

**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 :

**H6130: Calaminarian grasslands of the *Violetalia
calaminariae***

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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H6130 Calaminarian grasslands of the *Violetalia calaminariae*

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

This paper and accompanying appendices contain background information and data used to complete the standard EC reporting form (Annex D), following the methodology outlined in the commission document “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 H6130 and its relations with UK classifications.

H6130 Calaminarian grasslands of the *Violetalia calaminariae* is a varied habitat incorporating grasslands contaminated by heavy metals, especially lead, copper and zinc, in which that contamination has had a clear influence on sward floristics. The JNCC account for the habitat (Jackson and McLeod 2000), version on web site) lists three principal occurrences:

- Near-natural, open vegetation of serpentine rock and mineral vein outcrops with skeletal soils;
- Stable river gravels rich in lead and zinc and that are near-natural, although the heavy metal content may be partly an artefact of past mining activity in the river catchment;
- Artificial mine workings and spoil heaps, mainly on limestone; these are numerous (several thousand UK localities) and extensive, although few sites have a high species-richness.

Although H6130 includes a compendium of different forms of grassland over heavy metal-rich soils, only one Calaminarian community is recognised in the NVC, *Festuca ovina* – *Minuartia verna* community (OV37), which is restricted to contaminated sites over calcareous bedrock. Other forms of Calaminarian grassland represented in the UK Special Area of Conservation (SAC) series include inland vegetation with a prominence of maritime species such as *Armeria maritima* and *Silene maritima* or metal-tolerant ecotypes, and swards with metallophyte cryptogams such as *Ditrichum plumbicola* and certain lichens (see 4.1).

Calaminarian grasslands are usually distinctive and easily partitioned from other forms of grassland by the prominence of metallophyte species. However, there is a degree of correspondence with other dry grasslands types, including acid grasslands and (in the case of OV37) calcareous grasslands.

Summary of floristics and key species

Calaminarian grasslands are a varied assemblage of communities characterised by a range of vascular and non-vascular plant species. They are referable to the *Thlaspiion-Calaminariae* alliance, an order which includes all natural and anthropogenic heavy metal swards in Europe.

In the UK, the vegetation is typically species-poor, but contains a number of species principally found in this habitat (metallophytes), most notably spring sandwort *Minuartia verna* (the key species of OV37) and alpine penny-cress *Thlaspi caerulescens*. There is a genetically-adapted range of other species (pseudometallophytes), such as sheep’s fescue *Festuca ovina* (Lambinon and Auquier 1963), bladder campion *Silene vulgaris*, sea campion *Silene uniflora* and thrift *Armeria maritima*. Heavy metal toxicity

of the soils, perhaps combined with a low nutrient status, is believed to keep the vegetation open, retarding succession. The rarer species are favoured by lack of competition from more vigorous colonists (Baker and Proctor 1990).

Calaminarian grasslands and associated rock outcrops provide a habitat for a range of rare or geographically restricted vascular plants. Some species are limited to very few sites, such as two endemic mouse-ears *Cerastium nigrescens* and *C. fontanum* spp. *scoticum*, which are confined to the Scottish Serpentine. Calaminarian grassland also provides an important habitat for rare or scarce species of somewhat wider habitat preferences, such as northern rock-cress *Arabis petraea*, Cyphel *Minuartia sedoides*, Young's helleborine *Epipactis youngiana* and forked spleenwort *Asplenium septentrionale*.

The Annex I type also includes assemblages of metal-tolerant cryptogams on mine waste, even where metallophyte higher plants are scarce or lacking. A suite of rare and restricted plants occur, among them the metallophyte mosses *Ditrichum plumbicola* and *Scopelophila cataractae* and liverworts such as *Cephaloziella stellulifera* and *C. integerrima*. Some bryophytes are restricted to very few Calaminarian grassland localities, for example *D. cornubicum* (two Cornish sites) and *Grimmia ungeri* (two or three Scottish Serpentine sites). Similarly restricted metallophyte lichens include *Gylidea subscutellaris*, *Lecanora handelii* and *Cladonia fragilissima*.

The value of Calaminarian grasslands for invertebrates has also been recognised (Spalding 1996), although there appear to be no examples of invertebrate or higher fauna that are entirely restricted to Calaminarian grassland in the UK. The habitat provides niches for a range of species, notably those reliant on areas of bare or partially vegetated ground such as mining hymenoptera. In Cornwall, Calaminarian grassland is considered to provide a significant proportion of the habitat resource for Greyling *Hipparchia semele* (Spalding 2005).

The overall distribution of most of the key vascular plants of the habitat, such as *Minuartia verna* and *Thlaspi caerulescens*, appears to have been broadly stable over the last 40 years (Preston *et al.*, 2000), but this does not account for the loss of local populations and concomitant reductions in patch size and numbers of localities for the habitat.

Table 1.1.1 Summary description of habitat H6130 and its relations with UK vegetation/habitat classifications

Classification	Correspondence with Annex I type	Comments
EU Interpretation Manual	34.2 Calaminarian grasslands.	
NVC	OV37 <i>Festuca ovina</i> – <i>Minuartia verna</i> community.	The NVC has recognised one relevant community, OV37, although a number of other forms of Calaminarian grassland occur in the UK and are represented in the SAC series.
BAP priority habitat type	None.	The BAP Priority Species and Habitats Review 2005-6 includes a proposed new priority habitat for Calaminarian grassland.

Based on JNCC Annex I habitat accounts internet version, NVC volume 5 (Rodwell, 2000), The European Context of British Lowland Grasslands (Rodwell 2007).

2. Range ^{2.3}

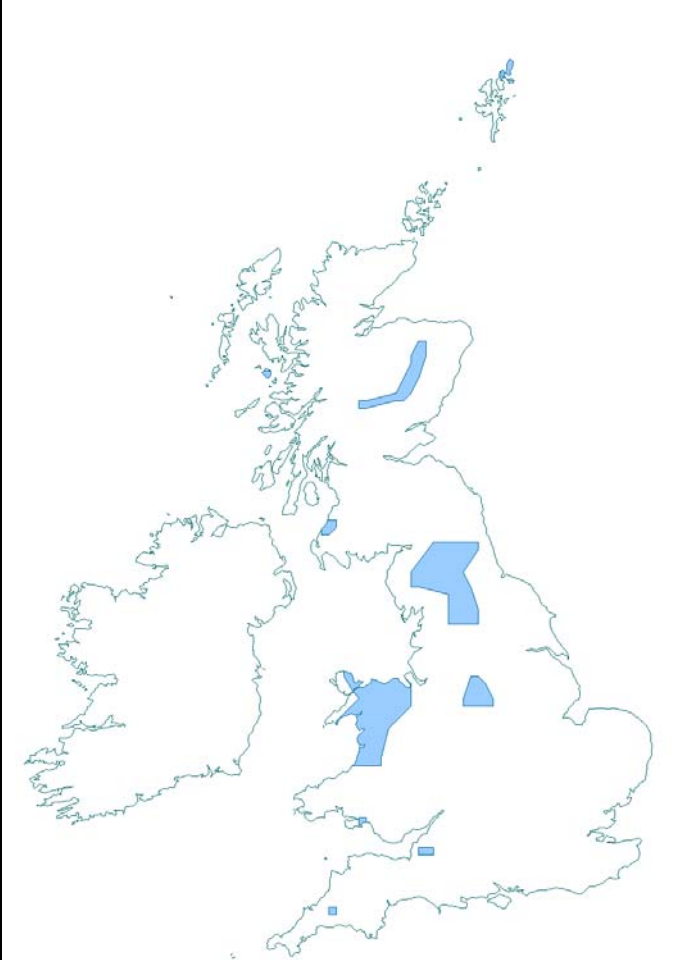
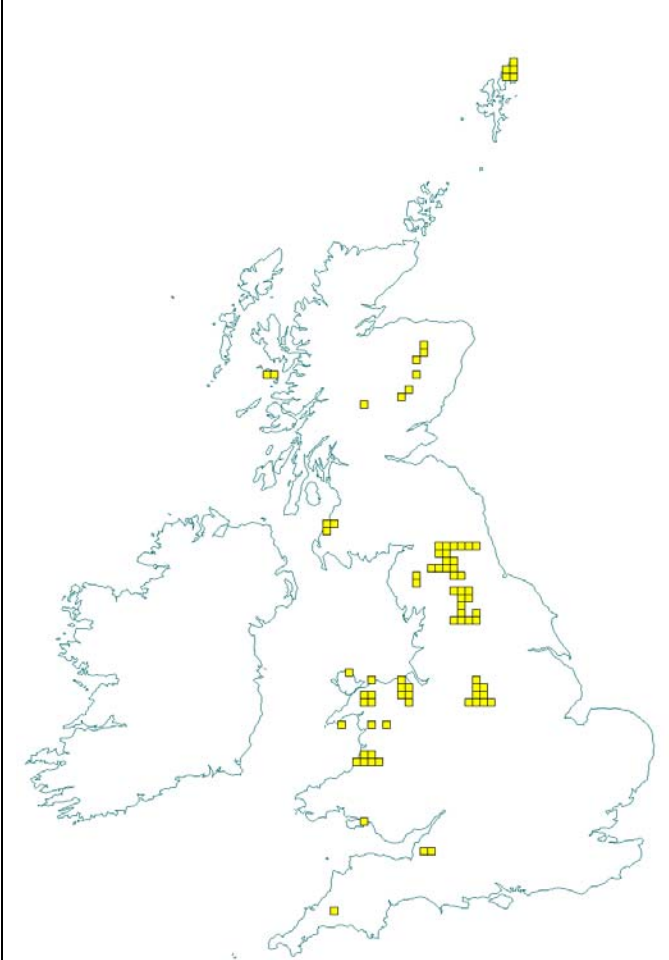
2.1 Current range

Range surface area ^{2.3.1}: **16,474 km²**
 Date calculated ^{2.3.2}: **May 2007**
 Quality of data ^{2.3.3}: **Good**

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 H6130 in the UK. Although not comprehensive, this is considered to give a good indication of the current range of the habitat. It should also be noted that the records cover a wide time period and some locations may have been lost in the intervening period.

Although widespread, Calaminarian grasslands have always been localised due to dependance on the presence of contaminated soil/rock conditions. Near natural examples are now restricted in occurrence, although they are locally frequent in parts of Scotland, but were presumably once more common where artificial sites now occur, having been destroyed by mining activities. Artificial sites form more than half of the resource, although many of these are of ancient origin, the mining of ores having occurred in Great Britain since the Bronze Age.

Map 2.1.1 Habitat range map ^{1.1} for H6130	Map 2.1.2 Habitat distribution map ^{1.2} for H6130
	
<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: 81</p>

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 have been significant historical losses in extent of this habitat, particularly anthropogenic stands (see section 3). Recent losses are well documented for the lead rakes of Derbyshire (Barnatt and Penny 2004), and there has been widespread loss in Wales through land reclamation and some loss in Shetland to agricultural improvement. In areas where significant destruction has taken place, scattered habitat fragments often remain and go some way to masking the extent of loss.

2.3 Favourable reference range

Favourable reference range^{2.5.1}: 16,474 km²

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, 16,474 km², has been set as the favourable reference area; although the trend in range since 1994 is unknown, it is considered that the documented range is viable and was probably viable in 1994.

2.4 Conclusions on range

Conclusion^{2.6.i}: Favourable

The trend in range is not known at present but the current range is considered viable and is equal to the favourable reference range. The conclusion is, therefore, Favourable.

3. Area^{2.4}

3.1 Current area

Total UK extent^{2.4.1}: <3.3km²

Date of estimation^{2.4.2}: May 2007

Method^{2.4.3}: 3 = ground based survey

Quality of data^{2.4.4}: Moderate

Estimates based on areas on Special Area of Conservation (SACs), Sellars and Baker (1988) and expert opinion (England); Averis (1991), Scottish Natural Heritage (SNH) Upland Survey results and expert opinion (Scotland); areas on SACs and Stevens *et al.* (2002) (areas of OV37 in Wales). Accurate survey data are lacking for many areas.

Table 3.1.1 provides information on the area of H6130 in the UK.

Table 3.1.1 Area of H6130 in the UK

	Area (ha)	Method ^{2.4.3}	Quality of data ^{2.4.4}
England	<200	3	Moderate
Scotland	80	3	Moderate
Wales	50	3	Moderate
Northern Ireland	absent	1	Moderate
Total UK extent^{2.4.1}	<330	3	Moderate

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}: Decreasing

Trend magnitude^{2.4.6}: Unknown

Trend period^{2.4.7}: Approx. 1990-2004

Reasons for reported trend^{2.4.8}: 3 – Direct human influence

There have been significant historical and recent losses in extent of this habitat. Both natural and anthropogenic stands may be threatened, although the latter are particularly vulnerable to programmes for the rehabilitation of derelict land (usually for agricultural use) and the re-working of mineral resources, as well as from landfill schemes. Comprehensive data are not available, but, for example, in the Peak District an estimated 50% of lead mining remains have been entirely lost and another 25% significantly damaged (Barnatt and Penny 2004), and losses (of unknown magnitude) are continuing here and elsewhere. The conservation value of anthropogenic Calaminarian grassland communities has only relatively recently been recognised by conservationists and hence protection within conservation sites has, in some areas at least, been limited up until relatively recently. Although the principal British sites now receive European recognition, some smaller, but still important, sites remain unprotected and vulnerable to the aforementioned pressures. Although the rate of decline since 1994 is not precisely documented, it is thought to be less than 1% a year.

3.3 Favourable reference area

Favourable reference area^{2.5.2}: 3.3km²

Section 3.2.2.3 of 'Assessing Conservation Status: UK Approach' sets out how favourable reference area estimates have been determined in the UK. Based on this approach, the favourable reference area has been set at 3.3 km². Reasons for this are discussed below.

There has been a reduction in the area of Calaminarian grassland, both of natural and anthropogenic stands since 1994. The maximum recorded area of the habitat since *circa* 1990 is taken as the favourable reference area at present and is considered a long-term viable area, but this could be reviewed in the future if better information becomes available.

3.4 Conclusions on area covered by habitat

Conclusion^{2.6.ii}: Unfavourable – Inadequate and deteriorating

Losses of the habitat are known to have occurred since 1994. Although the rate of decline is not precisely documented, it is thought to be less than 1% a year. Expert opinion is that losses are continuing, even though a large proportion of the habitat is in protected sites. The maximum recorded area of the habitat since *circa* 1990 has been taken as the favourable reference area.

4. Specific structures and functions (including typical species)

4.1 Main pressures^{2.4.10}

141 Abandonment of pastoral systems

950 Biocenotic evolution

390 Mining and extraction activities not referred to above

321 open cast mining

101 Modification of cultivation practices

702 air pollution

171 stock feeding

- Mineral re-working & land reclamation.
- Under-management & successional change.
- Agricultural improvement, including supplementary feeding.
- Fragmentation.
- Air pollution: Based on an assessment of the exceedence of relevant critical loads (see Technical Note III), air pollution is considered to be a potentially significant pressure to the structure and function of this habitat.

A range of activities adversely affects Calaminarian grassland. The Common Standards Monitoring (CSM) report (JNCC 2005) list under-management, successional change and supplementary feeding as

among the main factors leading to unfavourable condition. Rodwell (2007) highlights the reworking of abandoned mineral veins and fragmentation as among the main threats, while Barnatt and Penny (2004) consider mineral re-working and agricultural activity as the two major negative impacts in Derbyshire. Small (and therefore often unprotected) stands within improved fields are particularly vulnerable to various forms of agricultural improvement, including fertiliser applications, supplementary feeding and reseeded. At some sites, Calaminarian grassland is deliberately 'reclaimed' to remove a source of contamination to livestock or simply to improve the aesthetic appearance of former mining land.

4.2 Current condition

4.2.1 CSM condition assessments

Condition assessments based on CSM (see www.jncc.gov.uk/page-2233) provide a means to assess the structure and functioning of H6130 in the UK (Calaminarian grasslands are covered in the guidance sections on both Lowland Grassland and Upland Habitats). The following attributes were examined for all CSM assessments relevant to the habitat:

- Extent.
- Sward structure.
- Positive indicator species.
- Negative indicators including undesirable non-woody plants, and cover of trees, shrubs and bracken.
- Composition (trees and shrubs).
- 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 H6130. 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:

- 47% of the area and 63% of the number of assessments were unfavourable; and
- at least 46% of the total UK habitat area was in unfavourable condition.

Although some of the unfavourable CSM assessments were recorded as declining, the majority were recovering. Overall the habitat condition is taken to be improving.

Table 4.2.1 CSM condition assessment results for UK SACs supporting H6130. 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	46	3
	No change	03	1
	Unclassified	04	1
	Recovering	99	7
	Total	152	12
	<i>% of all assessments</i>	47%	63%
	<i>% of total UK resource</i>	46%	unknown
Favourable	Maintained	165	6
	Recovered		
	Unclassified	04	1
	Total	169	7
	<i>% of all assessments</i>	53%	37%
	<i>% of total UK resource</i>	51%	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.

It should be noted that there is some regional variation, with most of the Scottish SAC assessments coming out as favourable and those in England and Wales mainly unfavourable. The data for SACs are of particular value, as most of the resource in Britain is thought to be on SACs, most of which was assessed during CSM (see Table 7.2.1). This assessment is in agreement with local studies of Calaminarian grassland losses, such as in Derbyshire (Barnatt and Penny 2004).

Site of Special Scientific Interest (SSSI)/Area of Special Scientific Interest (ASSI) condition assessments

SSSI/ASSIs CSM condition assessments are not relevant as most or all the resource is on SACs.

Current Condition of H6130 based on CSM 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
	Not applicable	Not applicable
<p>Key <u>Red</u> = unfavourable, i.e. the square contains at least one SAC where this habitat feature is present and has been judged to be unfavourable <u>Green</u> = 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 <u>Blue</u> = SAC not assessed, i.e. the square contains at least one SAC supporting this habitat feature but no assessment has been reported <u>Transparent</u> = SAC feature not present, i.e. the square does not contain any SAC features of this habitat type</p>	<p>Key* <u>Green</u> – 80 – 100% of assessed features on 10km square are favourable <u>Yellow</u> - 50 – 80% of assessed features on 10km square are favourable <u>Orange</u> - 20 – 50% of assessed features on 10km square are favourable <u>Red</u> - 0 – 20% of assessed features on 10km square are favourable *This is the same key as was used for JNCC CSM Report 2006</p>	

4.3 Typical species

Typical species^{2.5.3}: **None**
Typical species assessment^{2.5.4}: **Not applicable**
No species are confined to this habitat.

Candidate typical species include:

Minuartia verna
Thlaspi caerulescens
Cerastium nigrescens
C. fontanum spp. *scoticum*
Arabis petraea
Minuartia sedoides
Epipactis youngiana
Epipactis youngiana
Asplenium septentrionale
Ditrichum plumbicola
Scopelophila cataractae
Cephaloziella stellulifera
Cephaloziella integerrima
Ditrichum cornubicum
Grimmia ungeri
Gylidea subscutellaris
Lecanora handelii
Cladonia fragilissima
mining hymenoptera
Hipparchia semele

Sources: Baket *et al.* (1990), Garcia-Gonzales *et al.* (1989), Sellars and Baker (1988), Spalding (1996), Spalding (2005), Stevens *et al.* (2002).

For the overall size of the resource, H6310 supports a remarkably large number of uncommon and geographically restricted species, both in terms of vascular and non-vascular plants. For the habitat to be considered in favourable conservation status, the whole diversity of the habitat, and the whole range of important and characteristic species, would need to be taken into account. It should be noted that very few of these species span the whole distribution of the habitat: indeed the distribution of many is tightly restricted geographically as well as by soil type.

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

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

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.

CSM site condition assessments for SACs show that a significant part of this habitat is in unfavourable condition. The value for assessed SACs is 63% of the number of sites and 47% of the area. Nevertheless, the majority of the unfavourable assessments are recorded as recovering in condition. Clearly a high proportion of the habitat is unfavourable and the necessary structures and functions are not in place.

5. Future prospects

5.1 Main factors affecting the habitat

5.1.1 Conservation measures

The conservation value of anthropogenic Calaminarian grassland communities has only relatively recently been recognised by conservationists. Calaminarian grassland is expected to become a Biodiversity Action Plan (BAP) priority habitat by the end of 2007.

5.1.2 Main future threats^{2,4,11}

141 Abandonment of pastoral systems

950 Biocenotic evolution

390 Mining and extraction activities not referred to above

321 open cast mining

101 Modification of cultivation practices

702 air pollution

171 stock feeding

The most obvious major future threats to H6130 are listed below, several of which are referred to in section 4.1.

- Mineral re-working and land reclamation.
- Under-management and successional change.
- Agricultural improvement, including supplementary feeding.
- Fragmentation: In many areas stands are, and probably always have been, mostly small and somewhat fragmentary. Therefore, fragmentation should not necessarily lead to an assessment of unfavourable conservation status. That said, there is clearly a need for a degree of connectivity. For example, some of the more characteristic plant species of the habitat (such as *Minuartia verna* and *Thlaspi caerulescens*) have relatively large seeds and correspondingly poor dispersal mechanisms over large distances.
- Air pollution: Based on an assessment of the exceedence of relevant critical loads (see Technical note III), air pollution is considered to be a potentially significant threat to the future condition of this habitat.

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 H6130 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 H6130 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:

- 84% of the area and 74% of the number of assessments fall within the future-favourable category; and
- at least 81% of the total UK habitat area falls within the future-favourable category.

Table 5.2.1 Predicted future condition of UK SACs supporting H6130 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	46	3
	Unfavourable no change	03	1
	Unfavourable unclassified	04	1
	Total	53	5
	<i>% of assessments</i>	16%	26%
	<i>% of total UK extent</i>	16%	Unknown
Future-favourable	Favourable maintained	165	6
	Favourable recovered		
	Unfavourable recovering	99	7
	Favourable unclassified	04	1
	Total	268	14
	<i>% of assessments</i>	84%	74%
	<i>% of total extent</i>	81%	Unknown

Note that the scenario presented above is based on the same information as used to construct Table in section 4.2.1. 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

SSSI/ASSIs CSM condition assessments are not relevant as most or all the resource is on SACs.

Predicted Future Condition of H6130 based on CSM 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
	Not applicable	Not applicable
<p>Key <u>Red</u> = 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 <u>Green</u> = 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 <u>Blue</u> = SAC not assessed, i.e. the square contains at least one SAC supporting this habitat feature but no assessment has been reported <u>Transparent</u> = SAC feature not present, i.e. the square does not contain any SAC features of this habitat type</p>	<p>Key* <u>Green</u> - 80 – 100% of assessed features on 10km square are favourable <u>Yellow</u> - 50 – 80% of assessed features on 10km square are favourable <u>Orange</u> - 20 – 50% of assessed features on 10km square are favourable <u>Red</u> - 0 – 20% of assessed features on 10km square are favourable *This is the same key as was used for JNCC CSM Report 2006</p>	

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

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

The EC Guidance states that where habitat prospects are intermediate between “good with no significant impacts from threats expected and long-term viability assured” and “bad with severe impacts from threats expected and long-term viability not assured”, the judgement should be Unfavourable – Inadequate. In the UK, this was generally taken to mean that range and/or area are stable or decreasing, and between 75-95% of the habitat area is likely to be in favourable condition in 12-15 years.

Although the area of the habitat has been declining, the rate is thought to be less than 1% a year and this could probably be stemmed within the next 10-15 years. SAC results for future condition suggest that at least 81% of the total UK habitat area could become favourable in the foreseeable future, and some further recovery is anticipated as further conservation measures are out into place. Overall the future prospects are judged to be Unfavourable – Inadequate but improving.

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

Conclusion^{2.6}: **Unfavourable – Bad but improving**

On the basis of Structure and Function, 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	Although the trend in range is unknown, the current range is not less than the favourable reference range.	3
Area covered by habitat type within range	Unfavourable – Inadequate and deteriorating	Current extent is decreasing, but not by more than 1% per year. Further measures are required to address threats to future extent for the overall UK resource.	2
Specific structures and functions (including typical species)	Unfavourable – Bad but improving	More than 25% of the habitat area is considered to be unfavourable as regards its specific structures and functions. Significantly more of the resource in unfavourable condition is improving than declining	1
Future prospects (as regards range, area covered and specific structures and functions)	Unfavourable – Inadequate but improving	Habitat prospects considered to be intermediate between “good with no significant impacts from threats expected and long-term viability assured” and “bad with severe impacts from threats expected and long-term viability not assured”. Measures are in place and planned to address threats to future range, extent and structure and function for the overall UK resource.	1
Overall assessment of conservation status	Unfavourable – Bad but improving	One or more Unfavourable – Bad.	1

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

7. Annexed material (including information sources used 2.2)

7.1 References

- BAKER, A.J.M. & PROCTOR, J. 1990. The influence of cadmium, copper, lead and zinc on the distribution and evolution of metallophytes in the British Isles. *Plant Systematics and Evolution*, **173**: 91-108.
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Map data sources

Data used to compile J.S. Rodwell, V. Morgan, R.G. Jefferson & D. Moss. 2007. *The European context of British Lowland Grasslands*. JNCC Report No. 394. Joint Nature Conservation Committee.

JNCC International Designations Database. Joint Nature Conservation Committee.

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)	20
Number of SACs with CSM assessments (b)	19
% of SACs assessed (b/a)	95
Extent of feature in the UK – hectares (c)	330
Extent of feature on SACs – hectares (d)	326
Extent of features assessed – hectares (e)	321
% of total UK hectareage on SACs (d/c)	99
% of SAC total hectareage that has been assessed (e/d)	98
% of total UK hectareage that has been assessed (e/c)	97

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)	29	41%
Current – Favourable (green)	11	15%
On SAC but not assessed (blue)	2	3%
Not on SAC (transparent)	29	41%
Total Number of 10km squares (any colour)	71	100%
Future – Unfavourable (red)	19	27%
Future – Favourable (green)	21	30%