

**European Community Directive
on the Conservation of Natural Habitats
and of Wild Fauna and Flora
(92/43/EEC)**

**Second Report by the United Kingdom under
Article 17
on the implementation of the Directive
from January 2001 to December 2006**

**Conservation status assessment for :
H7230: Alkaline fens**

Please note that this is a section of the report. For the complete report visit <http://www.jncc.gov.uk/article17>

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H7230 Alkaline Fens

Audit trail compiled and edited by JNCC and the UK statutory nature conservation agencies Lowland Wetland Lead Co-ordination Network.

This paper and accompanying appendices contain background and data used to complete the standard EC reporting form (Annex D), following the methodology outlined in the document entitled “Assessment, monitoring and reporting under Article 17 of the Habitats Directive, Explanatory Notes and Guidelines, Final Draft 5, October 2006.” The superscript numbers below cross-reference to the headings in the corresponding Annex D reporting form. This supporting information should be read in conjunction with the UK approach for habitats (see ‘Assessing Conservation Status: UK Approach’).

1. National-biogeographic level information

1.1 General description and correspondence with National Vegetation Classification (NVC) and other habitat types

Table 1.1.1 provides a summary description of H7230 and its relations with UK classifications.

Alkaline fens consist of a complex assemblage of vegetation types characteristic of sites where there is tufa and/or peat formation with a high water table and a calcareous base-rich water supply. The core vegetation is short sedge mire (mire with low-growing sedge vegetation) of the following NVC types:

M9 *Carex rostrata* – *Calliergon cuspidatum/giganteum* mire

M10 *Carex dioica* – *Pinguicula vulgaris* mire

M13 *Schoenus nigricans* – *Juncus subnodulosus* mire

Table 1.1.1 Summary description of habitat H7230 and its relations with UK vegetation/habitat classifications

Classification	Correspondence with Annex I type	Comments
EU Interpretation Manual	PAL.CLASS.: 54.2 Wetlands mostly or largely occupied by peat- or tufa-producing small sedge and brown moss communities developed on soils permanently waterlogged, with a soligenous or topogenous base rich, often calcareous water supply, and with the water table at, or slightly above or below, the substratum.	
NVC	M9 <i>Carex rostrata</i> – <i>Calliergon cuspidatum/giganteum</i> mire M10 <i>Carex dioica</i> – <i>Pinguicula vulgaris</i> mire M13 <i>Schoenus nigricans</i> – <i>Juncus subnodulosus</i> mire	Although these are the core NVC types, at most sites for H7230 there are transitions to various other types of fen, mire, wet heath, wet grassland, fen carr and acid raised bog habitat.
BAP priority habitat type	Fens	Entirely contained within this type. Priority habitat contains many other wetland types.
CSM reporting categories	Fens and marshes - lowland	Category also contains many other wetland types.

At most sites there are well-marked transitions to a range of other fen vegetation, predominantly, but not exclusively, to M14 *Schoenus nigricans* – *Narthecium ossifragum* mire and S24 *Phragmites australis* – *Peucedanum palustre* tall-herb fen in the lowlands. Alkaline fens may also occur with various types of

swamp (such as species-poor stands of great fen-sedge *Cladium mariscus*), wet grasslands (particularly various types of purple moor-grass *Molinia caerulea* grassland) and areas rich in rush *Juncus* species, as well as fen carr and, especially in the uplands, wet heath and acid bogs.

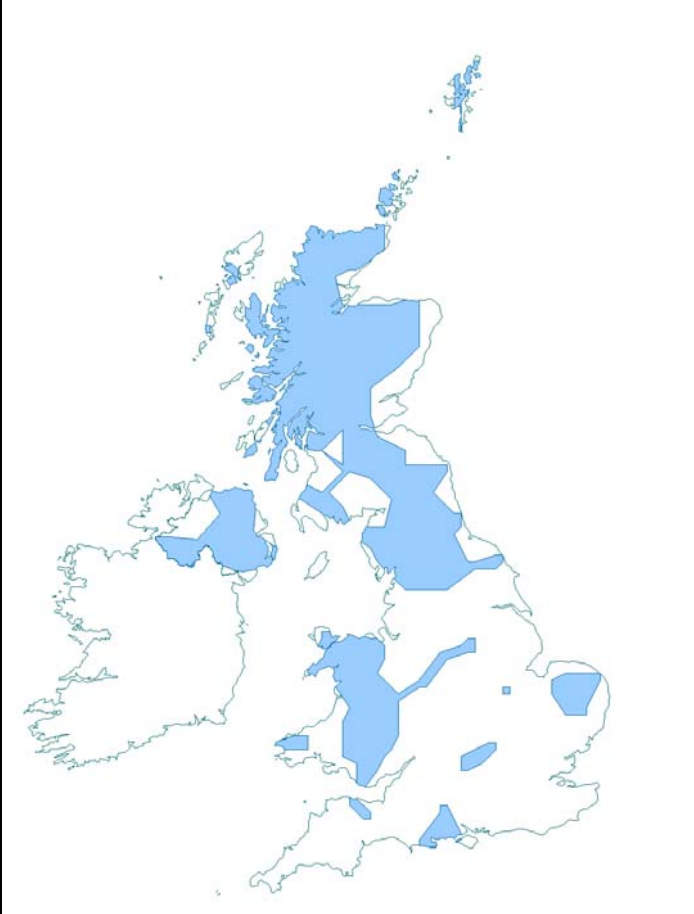
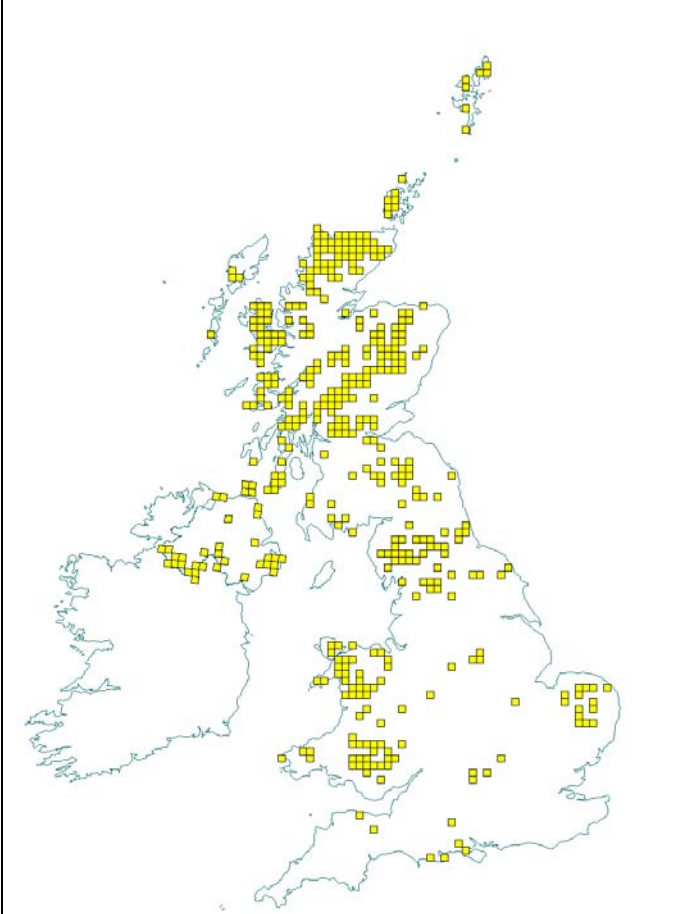
There is considerable variation between sites in the associated communities and the transitions that may occur. Such variation can be broadly classified by the geomorphological situation in which the fen occurs, namely: flood plain mire, valley mire, basin mire, hydroseral fen (i.e. as zones around open waterbodies) and spring fen. Another important source of ecological variation is altitude, with significant differences between lowland fens, which are rich in southern and continental species, and upland fens, which are rich in northern species.

Alkaline fens occur over a widely scattered geographical range in the UK, but are unevenly and locally distributed, with important concentrations of the habitat in East Anglia, in northern England, and on Anglesey in north Wales.

2. Range ^{2.3}

2.1 Current range

Range surface area ^{2.3.1}: **108,178 km²**
 Date calculated ^{2.3.2}: **May 2007**
 Quality of data ^{2.3.3}: **Moderate**

Map 2.1.1 Habitat range map ^{1.1} for H7230	Map 2.1.2 Habitat distribution map ^{1.2} for H7230
	
<p>Range envelope shown in blue/grey shade in above map is a minimum convex polygon constructed using JNCC Alpha Shapes tool (see Technical Note I for details of methodology).</p>	<p>Each yellow square represents a 10x10km square of the National Grid and shows the known and/or predicted occurrence of this habitat. 10-km square count: 423</p>

The surface area estimate was calculated within alpha hull software, using extent of occurrence as a proxy measure for range (see Map 2.1.1). The value of alpha was set at 25 km; the alpha was clipped to include inland areas only. Maps 2.1.1 and 2.1.2 show the range and distribution of H7230 in the UK.

H7230 is dependent upon irrigation by alkaline water coming either from chalk rich ground waters or percolating through the drift. The alkaline fens are often situated below alkaline seepages and flushes and therefore by definition very restricted in spatial extent. The non-continuous nature of the hydrogeological settings that this habitat needs limits the applicability of the 'continuous area' type approach shown in Map 2.1.1.

The overall range and distribution of the habitat as shown in Map 2.1.2 clearly shows that the habitat has a fragmented distribution but is found throughout the UK.

2.2 Trend in range since c.1994

Trend in range^{2.3.4}:	Unknown
Trend magnitude^{2.3.5}:	Not applicable
Trend period^{2.3.6}:	1994-2006
Reasons for reported trend^{2.3.7}:	Not applicable

There is no evidence or information on any trend in range for H7230 since 1994.

2.3 Favourable reference range

Favourable reference range^{2.5.1}: **108,000km²**

Section 3.2.1.3 of 'Assessing Conservation Status: UK Approach' sets out how favourable reference range estimates for habitats have been determined in the UK. Based on this approach, the current surface area, which is approximately 108, 000 km², has been set as the favourable reference area.

The occurrence of this vegetation type is dictated by the availability of alkaline waters irrigating the surface, combined with the correct surface management (e.g. vegetation management and water management).

There is no information on the historic range of this habitat. The current distribution of H7230 appears to occupy most of the potential range. The current range as shown on Map 2.1.1 is quite extensive but naturally limited by geomorphological and hydrological conditions. These requirements also mean that, when combined with past human impacts, the resource has a fragmented distribution within its range, particularly in the lowlands.

Expert opinion suggests that the favourable reference range and distribution is likely to match closely the current range and distribution, of which the best examples are contained within the national and international designated series.

2.4 Conclusions on range

Conclusion^{2.6.1}: **Favourable**

There is no information on any changes in range for H7230 since 1994, nor any previous historical data on extent or changes. However the current range is considered to be close to potential range for the habitats and to its favourable reference range, and so the judgement on range for H7230 is Favourable.

3. Area^{2.4}

3.1 Current area

Total UK extent^{2.4.1}:	>16.32km²
Date of estimation^{2.4.2}:	May 2007

Method^{2.4.3}: **1 = only or mostly based on expert opinion**
Quality of data^{2.4.4}: **Poor**

Table 3.1.1 provides information on the area of H7230 in the UK.

There is no comprehensive data available for the extent of this habitat type in the UK outside of Special Areas of Conservation (SACs). The total of this habitat in SACs has been estimated at 1632ha and the UK total of the resource will exceed this figure.

Table 3.1.1 Area of H7230 in the UK

	Area (ha)	Method ^{2.4.3}	Quality of data ^{2.4.4}
England	Unknown	1	Poor
Scotland	Unknown	1	Poor
Wales	150	1	Poor
Northern Ireland	40	1	Poor
Total UK extent^{2.4.1}	>1632	1	Poor

Method used to estimate the habitat surface area: 1 = only or mostly based on expert opinion; 2 = based on remote sensing data; 3 = ground based survey. Only the most relevant class is given if more than one applies.

Quality of habitat surface area data: 'Good' e.g. based on extensive surveys; 'Moderate' e.g. based on partial data with some extrapolation; 'Poor' e.g. based on very incomplete data or on expert judgement.

3.2 Trend in area since c.1994

Trend in area^{2.4.5}: **Unknown**
Trend magnitude^{2.4.6}: **Not applicable**
Trend period^{2.4.7}: **1994-2006**
Reasons for reported trend^{2.4.8}: **Not applicable**

There is no readily available information on UK trends for the area of H7230 since 1994.

3.3 Favourable reference area

Favourable reference area^{2.5.2}: **Unknown**

Historically the overall trend in area for H7230 is thought to be one of contraction because of (i) direct habitat destruction; (ii) successional loss to woodland, and (iii) various forms of habitat degradation resulting from cultural enrichment, habitat neglect, drainage and (locally) abstraction. However, there is no quantitative information available to confirm this trend nor, particularly given the absence of any data on current or 1994 extent of H7230, to suggest how this might relate to favourable reference area.

3.4 Conclusions on area covered by habitat

Conclusion^{2.6.ii}: **Unknown**

Outside of SACs, the current area of H7230 is not known in the UK. There is no information on any trends in area (including since 1994), or on the historic area of the habitat. In the absence of this information, the conclusion for the area parameter for H7230 is Unknown.

4. Specific structures and functions ^(including typical species)

4.1 Main pressures^{2.4.10}

The following list of main pressures for H7230 has been derived from the six year Common Standards Monitoring (CSM) results for SACs designated for their representation of H7230 and results from the 2005 UK BAP reporting (see <http://www.ukbap.org.uk/GenPageText.aspx?id=104> for further details):

- **Water abstraction (890 Other human induced changes in hydraulic conditions)**

Past and continuing loss of area by drainage and conversion to intensive agriculture. Excessive water abstraction from aquifers has dried up or reduced spring line flows, and generally lowered water tables. Abstractions also have affected the natural balance between the differing water qualities of ground water and surface water.

- **Grazing (140 Grazing)**

Both under and over-grazing have been recorded as reasons for adverse condition of H7230 in the SAC series.

- **Burning (180 Burning)**

Although used as a management tool for some stands of H7230, particularly but not exclusively in the uplands, burning can also damage the regeneration potential at certain sites.

- **Fragmentation (990 Other natural processes)**

Small total area of habitat and critically small population sizes of several key species dependent on the habitat.

- **Absence of or inappropriate management (141 Abandonment of pastoral systems)**

Lack of or inappropriate management of existing fens leading to drying, scrub encroachment and succession to woodland.

- **Pollution (701 Water pollution)**

Valley fens supporting H7230 are particularly susceptible to agricultural run-off within the catchment. Enrichment or hypertrophication can result in substantial adverse changes to key plant communities.

- **Air pollution**

Based on an assessment of relevant literature and exceedence of critical loads (see Technical Note III), this habitat is not considered sensitive to air pollution or there is no relevant critical load available and the judgement is that it is unlikely to be at risk anyway.

4.2 Current condition

4.2.1 CSM condition assessments

Condition assessments based on CSM (see <http://www.jncc.gov.uk/page-2199>) provide a means to assess the structure and functioning of H7230 in the UK. The following attributes were examined for all CSM assessments relevant to the habitat:

- Extent.
- Composition (habitat and vegetation).
- Structure.
- Positive and negative indicator species.
- Indicators of local distinctiveness.

SAC condition assessments

Table 4.2.1 and Map 4.2.1 summarise the CSM condition assessments for UK SACs supporting habitat H7230. These data were collated in January 2007. The maps give an impression of the overall spread of where Unfavourable and Favourable sites exist (summary statistics for the map are given in Section 7.2). The combined assessments show that of the SACs assessed:

- 95% of the area and 64% of the number of assessments was Unfavourable; and
- an unknown % of the total UK habitat area was in Unfavourable condition.

SSSI/ASSI condition assessments

Table 4.2.2 and Maps 4.2.2 and 4.2.3 summarise the CSM condition assessments that were judged to be either strongly or weakly indicative of the condition of the Annex I habitat on SSSI/ASSIs (see Technical Note II for details of methodology behind this). These data were collated in January 2007. The maps give an impression of the overall spread of where unfavourable and favourable sites exist (summary statistics for the maps are given in Section 7.2). The combined condition assessments show that of the SSSI/ASSI assessments considered:

- 49% of strongly indicative assessments and 47% of weakly indicative assessments were Unfavourable.

Table 4.2.1 CSM condition assessment results for UK SACs supporting H7230. See notes below table for details. Information on the coverage of these results is given in Section 7.2

Condition	Condition sub-categories	Area (ha)	Number of site features
Unfavourable	Declining	566	4
	No change	438	14
	Unclassified	18	2
	Recovering	504	9
	Total	1,526	29
	<i>% of all assessments</i>	95%	64%
	<i>% of total UK resource</i>	unknown	unknown
Favourable	Maintained	43	9
	Recovered	09	1
	Unclassified	32	6
	Total	85	16
	<i>% of all assessments</i>	5%	36%
	<i>% of total UK resource</i>	Unknown	unknown

Notes

1. Data on features that have been partly-destroyed have been excluded from this table because they are not relevant to the consideration of present condition.
2. The data included are from CSM assessments carried out between April 1998 and December 2006. NB: these include additional and some up-date data from those used in the six year report produced by JNCC. (Williams, J.M., ed. 2006. *Common Standards Monitoring for Designated Sites: First Six Year Report*. Peterborough, JNCC).
3. Only assessments made for qualifying interest features on SAC have been included in this analysis.
4. Area figures for CSM assessments have been calculated using the data presented on the standard Natura 2000 data forms submitted to the EU.

Table 4.2.2 CSM condition assessment results for UK SSSI/ASSIs that were judged to be either strongly or weakly indicative of the condition of H7230 on SSSI/ASSIs. See notes below table and Technical Note II for further details

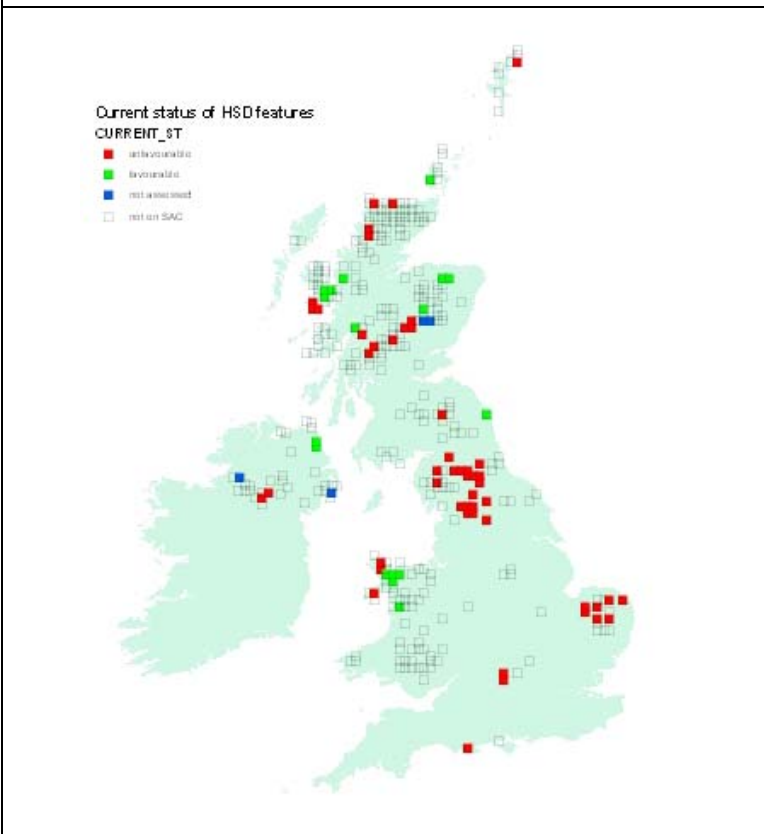
Condition	Condition sub-categories	Number of assessments	
		Strongly indicative assessments (Category 1)	Weakly indicative assessments (Category 2)
Unfavourable	Declining	9	9
	No change	8	16
	Unclassified	4	18
	Recovering	8	27
	Total	29	70
	<i>% of all assessments</i>	49%	47%
Favourable	Maintained	19	28
	Recovered		
	Unclassified	11	50
	Total	30	78
	<i>% of all assessments</i>	51%	53%

Notes

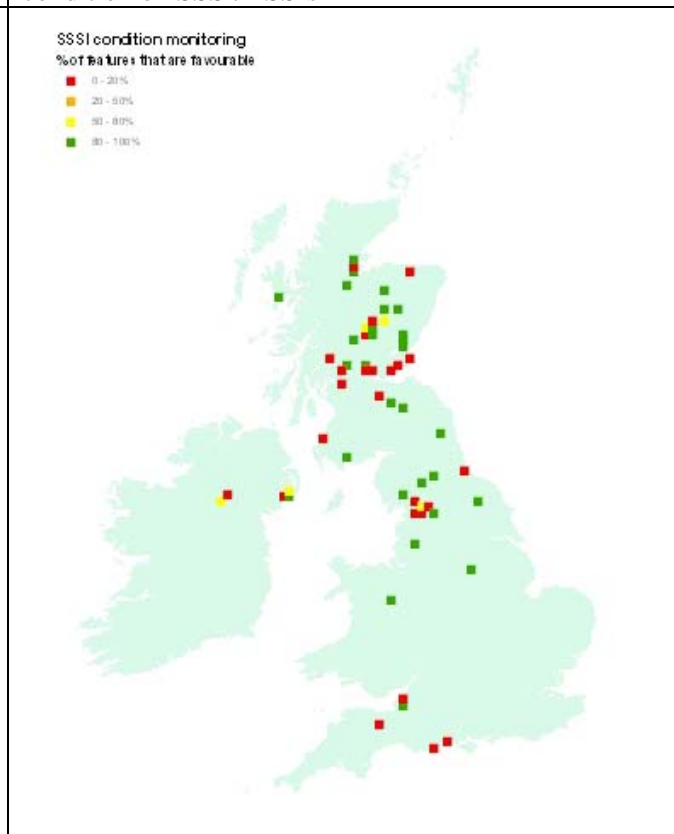
1. Data on features that have been partly-destroyed have been excluded from this table because they are not relevant to the consideration of present condition.
1. The data included are from CSM assessments carried out between April 1998 and December 2006.

Current Condition of H7230 based on Common Standard Monitoring condition assessments (See Sections 4.2 and 7.2 for further information)

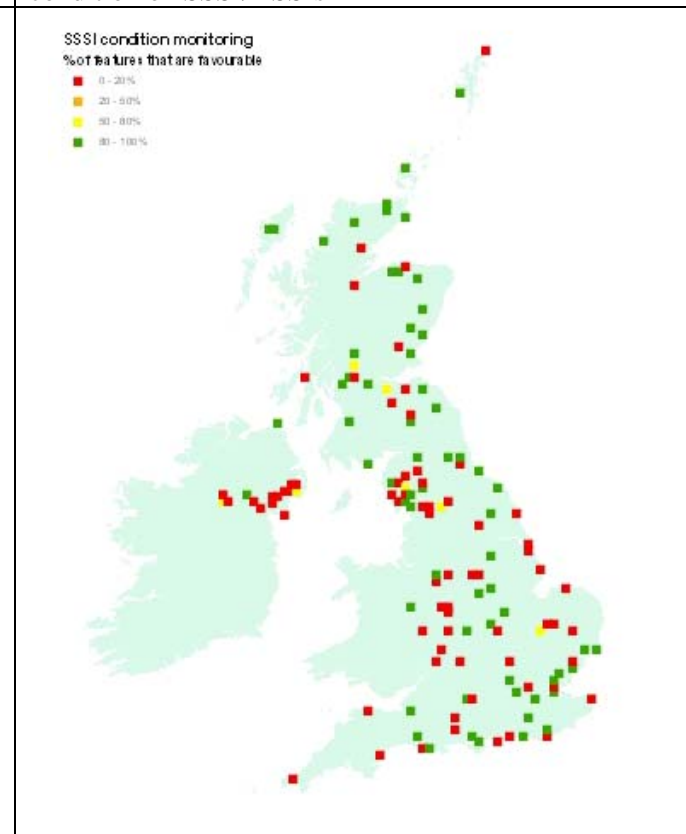
Map 4.2.1 SAC assessments



Map 4.2.2 Assessments strongly indicative of the condition on SSSI/ASSIs



Map 4.2.3 Assessments weakly indicative of the condition on SSSI/ASSIs



Key
Red = unfavourable, i.e. the square contains at least one SAC where this habitat feature is present and has been judged to be unfavourable
Green = favourable, i.e. the square contains at least one SAC where this habitat feature is present and has been assessed as favourable but there are no unfavourable SAC features
Blue = SAC not assessed, i.e. the square contains at least one SAC supporting this habitat feature but no assessment has been reported
Transparent = SAC feature not present, i.e. the square does not contain any SAC features of this habitat type

Key*
Green – 80 – 100% of assessed features on 10km square are favourable
Yellow - 50 – 80% of assessed features on 10km square are favourable
Orange - 20 – 50% of assessed features on 10km square are favourable
Red - 0 – 20% of assessed features on 10km square are favourable
 *This is the same key as was used for JNCC CSM Report 2006

4.3 Typical species

Typical species ^{2.5.3} :	<i>Dactylorhiza traunsteineri</i> , <i>Eriophorum latifolium</i> , <i>Isolepis setacea</i> , <i>Minuartia stricta</i> , <i>Ophrys insectifera</i>
Typical species assessment ^{2.5.4} :	Change in 10 km square occupancy across UK over last 25 years

The trends of the following typical species are considered to indicative or informative on the structure and function of the UK resource of H7230.

Table 4.3.1 Trends and faithfulness of selected typical species for H7230

Typical species considered:	Faithfulness to habitat H7230 (based on analysis of NVC synoptic tables)	Trend over last 25 years from BSBI atlas - based on change in 10 km square occupancy across UK (see http://www.jncc.gov.uk/page-3254)
<i>Dactylorhiza traunsteineri</i>	Medium	Significant increase $\geq 25\%$ in 25yrs
<i>Eriophorum latifolium</i>	Medium	Significant increase, but $< 25\%$ in 25yrs
<i>Isolepis setacea</i>	Medium	Significant increase, but $< 25\%$ in 25yrs
<i>Minuartia stricta</i>	Medium	No significant change
<i>Ophrys insectifera</i>	Medium	Significant decline $\geq 25\%$ in 25yrs

None of the other species listed as characteristic of this habitat in the EU Interpretation Manual are particularly faithful to this habitat so available trend data at the UK-level is not particularly meaningful and has not been utilised here. Overall the trend for this species suggests an improvement in the condition of the wider resource of H7230; however there are no trends for the species since.

4.4 Conclusions on specific structures and functions (including typical species)

Conclusion^{2.6.iii}: Unfavourable – Bad

The EC Guidance states that where “more than 25% of the area of the habitat is unfavourable as regards its specific structures and functions”, the conclusion should be Unfavourable – Bad. In the UK this was generally taken to mean that more than 25% of the habitat area is in unfavourable condition.

Common Standards Monitoring data for 2000-2006 for SACs and particularly SSSIs suggest very high proportions of statutory sites supporting H7230 are unfavourable (95% for SACs and around 47-49% for SSSIs/ ASSIs). Around 31% of the assessed SAC area is recovering but around 35% is declining, suggesting a slight net decline in the condition of H7230 in these sites.

The knowledge of the occurrence of this habitat outside the protected series is limited to England. Information here suggests that somewhere between 52 and 88% of those sites containing vegetation corresponding to the core NVC communities (M9, M10 or M13) are within the protected sites system. In the absence of any estimate of the total area of the habitat in the UK, the figures from CSM data for the protected sites series have been extrapolated as being representative of the UK resource overall and this suggests that much more than 25% of the UK area for H7230 is in unfavourable condition. With almost the same amount of the assessed SAC resource in the Unfavourable category declining as recovering, this suggests a judgement of Unfavourable – Bad for the structure and function parameter for H7230.

5. Future prospects

5.1 Main factors affecting the habitat

5.1.1 Conservation measures

- Protection within SACs

A significant proportion of the current resource of H7230 lies within SACs with management measures specifically aimed at maintaining and enhancing the features for which they are designated, and to address some of the pressures listed within Section 4.1 and the future threats listed in Section 5.1.2.

An unknown but significant proportion of the resource of H7230 also lies within the SSSI/ASSI series where similar management measures are in place.

- Agri-environment measures

A suite of agri-environment measures are now in place in both the uplands and lowlands which are addressing more appropriate management, particularly grazing levels, for an unknown proportion of the resource of H7230 outside the statutory site series.

- Water Framework Directive

In addition to the drive for improvement generated by the SAC and SSSI network, the Water Framework Directive (WFD) is adding considerable impetus for widespread action on issues affecting the resource of H7230 such as abstraction licences and pollution.

- UK BAP

The habitat is covered by the fens action plan under the UK Biodiversity Action plan (see <http://www.ukbap.org.uk>), as well as under country and local biodiversity action plans and strategies, with targets to maintain, improve, restore and expand the resource.

5.1.2 Main future threats^{2.4.11}

The most obvious major future threats to H7230 are listed below, several of which are referred to in Section 4.1. The measures identified in section 5.1.1 are addressing some of these factors, with a greater proportion being addressed within the statutory site series:

- Water abstraction (**890 Other human induced changes in hydraulic conditions**)
- Grazing (**140 Grazing**)
- Burning (**180 Burning**)
- Fragmentation (**990 Other natural processes**)
- Absence of or inappropriate management (**141 Abandonment of pastoral systems**)
- Pollution (**701 Water pollution**)
- Climate change (**750 Other pollution or human impacts/ activities**)

Based on the literature review (Technical Note IV) climate change is considered a major threat to the future condition of this habitat especially in the long term. However, there is a high degree of uncertainty in defining future climate threats on habitats and species due to uncertainty in: future greenhouse gas emissions; the consequential changes in climatic features (for instance temperature, precipitation CO₂ concentrations); the responses of habitats and species to these changes (for instance location, phenology, community structure) and the role of other socio-economic drivers of environmental change. The scale of change in habitats and species as a result of climate change will vary across ecosystems. Small changes in the climate are more likely to have a substantial impact on habitats and species which exist within a narrow range of environmental conditions. The future impacts of climate change on UK biodiversity will be exacerbated when coupled with other drivers of environmental change.

- Air pollution

Based on an assessment of relevant literature and exceedence of critical loads (see Technical Note III), this habitat is not considered sensitive to air pollution or there is no relevant critical load available and the judgement is that it is unlikely to be at risk anyway.

5.2 Future condition (as regards range, area covered and specific structures and functions)

5.2.1 CSM condition assessments

The CSM condition assessments reported in Sections 4.2.1-2 provide a basis to predict the potential future condition of H7230 in the UK. This involved treating all assessments currently identified as either favourable or unfavourable recovering as future-favourable: remaining categories were treated as future-unfavourable – see Table 5.2.1. There are a number of caveats to this approach, which are set out beneath this table.

SAC condition assessments

Table 5.2.1 and Map 5.2.1 summarise the predicted potential future condition of H7230 on UK SACs. This is based on the approach described above. The maps give an impression of the overall spread of where future-unfavourable and future-favourable sites are predicted to occur (summary statistics for the map are given in Section 7.2). The combined assessments show that of the SACs assessed:

- 37% of the area and 56% of the number of assessments fall within the future-favourable category; and
- an unknown amount of the total UK habitat area falls within the future-favourable category.

Table 5.2.1 Predicted future condition of UK SACs supporting H7230 based on current CSM condition assessments. See notes below table for details. Information on the coverage of these results is given in Section 7.2

Future condition	Present condition	Area (ha)	Number of site features
Future-unfavourable	Unfavourable declining	566	4
	Unfavourable no change	438	14
	Unfavourable unclassified	18	2
	Total	1,022	20
	<i>% of assessments</i>	63%	44%
	<i>% of total UK extent</i>	unknown%	Unknown
Future-favourable	Favourable maintained	43	9
	Favourable recovered	09	1
	Unfavourable recovering	504	9
	Favourable unclassified	32	6
	Total	588	25
	<i>% of assessments</i>	37%	56%
	<i>% of total extent</i>	unknown%	Unknown

Note that the scenario presented above is based on the same information as used to construct the Table in section 4.1. It is based on the following premises:

- the unfavourable-recovering condition assessments will at some point in the future become favourable;
- all unfavourable-unclassified sites will remain unfavourable, which is probably overly pessimistic;
- sympathetic management will be sustained on sites already classified as favourable and these will not be seriously damaged by any unforeseen events.

IMPORTANT NOTE: We do not have information on the timescale of the predicted recovery, which may be influenced by many past, natural and human related factors. A sustained, sympathetic management regime is more likely to result in 'favourable' condition being attained.

Table 5.2.2 Predicted future condition of H7230 on SSSI/ASSIs based on CSM assessments that were judged to be either strongly or weakly indicative of the condition. See notes below table and Technical Note II for further details.

Future condition	Present condition	Number of assessments	
		Strongly indicative assessments (Category 1)	Weakly indicative assessments (Category 2)
Future-unfavourable	Unfavourable declining	9	9
	Unfavourable no change	8	16
	Unfavourable unclassified	4	18
	Total	21	43
	<i>% of assessments</i>	36%	29%
Future-favourable	Favourable maintained	19	28
	Favourable recovered		
	Unfavourable recovering	8	27
	Favourable unclassified	11	50
	Total	38	105
	<i>% of assessments</i>	64%	71%

Note that the scenario presented above is based on the same information as used to construct the Table 4.2.2. It is based on the following premises:

- (i) the unfavourable-recovering condition assessments will at some point in the future become favourable;
- (ii) all unfavourable-unclassified sites will remain unfavourable, which is probably overly pessimistic;
- (iii) sympathetic management will be sustained on sites already classified as favourable and these will not be seriously damaged by any unforeseen events.

IMPORTANT NOTE: We do not have information on the timescale of the predicted recovery, which may be influenced by many past, natural and human related factors. A sustained, sympathetic management regime is more likely to result in Favourable condition being attained.

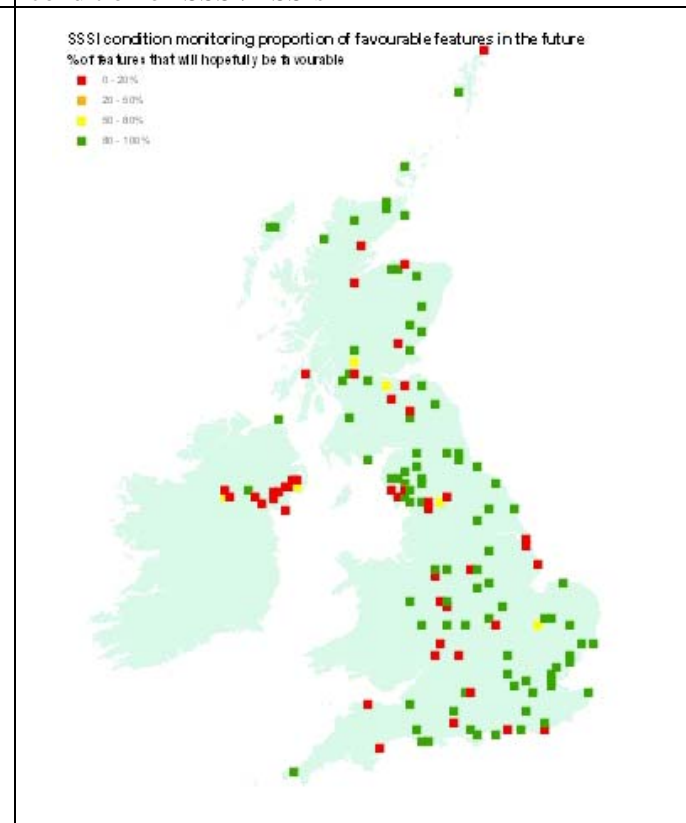
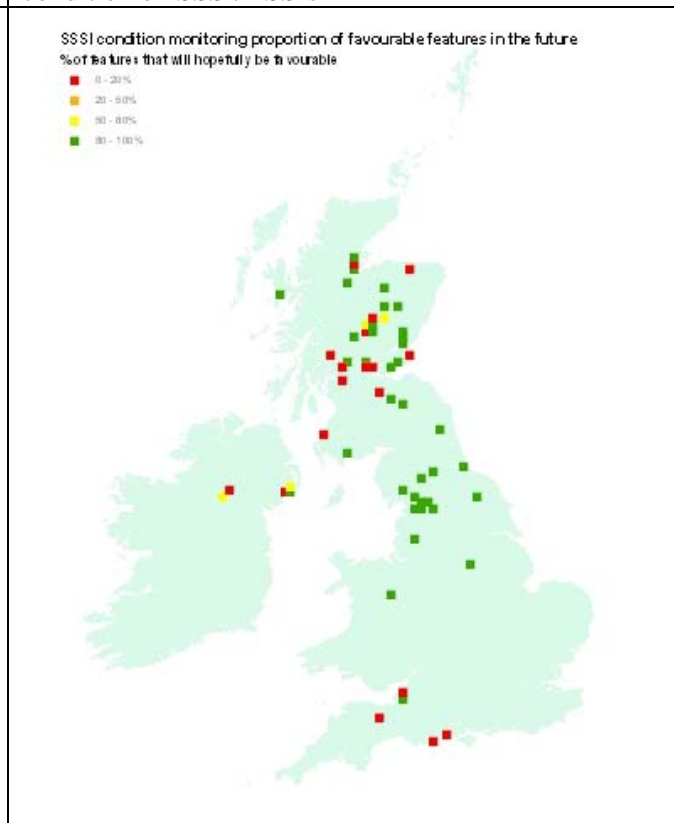
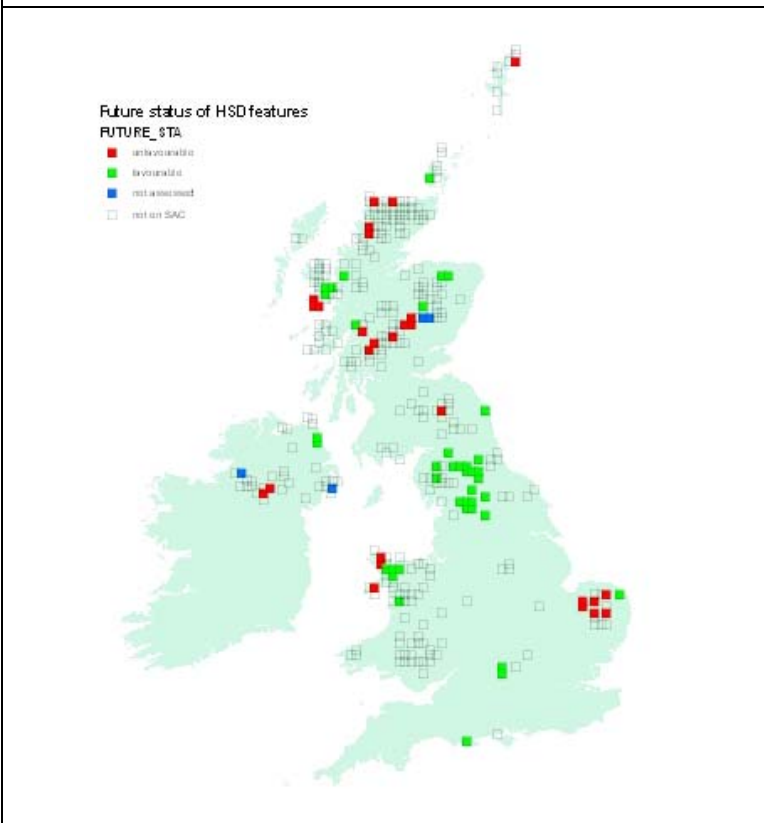
SSSI/ASSI condition assessments

Table 5.2.2 and Maps 5.2.2 and 5.2.3 summarise the predicted potential future condition of H7230 on UK SSSI/ASSIs. This is based on the approach described above and utilises condition assessments that were judged to be either strongly or weakly indicative of the condition of the Annex I habitat on SSSI/ASSIs (see Technical Note II for details of methodology behind this). The maps give an impression of the overall spread of where unfavourable and favourable sites exist (summary statistics for the maps are given in Section 7.2). The combined condition assessments show that of the SSSI/ASSI assessments considered:

- 64% of strongly indicative assessments and 71% weakly indicative assessments fall within the future-favourable category.

Predicted Future Condition of H7230 based on Common Standard Monitoring condition assessments (See Sections 5.2 and 7.2 for further information on these maps)

Map 5.2.1 SAC assessments **Map 5.2.2** Assessments strongly indicative of the condition on SSSI/ASSIs **Map 5.2.3** Assessments weakly indicative of the condition on SSSI/ASSIs



Key
Red = future-unfavourable, i.e. the square contains one or more SACs where this habitat feature is present and has been predicted to be future-unfavourable
Green = future-favourable, i.e. the square contains at least one SAC where this habitat feature is present and has been predicted to be future-favourable
Blue = SAC not assessed, i.e. the square contains at least one SAC supporting this habitat feature but no assessment has been reported
Transparent = SAC feature not present, i.e. the square does not contain any SAC features of this habitat type

Key*
Green – 80 – 100% of assessed features on 10km square are favourable
Yellow - 50 – 80% of assessed features on 10km square are favourable
Orange - 20 – 50% of assessed features on 10km square are favourable
Red - 0 – 20% of assessed features on 10km square are favourable
 *This is the same key as was used for JNCC CSM Report 2006

5.3 Conclusions on future prospects (as regards range, area covered and specific structures and functions)

Conclusion^{2.6.iv}: Unfavourable – Bad but improving

The EC Guidance states that where “habitat prospects are bad, with severe impacts from threats expected and long-term viability not assured”, the judgement should be Unfavourable – Bad. In the UK, this was generally taken to mean that habitat range and/or area are in decline, and/or less than 75% of the habitat area is likely to be in favourable condition in 12-15 years.

Many of the future threats and pressures (particularly grazing; lack of or inappropriate management; over-abstraction; and aquatic pollution) on H7230 are being addressed for the unknown proportion of the resource within the statutory site series; and (through Water Framework Directive, agri-environment measures and similar positive management) for an unknown proportion of the resource of H7230 lying outside the statutory site series. However even within the SAC series 63% of the area (and in SSSIs/ ASSIs, between 29% and 36% of assessed features) of H7230 is likely to remain unfavourable. Extrapolating beyond the statutory site series this suggest that more than 25% of the overall UK resource will be in unfavourable condition in the immediate future (the next 15-20 years).

Although there is no evidence to suggest a future decline in the area of H7230 in the UK by more than 1% p.a., the evidence from future favourability from Common Standards Monitoring suggest that a substantial but unknown proportion of the total resource of H7230 is likely to remain in poor condition. However whilst some threats (particularly pollution and - to a lesser extent given the focus on the next 10-15 years – climate change) are less readily addressed, there are prospects for further control of some of the future threats through extension of agri-environment and Water Framework Directive initiatives, as well as positive management mechanisms.

Consideration of the above leads to a judgement of Unfavourable - Bad but improving for the future prospects for H7230.

6. Overall conclusions and judgements on conservation status^{2.6}

Conclusion^{2.6}: Unfavourable – Bad

On the basis of the Structure and Function and Future Prospects assessments, the overall conclusion for this habitat feature is Unfavourable – Bad.

Table 6.1 Summary of overall conclusions and judgements

Parameter	Judgement	Grounds for Judgement	Confidence in judgement*
Range	Favourable	Current range is not less than the favourable reference range.	3
Area covered by habitat type within range	Unknown	Insufficient information to make a judgement.	3
Specific structures and functions (including typical species)	Unfavourable – Bad	More than 25% of the habitat area is considered to be unfavourable as regards its specific structures and functions.	3
Future prospects (as regards range, area covered and	Unfavourable – Bad but improving	Habitat prospects over next 12-15 years considered to be bad, with severe impact from threats expected and long term viability not assured. Measures are in place and planned to address	3

specific structures and functions)		threats to future range, extent and structure and function for the overall UK resource.	
Overall assessment of conservation status	Unfavourable – Bad	Two parameters judged as Unfavourable - Bad.	3

Key to confidence in judgement: 1 = High; 2 = Medium; 3 = Low

7. Annexed material (including information sources used 2.2)

7.1 References

JACKSON, D.L. & MCLEOD, C.R. (eds.) 2002. Handbook on the UK status of EC Habitats Directive interest features: provisional data on the UK distribution and extent of Annex I habitats and the UK distribution and population size of Annex II species. *JNCC Report* No. 312. Version 2. www.jncc.gov.uk/page-2447

JOINT NATURE CONSERVATION COMMITTEE. 2005. *Common Standards Monitoring (CSM)*. Joint Nature Conservation Committee, Peterborough. www.jncc.gov.uk/page-2217

Map data sources

British Plant Communities.1995. Volumes 1-5. Cambridge University Press, Cambridge.

Inter-agency Coastal Specialist Working Group. 1999.

JNCC International Designations Database. Joint Nature Conservation Committee.

Peatland Survey. 1988. Environmental Heritage Service & Queens University Belfast.

SNH Uplands Database, (18-12-98) 10KMVEG.XLS. Scottish Natural Heritage.

7.2 Further information on CSM data as presented in Sections 4.2 and 5.2

Table 7.2.1 Summary of the coverage of the data shown in Tables 4.2.1 and 5.2.1

Data	Value
Number of SACs supporting feature (a)	49
Number of SACs with CSM assessments (b)	45
% of SACs assessed (b/a)	92
Extent of feature in the UK – hectares (c)	
Extent of feature on SACs – hectares (d)	1,633
Extent of features assessed – hectares (e)	1,610
% of total UK hectarage on SACs (d/c)	
% of SAC total hectarage that has been assessed (e/d)	99
% of total UK hectarage that has been assessed (e/c)	

Table 7.2.2 Summary of grid square map data shown in Maps 4.2.1-3 and 5.2.1-3

Status	Number of squares	Proportion of all squares
Current – Unfavourable (red)	50	14%
Current – Favourable (green)	17	5%
On SAC but not assessed (blue)	4	1%
Not on SAC (transparent)	280	80%
Total Number of 10km squares (any colour)	351	
Future – Unfavourable (red)	27	8%
Future – Favourable (green)	40	11%