AIMS Environmental Science, 4(1): 54-82. DOI: 10.3934/environsci.2017.1.54 CRITCHLEY ET AL. 2011. Condition surveys of upland priority habitat. Blanket Bogs. Unpublished report to Natural England. CRIS, R., BUCKMASTER, S., BAIN, C. & BONN, A.E. 2012. UK Peatland Restoration - Demonstrating Success. Edinburgh, IUCN UK National Committee Peatland Programme. Douglas, D.J.T., Buchanan, G.M., Thompson, P., Amar, A., Fielding, D.A., Redpath, S.M. and Wilson, J.D. 2015. Vegetation burning for game management in the UK uplands is increasing and overlaps spatially with soil carbon and protected areas. Biological Conservation 191 243-250. Glaves, D.J., Morecroft, M., Fitzgibbon, C., Lepitt, P., Owen, M. & Phillips, S. 2013. Natural England Review of Upland Evidence 2012 - The effects of managed burning on upland peatland biodiversity, carbon and water. Natural England Evidence Review, Number 004. HINDE, S., ROSENBURGH, A., WRIGHT, N., BUCKLER, M & CAPORN, S. 2010.

Sphagnum re-introduction project: A report on research into the re-introduction of sphagnum mossess to degraded moorland. Moors for the future Research Report 18.
Holden, J., Palmer, S.M., Johnston, K., Wearing, C., Irvine. B. and Brown, L.E. 2015. Impact of prescribed burning on blanket peat hydrology. Water Resour. Res., 51, 6472 - 6484, doi:10.1002/2014WR016782
Grace, M., Dykes, A. P., Thorp, S. P. R. & Crowle, A.J.W. 2013. Natural England review of upland evidence - The impacts of tracks on the integrity and hydrological function of blanket peat. Natural England Evidence Review, Number 002.
JOINT NATURE CONSERVATION COMMITTEE. 2011. Towards an assessment of the state of the UK Peatlands. JNCC.
LINDSAY, R. 2010. Peatbogs and carbon: a critical synthesis to inform policy development in oceanic peat bog conservation and restoration in the context of climate change. London.
Li, P., Holden, J. and Irvine, B. 2016. Prediction of blanket peat erosion across Great Britain under environmental change. Climatic Change. 134:177-191. DOI 10.1007/s10584-015-1532-x
LUNT, P., ALLOTT, T., ANDERSON, P., BUCKLER, M., COUPAR, A., JONES, P., LABADZ, J. & WORRALL, F. 2010. Peatland Restoration: Scientifc review to IUCN Peatland Programme Commission of Inquiry on Peatlands.
MASLEN ENVIRONMENTAL. 2010. Assessing Impacts of Wind Farm Development on Blanket Peatland in England. Natural England Commissioned Report.
Martin, D., Fraser, M.D., Pakeman, R.J. & Moffat, A.M. 2013. Natural England Review of Upland Evidence 2012 - Impact of moorland grazing and stocking rates. Natural England Evidence Review, Number 006.
MOORS FOR THE FUTURE. 2008. A Compendium of UK peat restoration and management projects: Research Project Final Report SP0556 to DEFRA.TURAL ENGLAND. 2008. Chapter 3.8 Wetland. In: State of the Natural Environment 2008. Natural England. O'BRIEN, H., LABADZ, J & BUTCHER, D.P. 2007. Review of Balnket Bog Management and restoration. TechnicalReport to DEFRA. Project No. CTE0513.
Shepherd, M. J., Labadz, J., Caporn, S. J., Crowle, A., Goodison, R., Rebane, M. & Waters, R. 2013. Natural England review of upland evidence - Restoration of Degraded Blanket Bog. Natural England Evidence Review, Number 003.
VAN DER WAL, R., BONN,A., MONTEITH,D., REED, M., BLACKSTOCK, K., HANLEY,N., THOMPSON,D., EVANS,M., ALONSO,I., ALLOTT,T., ARMITAGE,H., BEHARRY,N., GLASS,J., JOHNSON,S., McMORROW,J., ROSS,L., PAKEMAN,R., PERRY,S & TINCH,D. 2011. Chapter 5: Mountains, Moorlands and Heaths pp105-116. In: The UK National Ecosystem Assessment technical Report. UK National Ecosystem Assessment, UNEP-WCMC, Cambridge.
Natural England. 19.10.2017. Favourable Conservation Status: England Contribution H7130 Blanket Bog.
Natural England. 2010. England's Peatlands Carbon storage and greenhouse gases.NE257
Natural England. 2016. Improvement Programme for England's Natura 2000 Sites (IPENS) - Planning for the Future IPENS055. Burning in the English Uplands - A Review, Reconciliation and Comparison of Results of Natural England's Burn Monitoring: 2005 - 2014

4. Range

4.1 Surface area (in km²)
4.2 Short-term trend Period

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

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	2018-018-		
5.2 Surface area (in km²)	a) Minimum	b) Maximum	c) Best single value 2300
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			
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 135.9	Maximum 135.9
	b) Area in not-good condition (km²)	Minimum 1151.66	Maximum 1151.66
	c) Area where condition is not known (km²)	Minimum 1012.44	Maximum 1012.44

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	Stable (0)
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
Burning for agriculture (A11)	M
Intensive grazing or overgrazing by livestock (A09)	M
Mixed source air pollution, air-borne pollutants (J03)	M
Wind, wave and tidal power, including infrastructure (D01)	M
Management of fishing stocks and game (G08)	H
Conversion to forest from other land uses, or afforestation (excluding drainage) (B01)	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
Drainage (K02)	H
Vandalism or arson (H04)	M
Natural succession resulting in species composition change (other than by direct changes of agricultural or forestry practices) (L02)	M
Roads, paths, railroads and related infrastructure (e.g. bridges, viaducts, tunnels) (E01)	H
Sports, tourism and leisure activities (F07)	M

Threat	Ranking
Burning for agriculture (A11)	M
Intensive grazing or overgrazing by livestock (A09)	H
Mixed source air pollution, air-borne pollutants (J03)	M
Wind, wave and tidal power, including infrastructure (D01)	M
Management of fishing stocks and game (G08)	H
Conversion to forest from other land uses, or afforestation (excluding drainage) (B01)	H

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
Drainage (K02)	H
Vandalism or arson (H04)	M
Natural succession resulting in species composition change (other than by direct changes of agricultural or forestry practices) (L02)	M
Roads, paths, railroads and related infrastructure (e.g. bridges, viaducts, tunnels) (E01)	H
Sports, tourism and leisure activities (F07)	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		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)
Stop forest management and exploitation practices (CB06)
Habitat restoration of areas impacted by residential, commercial, industrial and recreational infrastructure, operations and activities (CF02)
Manage drainage and irrigation operations and infrastructures in agriculture (CA15)
Reduce impact of outdoor sports, leisure and recreational activities (CF03)
Manage conversion of land for construction and development of infrastructure (CF01)
Reduce impact of mixed source pollution (CJ01)
Reducing the impact of (re-) stocking for fishing and hunting, of artificial feeding and predator control (CG03)
Prevent conversion of (semi-) natural habitats into forests and of (semi-)natural forests into intensive forest plantation (CB01)
Management of habitats (others than agriculture and forest) to slow, stop or reverse natural processes (CL01)

8.6 Additional information

9. Future prospects

9.1 Future prospects of parameters	a) Range
	b) Area
	c) Structure and functions

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

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:

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 1285.169

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

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

Distribution Map

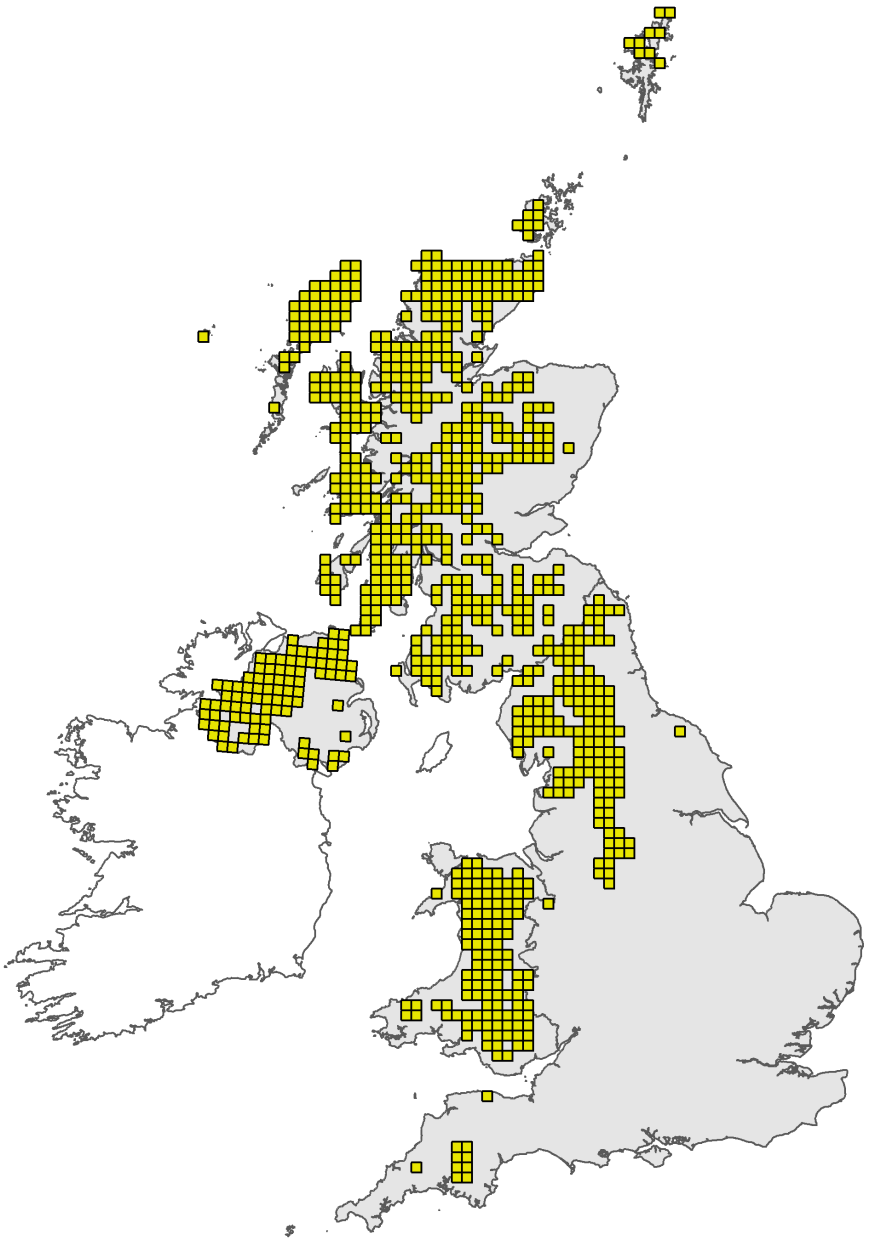

Figure 1: UK distribution map for H7130 - Blanket bogs. Coastline boundary derived from the Oil and Gas Authority's OGA and Lloyd's Register SNS Regional Geological Maps (Open Source). Open Government Licence v3 (OGL). Contains data © 2017 Oil and Gas Authority.

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

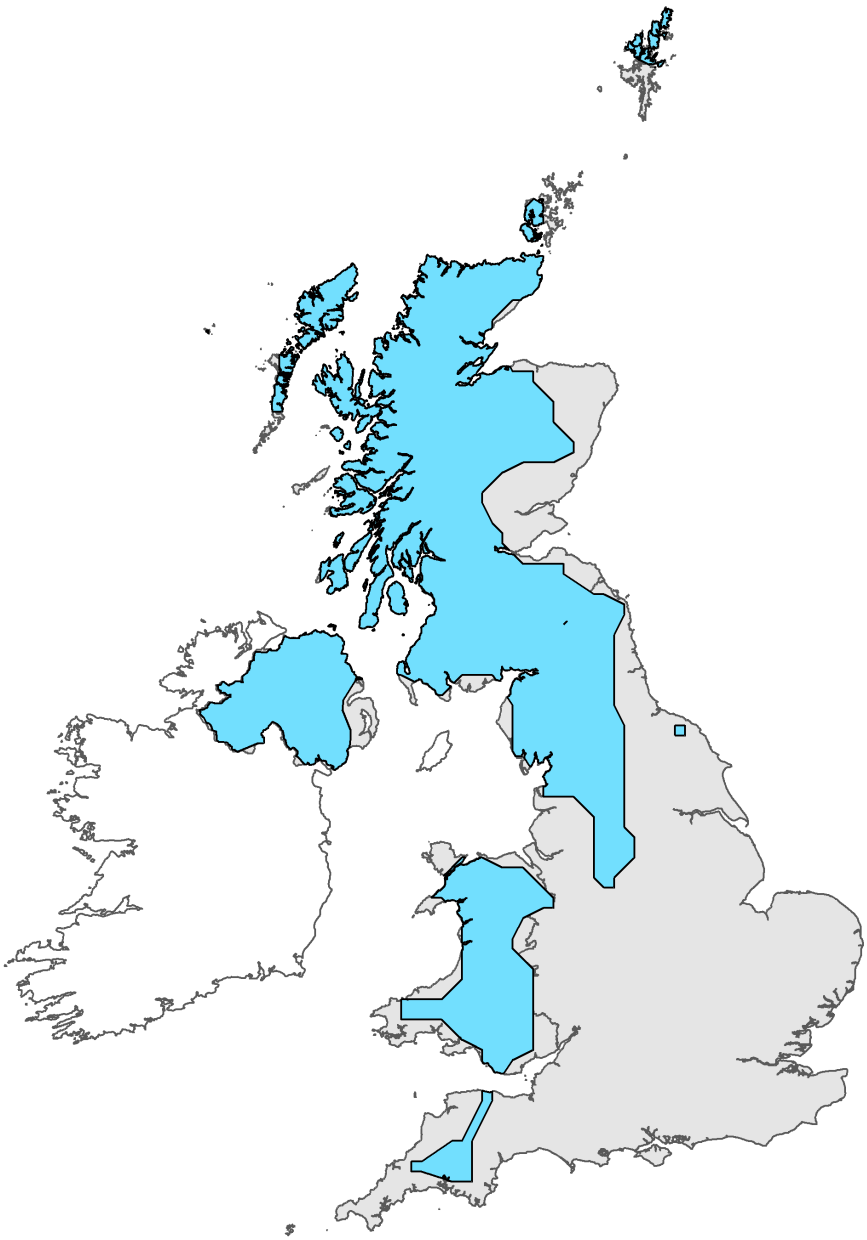

Figure 2: UK range map for H7130 - Blanket bogs. Coastline boundary derived from the Oil and Gas Authority's OGA and Lloyd's Register SNS Regional Geological Maps (Open Source). Open Government Licence v3 (OGL). Contains data © 2017 Oil and Gas Authority.

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.

Explanatory Notes

Habitat code: 7130 Region code: ATL

Field label	Note
3.2 Sources of information	There are increasing numbers of publications around management/restoration of blanket bog, many are not included in this list.
4.3 Short term trend; Direction	No loss of existing range recorded.
5.14 Change and reason for change in surface area	Improved mapping
6.1 Condition of habitat	Based upon CSM data and known impacts of landmanagement activities.
9.1 Future prospects of parameters	A large area of blanket bog is currently damaged by a combination of rotational burning, drainage and over-grazing. There are steps in place to address these activities but it is uncertain as to what degree and time-frame remedial work will take place.