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:

H7140 - Transition mires and quaking 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	**7140 - Transition mires and quaking bogs**

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	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.

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		

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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 23	b) Maximum 30	c) Best single value 26.5
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	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	No change		
	The change is mainly due to:		
5.15 Additional information	Update of inventory has refined inventory and removed some large over-estimates of extent of feature on some sites. Quality of information now much improved but still lacking data from some blanket mire complexes, particualrly Border Mires. Some survey here ongoing however.		

6. Structure and functions

6.1 Condition of habitat	a) Area in good condition (km²)	Minimum 2.4	Maximum 2.75
	b) Area in not-good condition (km²)	Minimum 12.5	Maximum 12.85
	c) Area where condition is not known (km²)	Minimum 8.1	Maximum 14.4
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	2007-2018		

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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
Mixed source pollution to surface and ground waters (limnic and terrestrial) (J01)	H
Mixed source air pollution, air-borne pollutants (J03)	H
Conversion to forest from other land uses, or afforestation (excluding drainage) (B01)	M
Drainage (K02)	H
Abstraction from groundwater, surface water or mixed water (K01)	M
Modification of hydrological conditions, or physical alteration of water bodies and drainage for forestry (including dams) (B27)	H
Increases or changes in precipitation due to climate change (N03)	M
Intensive grazing or overgrazing by livestock (A09)	M
Extensive grazing or undergrazing by livestock (A10)	M
Management of fishing stocks and game (G08)	M

Threat	Ranking
Mixed source pollution to surface and ground waters (limnic and terrestrial) (J01)	H
Mixed source air pollution, air-borne pollutants (J03)	H
Conversion to forest from other land uses, or afforestation (excluding drainage) (B01)	M
Drainage (K02)	H
Abstraction from groundwater, surface water or mixed water (K01)	H
Modification of hydrological conditions, or physical alteration of water bodies and drainage for forestry (including dams) (B27)	H
Increases or changes in precipitation due to climate change (N03)	H
Intensive grazing or overgrazing by livestock (A09)	M
Extensive grazing or undergrazing by livestock (A10)	M
Management of fishing stocks and game (G08)	M

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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		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		

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

Adapt/change forest management and exploitation practices (CB05)

Reduce diffuse pollution to surface or ground waters from agricultural activities (CA11)

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

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

Reduce/eliminate air pollution from agricultural activities (CA12)

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

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		Positive area change suspected due to continuing restoration of raised bog SAC sites, including lagg areas on some sites. Negative for structure& function due to atmospheric deposition and likely continued diffuse pollution particularly to lowland basin mires supporting TQMB.

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

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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 15 b) Maximum 16 c) Best single value 15.5
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	Decreasing (-)
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	ENSIS/CMSi data show a decrease in the area/proportion of H7140 in Favourable Condition in SACs from 57% to 16%. Unfavourable recovering area/proportion in SAC is 10%, but 72% of SAC resource classified as Unfavourable no change and Unfavourable declining. Change may indicate a more realistic assessment of condition and realisation that many damaging activities around sites thought to have been addressed are still operating.

12. Complementary information

12.1 Justification of % thresholds for trends	
12.2 Other relevant information	

Distribution Map

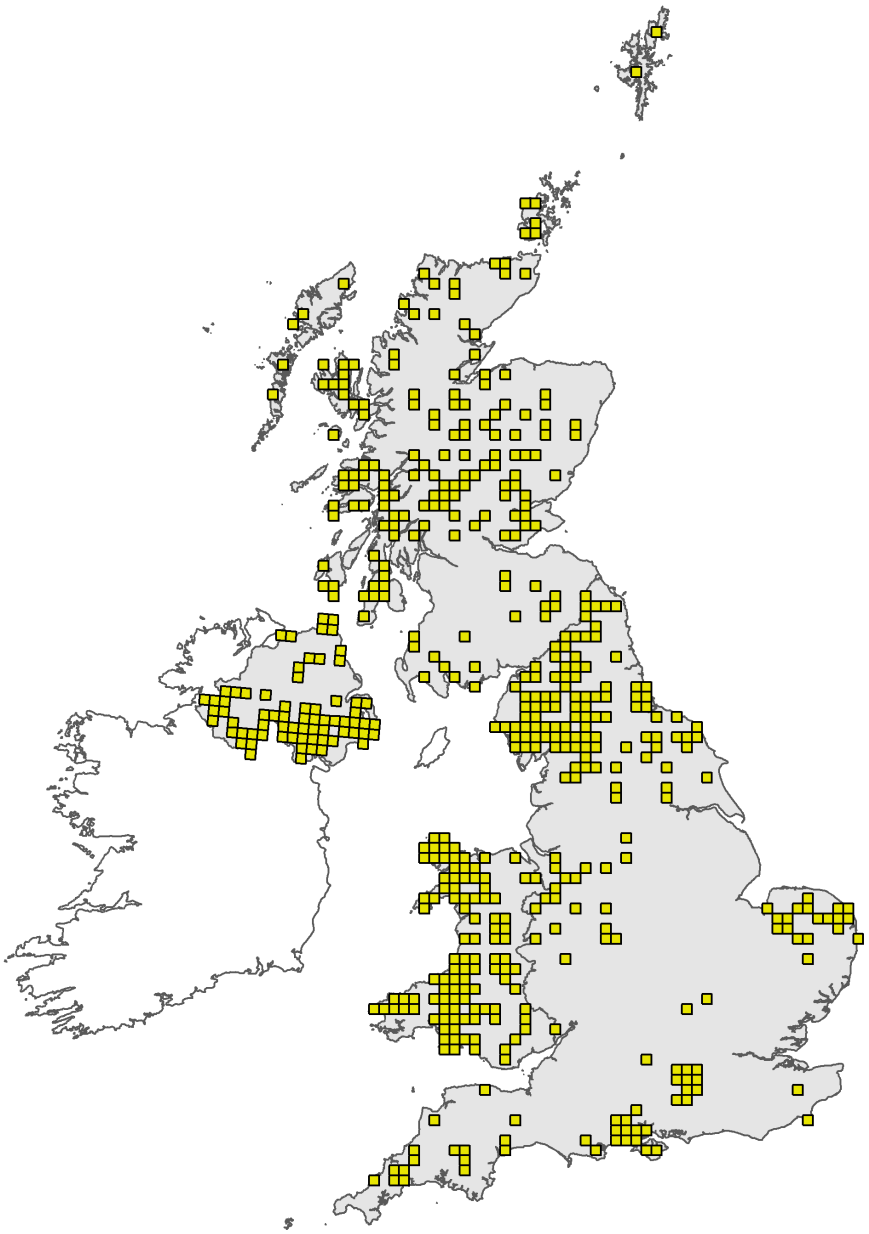

Figure 1: UK distribution map for H7140 - Transition mires and quaking bogs. Coastline boundary derived from the Oil and Gas Authority's OGA and Lloyd's Register SNS Regional Geological Maps (Open Source). Open Government Licence v3 (OGL). Contains data © 2017 Oil and Gas Authority.

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

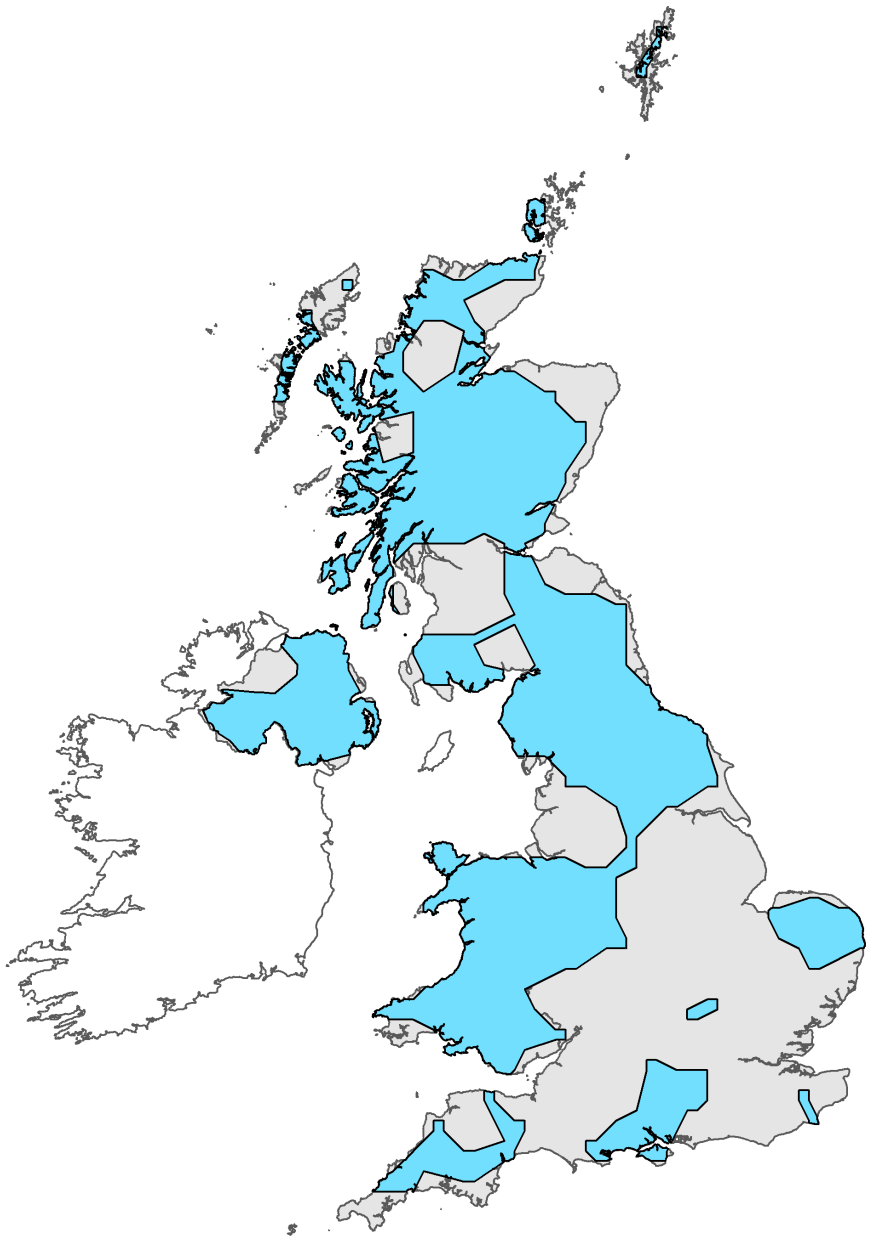

Figure 2: UK range map for H7140 - Transition mires and quaking bogs. Coastline boundary derived from the Oil and Gas Authority's OGA and Lloyd's Register SNS Regional Geological Maps (Open Source). Open Government Licence v3 (OGL). Contains data © 2017 Oil and Gas Authority.

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.

Explanatory Notes

Habitat code: 7140 Region code: ATL

Field label	Note
5.2 Surface area	Update of inventory has refined inventory and removed some large over-estimates of extent of feature on some sites. Quality of information now much improved but still lacking data from some blanket mire complexes, particualrly Border Mires. Some survey here ongoing however.