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:

H7230 - Alkaline fens

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	**7230 - Alkaline fens**

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. & Eades, P. & (2013) Fen Surveys of the North York Moors: Fen Bog, Jugger Howe, Sand Dale, Troutsdale & Rosekirkdale. Report to Natural England; Leeds. Tratt, R., Eades, P. & (2013) Habitats Directive Annex 1 Fen Survey: Devon, Somerset and Shropshire. Report to Natural England: Telford. Tratt, R., Eades, P., O' Reilly, J. & Shaw, S.C. (2015). Survey of Base-rich Wetlands in Cumbria (Group 3). 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. Shaw, S.C. & Tratt, R. (2015). Norfolk Valley Fens SAC. Review of current status, identification of remedies and investigations required. Volume 1. IPENS Technical Report, LIFE11NAT/UK/000384IPENS. Wheeler, B.D. & Shaw, S.C. (1992). Biological indicators of the dehydration and changes to East Anglian fens past and present. ENGLISH NATURE RESEARCH REPORTS No. 20 Diack, I.A. (2015) Natural England SSSI Notification Strategy: SSSI Notification Review and Guidance for Fens. Unpublished Report. Hajek, M, Jirousek, M., Navratilova, J., Horodyska, E., Peterka, T., Pleskova, Z.,Navratil, J., Hajkova, P.,& Hajek, T. (2015) Changes in the moss layer in Czech fens indicate early succession triggered by nutrient enrichment. Preslia 87: 279-301. Mainstone, C., Hall, R. & Diack, I. (2016). A narrative for conserving freshwater and wetland habitats in England. Natural England Research Reports No 064. Natural England (2015) Hydrological functioning theme plan. Restoring the hydrology of Natura 2000 terrestrial wetlands. Diack, I.A. (2017) FAVOURABLE CONSERVATION STATUS: ENGLAND CONTRIBUTION - H7230 ALKALINE FENS. Draft unpublished report.

4. Range

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

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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	While at a coarse country-scale the range is unchanged, within the range sites continue to be lost and degraded, almost entirely in the lowlands and upland fringe.		

5. Area covered by habitat

5.1 Year or period	2018-018-		
5.2 Surface area (in km²)	a) Minimum 20	b) Maximum 25.6	c) Best single value 22.8
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	Decreasing (-)		
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	Much of change in area a result of improved mapping, however, within this there have been losses as well.		

6. Structure and functions

6.1 Condition of habitat	a) Area in good condition (km²)	Minimum 2.1	Maximum 2.72

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	b) Area in not-good condition (km²)	Minimum 15	Maximum 19.9	
	c) Area where condition is not known (km²)	Minimum 3	Maximum 3	
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	Uncertain (u)			
6.5 Short-term trend of habitat area in good condition Method used	Insufficient or no data available			
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	Condition information is largely provided at SSSI unit level. The majority of Alkaline Fen features occur as very small components of large upland SSSI units, most of which are recorded as Unfavourable, due to long-term effects of damaging practices such as overgrazing and burning on the dominant habitats, e.g. upland heath and blanket bog. WIthin these overall unfavourable units, however, in many instances the alkaline fen is in good condition, but often the feature level assessment is not made, so this information is not available. For this reason the figure provided for area in good condition is undoubtedly an underestimate but it is not possible to provide more reliable data. The figure given for 'condition not known' is based on the Alkaline Fen inventory extent figure for non-SSSI sites. It is likely that the condition of these is no better than SSSI sites, and given lack of protection, is probably worse.			

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
Abstraction from groundwater, surface water or mixed water (K01)	M
Mixed source air pollution, air-borne pollutants (J03)	H
Extensive grazing or undergrazing by livestock (A10)	H
Intensive grazing or overgrazing by livestock (A09)	M
Agricultural activities generating diffuse pollution to surface or ground waters (A26)	H
Drainage (K02)	H
Conversion to forest from other land uses, or afforestation (excluding drainage) (B01)	M
Abstraction of surface and ground water for resource extraction (C14)	M

Threat	Ranking
Mixed source pollution to surface and ground waters (limnic and terrestrial) (J01)	H

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Abstraction from groundwater, surface water or mixed water (K01)	M
Mixed source air pollution, air-borne pollutants (J03)	H
Extensive grazing or undergrazing by livestock (A10)	H
Intensive grazing or overgrazing by livestock (A09)	M
Agricultural activities generating diffuse pollution to surface or ground waters (A26)	H
Drainage (K02)	H
Conversion to forest from other land uses, or afforestation (excluding drainage) (B01)	M
Abstraction of surface and ground water for resource extraction (C14)	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, 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		

Reduce diffuse pollution to surface or ground waters from agricultural activities (CA11)
Adapt mowing, grazing and other equivalent agricultural activities (CA05)
Restore habitats impacted by multi-purpose hydrological changes (CJ03)
Adapt/change forest management and exploitation practices (CB05)
Habitat restoration/creation from resources, exploitation areas or areas damaged due to installation of renewable energy infrastructure (CC07)
Manage water abstraction for public supply and for industrial and commercial use (CF11)
Reduce/eliminate air pollution from agricultural activities (CA12)

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		Range - continuing deterioration in lowlands particularly and loss pf typical species likely to continue with loss of features in some counties and ultimately range. Area - similar to above. Structure & functions - atmospheric deposition high & many lowland aquifers feeding sites with very high N loadings. Not likley to be reduced significantly in near future.

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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	17
	b) Maximum	19.4
	c) Best single value	18.7
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		

12. Complementary information

12.1 Justification of % thresholds for trends	
12.2 Other relevant information	

Distribution Map

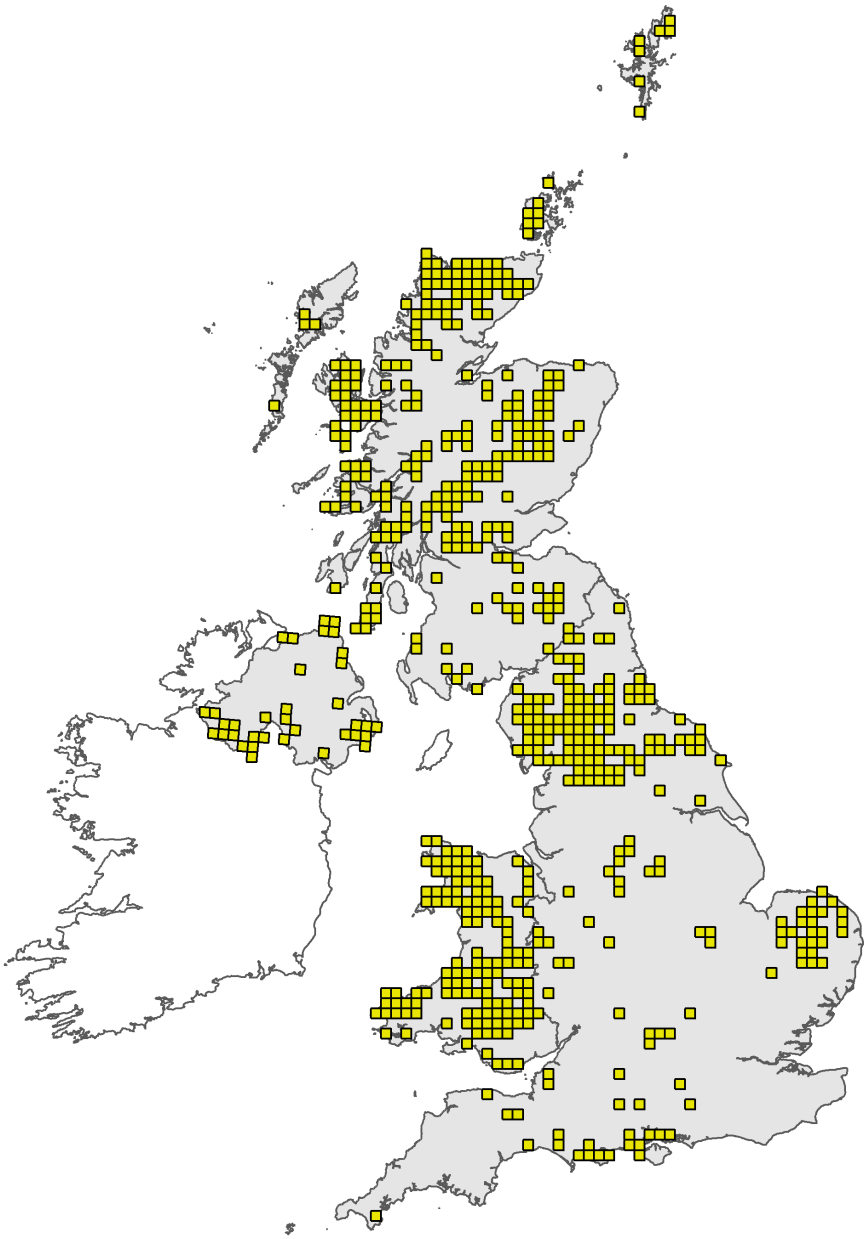

Figure 1: UK distribution map for H7230 - Alkaline fens. Coastline boundary derived from the Oil and Gas Authority's OGA and Lloyd's Register SNS Regional Geological Maps (Open Source). Open Government Licence v3 (OGL). Contains data © 2017 Oil and Gas Authority.

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

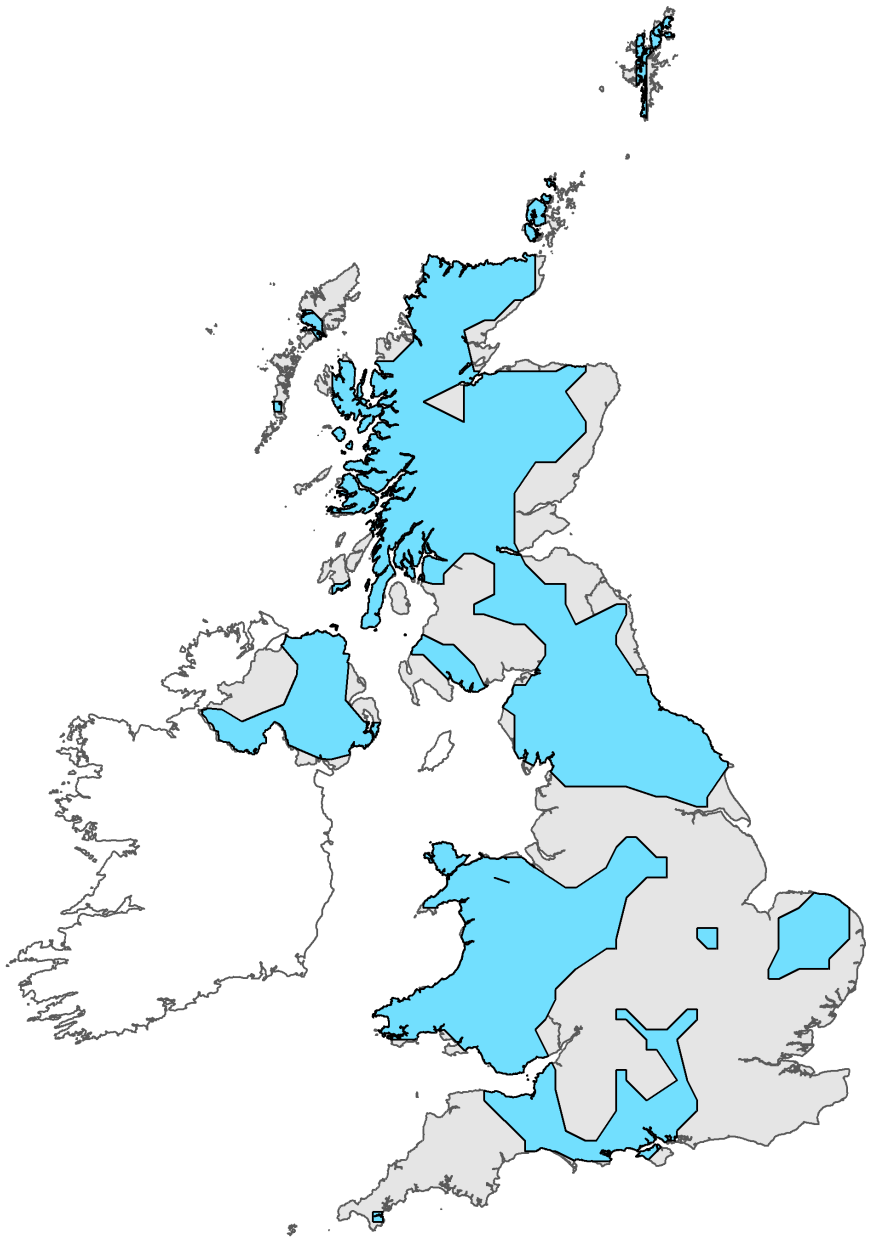

Figure 2: UK range map for H7230 - Alkaline fens. Coastline boundary derived from the Oil and Gas Authority's OGA and Lloyd's Register SNS Regional Geological Maps (Open Source). Open Government Licence v3 (OGL). Contains data © 2017 Oil and Gas Authority.

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: 7230 Region code: ATL

Field label	Note
4.11 Change and reason for change in surface area of range	While at a coarse country-scale the range is unchanged, within the range sites continue to be lost and degraded, almost entirely in the lowlands and upland fringe.
10.3 Specific structure and functions	Condition information is largely provided at SSSI unit level. The majority of Alkaline Fen features occur as very small components of large upland SSSI units, most of which are recorded as Unfavourable, due to long-term effects of damaging practices such as overgrazing and burning on the dominant habitats, e.g. upland heath and blanket bog. WIthin these overall unfavourable units, however, in many instances the alkaline fen is in good condition, but often the feature level assessment is not made, so this information is not available. For this reason the figure provided for area in good condition is undoubtedly an underestimate but it is not possible to provide more reliable data. The figure given for 'condition not known' is based on the Alkaline Fen inventory extent figure for non-SSSI sites. It is likely that the condition of these is no better than SSSI sites, and given lack of protection, is probably worse.