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:

H7140 - Transition mires and quaking bogs

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	**7140 - Transition mires and quaking bogs**

2. Maps

2.1 Year or period	1962-2018
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 Tratt, R., Parnell, M., Eades, P. & Shaw, S. (2013) Development of inventories for Annex I habitats 'Alkaline fens' and 'Transition mires & Quaking Bogs' in England. Report to Natural England. Natural England, Peterborough. Meade, R. (2015 et seq.) VEGETATION, HABITAT AND ECO-HYDROLOGICAL INTERPRETATION OF NEW FOREST MIRES. Unpublished reports to Natural England, Telford. Wheeler, B. & Wilson, P. (2014) Survey of EC Habitats Directive Annex I wetland habitats in the Dorset heaths. Unpublished Report to Natural England, Telford. Diack, I. (2016) Review of SSSI series for Raised Bogs. Unpublished Natural England report Diack, I. (2016) Review of SSSI series for Fens. Unpublished Natural England report Natural England (2015). Hydrological Functioning Theme Plan. Restoring the hydrology of Natura 2000 terrestrial wetlands. IPENS programme N2K Site Improvements Plans - http://publications.naturalengland.org.uk/category/5458594975711232 Tratt, R., Eades, P., & Shaw, S.C. (2012). Alkaline Fen & Transition Mire Survey of the North York Moors National Park & Bishop Monkton Ings. Report to Natural England; Telford. Tratt, R., Parnell, M., Eades, P. and Shaw, S.C. (2013). Development of Inventories for Annex 1 habitats 'Alkaline Fens' and 'Transition Mires & Quaking Bogs' in England. Report to Natural England, Telford. Scotland References within - http://jncc.defra.gov.uk/pdf/Article17Consult_20131010/H7130_SCOTLAND.pdf SNH SCM database, extract A2298772, 2017, processed and summarised in A2498676. Transition mire, ladder fen and quaking 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 Wales Birch, K.S. (in prep.). Lowland Peat Survey Site Report for SH64/27P Llyn Hafod-y-llyn. Natural Resources Wales, Bangor

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Jones, P.S., Stevens, J., Bosanquet, S.D.S., Turner, A.J., Birch, K.S. & Reed, D.K. (2012). Distribution, extent and status of Annex I wetland habitats in Wales: supporting material for the 2013 Article 17 assessment. Countryside Council for Wales, Bangor.
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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.
Rodwell, J.S. (1991). British Plant Communities. Volume 2, Mires and heaths. Cambridge: Cambridge University Press
NIEA. Internal Condition Assessment Reports (various sites and years).
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Data on aerial Nitrogen deposition taken from Air Pollution Information System website - http://www.apis.ac.uk/
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NIEA. Fen Survey Of Counties Down and Armagh

4. Range

4.1 Surface area (in km²)	131138.24	
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)	131138.24
	b) Operator	
	c) Unknown	No
	d) Method	The FRR is approximately equal to the current range area. 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	No change	
	The change is mainly due to:	
4.12 Additional information		

5. Area covered by habitat

5.1 Year or period	1987-2018

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5.2 Surface area (in km²)	a) Minimum	b) Maximum	c) Best single value 44.58
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	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	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	The FRA is unknown. 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	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	17.488	Maximum	17.838
	b) Area in not-good condition (km²)	Minimum	14.462	Maximum	14.812
	c) Area where condition is not known (km²)	Minimum	9.128	Maximum	15.428
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	2006-2018				
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	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

Pressure	Ranking

Intensive grazing or overgrazing by livestock (A09)	M
Extensive grazing or undergrazing by livestock (A10)	M
Modification of hydrological conditions, or physical alteration of water bodies and drainage for forestry (including dams) (B27)	M
Problematic native species (I04)	M
Mixed source pollution to surface and ground waters (limnic and terrestrial) (J01)	H
Mixed source air pollution, air-borne pollutants (J03)	H
Drainage (K02)	M

Threat	Ranking
Intensive grazing or overgrazing by livestock (A09)	M
Extensive grazing or undergrazing by livestock (A10)	M
Modification of hydrological conditions, or physical alteration of water bodies and drainage for forestry (including dams) (B27)	M
Problematic native species (I04)	M
Mixed source pollution to surface and ground waters (limnic and terrestrial) (J01)	H
Mixed source air pollution, air-borne pollutants (J03)	H
Abstraction from groundwater, surface water or mixed water (K01)	M
Drainage (K02)	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
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		

Maintain existing extensive agricultural practices and agricultural landscape features (CA03)
Adapt mowing, grazing and other equivalent agricultural activities (CA05)
Reduce diffuse pollution to surface or ground waters from agricultural activities (CA11)

Reduce/eliminate air pollution from agricultural activities (CA12)	
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/change forest management and exploitation practices (CB05)	
Management of hunting, recreational fishing and recreational or commercial harvesting or collection of plants (CG02)	
Management of problematic native species (CI05)	
Restore habitats impacted by multi-purpose hydrological changes (CJ03)	

8.6 Additional information

9. Future prospects

9.1 Future prospects of parameters	a) Range	Good
	b) Area	Unknown
	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	Unknown (XX)
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 Genuine change Use of different method The change is mainly due to: Genuine change
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 stable; and (ii) the Favourable Reference Area is unknown.

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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 unknown; 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 - stable, and Structure and functions - stable.
The Overall trend in Conservation Status has changed between 2013 and 2019 because the Structure and functions trend has changed from decreasing to stable, and because of the removal of the Future prospects trend from the 2019 method used to assess Overall trend.

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 31.282
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

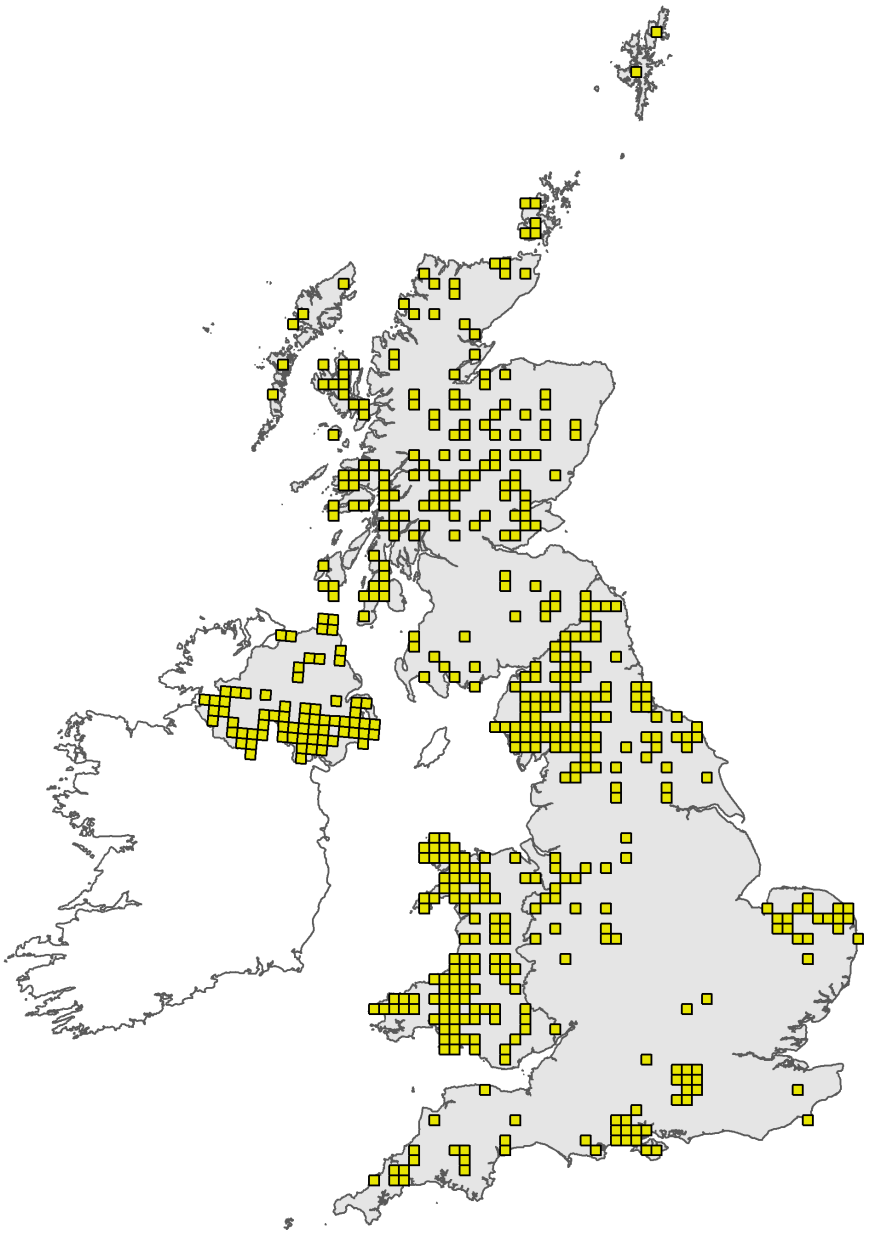

Figure 1: UK distribution map for H7140 - Transition mires and quaking bogs. Coastline boundary derived from the Oil and Gas Authority's OGA and Lloyd's Register SNS Regional Geological Maps (Open Source). Open Government Licence v3 (OGL). Contains data © 2017 Oil and Gas Authority.

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

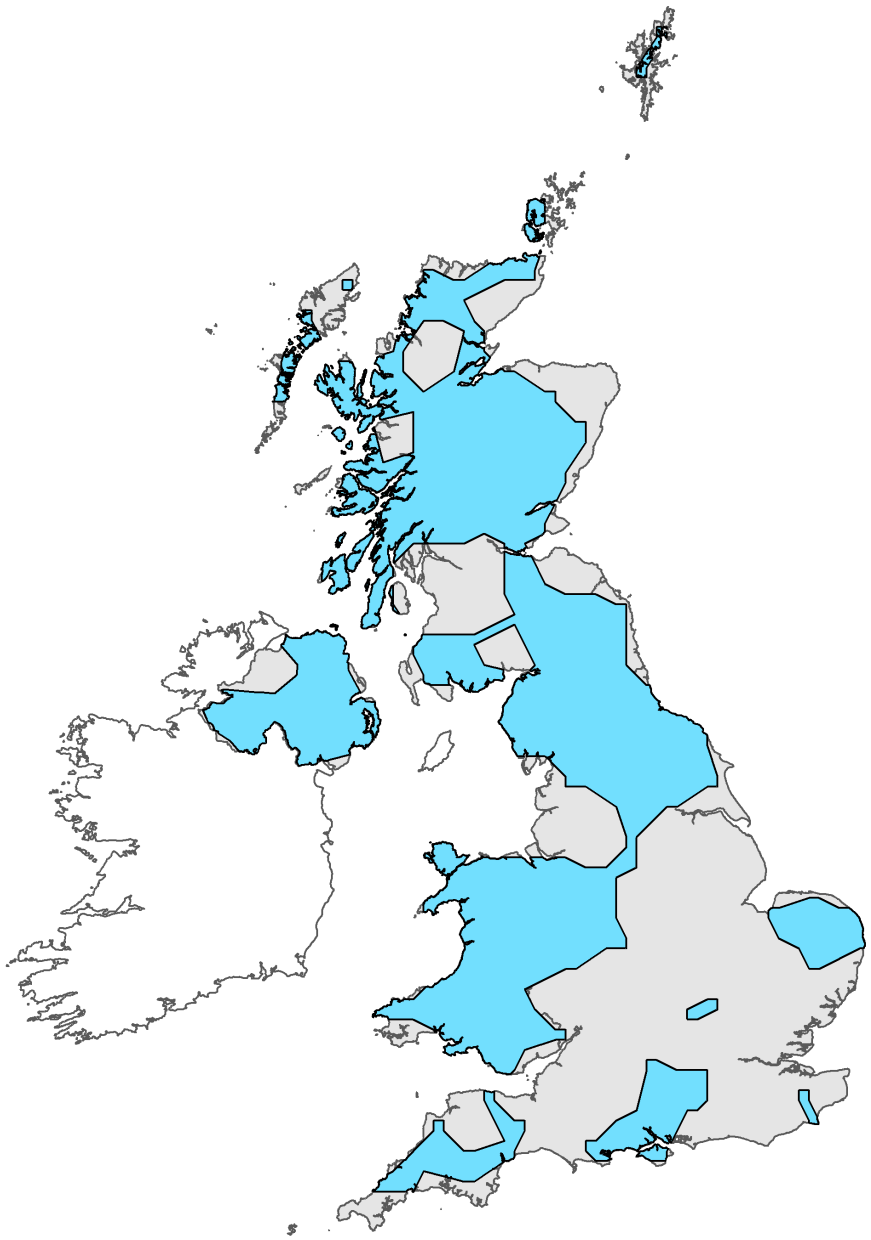

Figure 2: UK range map for H7140 - Transition mires and quaking bogs. Coastline boundary derived from the Oil and Gas Authority's OGA and Lloyd's Register SNS Regional Geological Maps (Open Source). Open Government Licence v3 (OGL). Contains data © 2017 Oil and Gas Authority.

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.