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:

H7210 - Calcareous fens with *Cladium mariscus* and species of the *Caricion davallianae*

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	**7210 - Calcareous fens with Cladium mariscus and species of the Caricion dav**

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	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. Tratt, R., Eades, P., Shaw, S., Wheeler, B. & Parnell, M. (2017) Development of Inventories for Annex 1 Wetland Habitats in England. Draft report to Natural England, Telford. OHES (2014) An Investigation into the Management of Catch Dykes in The Broads. Report to Natural England, Norwich OHES (2016) Remedial Works for the Catch Dykes at Ebb and Flow Marshes. Natural England Commissioned Report NECR239 http://1exagu1grkmq3k572418odoooym-wpengine.netdna-ssl.com/wp-content/uploads/2016/09/GFQC-DM-DG-Inspectors-decision-Catfield.pdf N2K Site Improvements Plans - http://publications.naturalengland.org.uk/category/5458594975711232

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	Improved knowledge/more accurate data		
	The change is mainly due to:	Improved knowledge/more accurate data	
4.12 Additional information			

5. Area covered by habitat

5.1 Year or period	2018-018-		
5.2 Surface area (in km²)	a) Minimum 3.15	b) Maximum 8.69	c) Best single value 5.92
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	Increasing (+)		
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	The reason for change in area is twofold. There have been slight increases in extent as a result of restorative management in core area over last 15 years; in addition development of an inventory for H7210 has identified additional sites/area, and this is major reason for apparent increase in area (as expressed by max value). Further survey will allow more accurate attribution of area to this poorly defined habitat.		

6. Structure and functions

6.1 Condition of habitat	a) Area in good condition (km²)	Minimum 1.63	Maximum 4.04

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	b) Area in not-good condition (km²)	Minimum 1.51	Maximum 3.73	
	c) Area where condition is not known (km²)	Minimum 0.01	Maximum 0.92	
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
Sea-level and wave exposure changes due to climate change (N04)	M
Drainage (K02)	H
Agricultural activities generating diffuse pollution to surface or ground waters (A26)	H
Abandonment of grassland management (e.g. cessation of grazing or mowing) (A06)	H
Abstraction from groundwater, surface water or mixed water (K01)	H
Mixed source air pollution, air-borne pollutants (J03)	M
Modification of hydrological flow (K04)	H

Threat	Ranking
Sea-level and wave exposure changes due to climate change (N04)	M
Drainage (K02)	H
Agricultural activities generating diffuse pollution to surface or ground waters (A26)	H
Abandonment of grassland management (e.g. cessation of grazing or mowing) (A06)	H
Abstraction from groundwater, surface water or mixed water (K01)	H
Mixed source air pollution, air-borne pollutants (J03)	M
Modification of hydrological flow (K04)	H

7.2 Sources of information

7.3 Additional information

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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, 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 - concluded stable, however, borderline negative due to continuing pressures on sites out of core areas (i.e. Broads, East Anglia); Area - stable as losses may be balanced by restoration elsewhere, however, if S&F deteriorate to a critical point in an area then loss of H7120 (area and potentially range) will occur; Structure and functions - negative due to air pollution (similar species to H7230), pressures on edge of range sites, threat of saline influence in some core areas. Status of 'species of Caricion davallianae' particularly concerning - impacts of nutrient enrichment. possibly dehydration, as H7230.

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	3.15
	b) Maximum	7.77
	c) Best single value	5.46
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

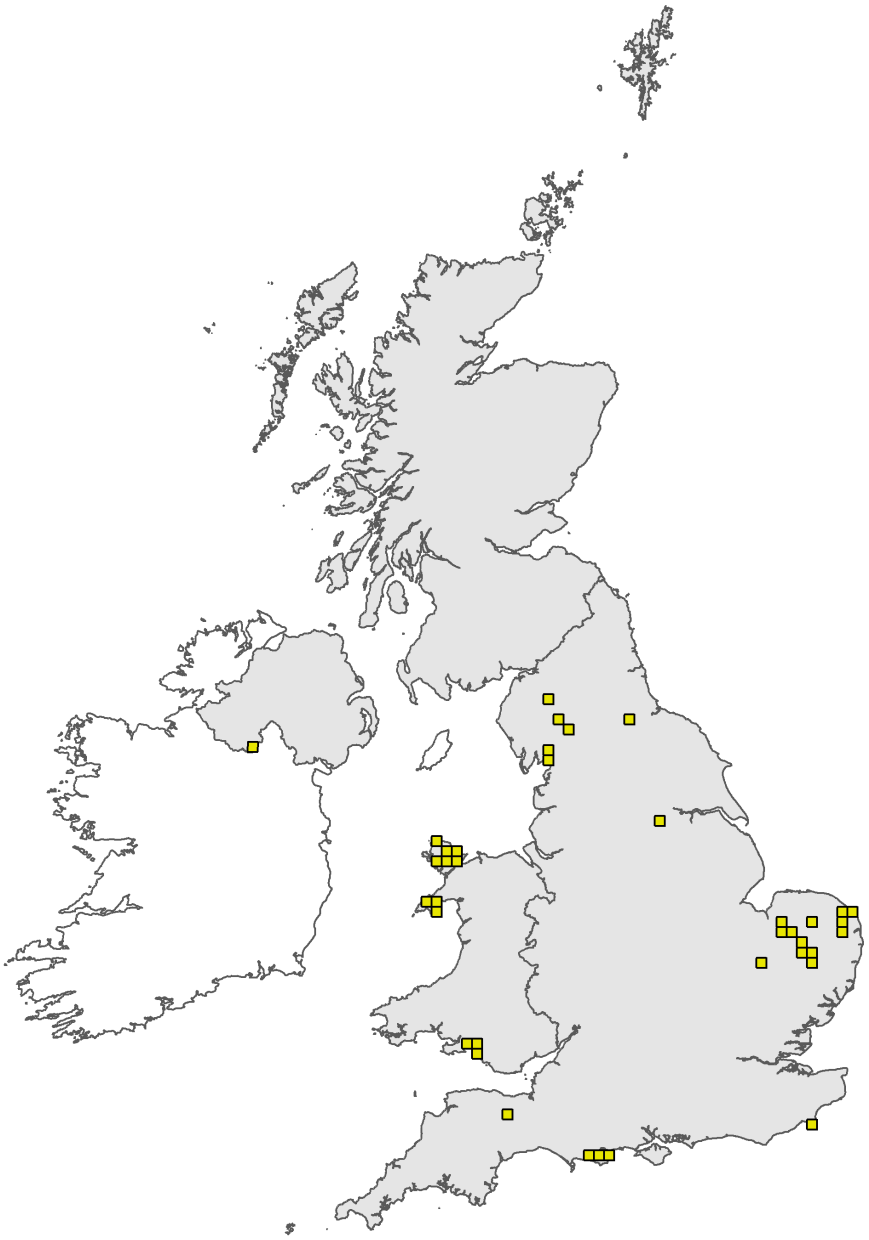

Figure 1: UK distribution map for H7210 - Calcareous fens with *Cladium mariscus* and species of the *Caricion davallianae*. Coastline boundary derived from the Oil and Gas Authority's OGA and Lloyd's Register SNS Regional Geological Maps (Open Source). Open Government Licence v3 (OGL). Contains data © 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 H7210 - Calcareous fens with *Cladium mariscus* and species of the *Caricion davallianae*. 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: 7210 Region code: ATL

Field label	Note
4.11 Change and reason for change in surface area of range	Range extension due to better mapping of habitat through development of inventory.
5.2 Surface area	The reason for change in area is twofold. There have been slight increases in extent as a result of restorative management in core area over last 15 years; in addition development of an inventory for H7210 has identified additional sites/area, and this is major reason for apparent increase in area (as expressed by max value). Further survey will allow more accurate attribution of area to this poorly defined habitat.
9.1 Future prospects of parameters	Range - negative due to continuing pressures on sites out of core areas (i.e. Broads, East Anglia); Area - stable as losses may be balanced by restoration elsewhere; Structure and functions - negative due to air pollution (similar species to H7230), nutrient pressures, particularly pressures on edge of range sites, threat of saline influence in some core areas.