

Priority Habitat Definition Statement v1.3 Lowland Heathland

1. Introduction

1.1 General description

Heathland vegetation generally occurs on mineral soils and thin peats (<0.5m deep). The ericoid and *Ulex minor / gallii* cover is the defining factor for heathlands; they are characterised by the presence of dwarf shrubs at a cover of at least 25% (Phase 1). This definition includes coastal heathland and dune heathland. Lowland Heathland will lie below a certain defined altitude, which will be set by expert judgement for each Natural Area. In the SW Region this altitude will be at about 300m.

1.2 Summary of existing information

There is a Lowland Heathland Inventory that covers England, but the inventory is site rather than habitat based and is often misleading for that reason. The working document "*Common Standards for Monitoring Lowland Heathland*" is currently under development. This document includes further details on definition and vegetation types.

1.3 Key issues with mapping and discriminating from other habitats

An area will be mapped as a Lowland Heathland if it is known to accord to the Phase 1 definition of a heath. Phase 1 requires that both D1 (dry dwarf shrub heath) and D2 (wet dwarf shrub heath) contains vegetation with greater than 25% cover of ericoids and/or *Ulex gallii / minor*. If an area that may be assumed to be a heathland due to the occurrence of ericoids and / or *Ulex* but it is adjudged to have clearly less than 25 % cover, then it should not currently be mapped as heathland even it has a good potential for restoration as a result of changes in management.

1.3.1 Associated habitats

In general it should be noted that a typical parcel of lowland heathland would contain within it a variety of different habitats that may include small areas of bare ground, patches of bracken, grassland, fen and secondary woodland. If these other features are largely surrounded by "true" heathland vegetation (as defined in table below) then they should be included as an integral part of the heathland polygon as long as no feature is > than 0.25ha. They may be attributed as notes in the polygons associated data table.

1.3.2 Secondary woodland & Scrub

Heathland in good condition should have < 15% cover of scrub or secondary woodland. In many cases scrub and secondary woodland (usually pine and birch) occur at a density greater than 15 %. In cases where ericoid/ *Ulex* cover is >25% and secondary woodland is > 15 % then the area may be mapped within the "*close to*" category as defined within the attribute table attached to the GIS polygon.

1.3.3 Dry acid grassland

Lowland heathland is very likely to occur in combination with Lowland dry acid grassland PHT. If enough information exists then the habitats should be mapped separately according to their definitions. If a parcel of land contains both Lowland heath and Lowland dry acid grassland and there is not enough information available to map separately then the parcel should be recorded as a polygon in both inventories but categorised as “containing the habitat but not mappable”.

1.3.4 Fen / Bog

In some locations, such as the New Forest, “heathland” sites often have within them a variety of different plant communities, often showing a transition from dry heath to wet heath to valley mire. Valley mires are usually not included within this definition, but where they occur as an integral part of a “heathland “ complex it will probably not be possible to separate them out. For further guidance see section 9.

2. Physio-graphical description

2.1 Structural / physical components

Within stands of heath there will normally be a variety of other habitats. Grassland may occur as elements within heathland, particularly where trampling may limit growth of ericoids and *Ulex* as may occur on track borders, although the extent and nature of grassland (and other habitats) within heath are highly variable.

2.2 Applicability of aerial photography and other remote sensing technologies

Aerial photographs (AP) are extremely useful for the definition of boundaries of heathland with:

- agricultural land; and
- woodland

If they are not too old, the OS maps are almost as useful as AP in relation to these habitats. Obviously the dates of the OS maps and the AP are critical in judging whether AP will be of any particular advantage.

It is not particularly useful at picking out scrub because scrub is often a component of heath and the nature of the scrub needs to be deduced from the AP.

Neither can AP be used with any confidence to identify the boundary of heathland with wetland habitats such as fen, marsh and swamp. It is rather poor at picking out wet heath from dry heath, particularly if *Molinia* is dominant in both the wet and dry

3. Altitudinal limits

The upper limit for lowland heathland types should be set as the limit of functional enclosure, which in England is usually around 300 to 350m. Functional enclosure would not generally include areas that are enclosed by dilapidated walls or fencing that allows free access to the open moor. Analysis of aerial photographs should help in making a decision as to whether an individual land parcel lies above or below this limit. Where there is still uncertainty, then this information should be reflected in the priority determination field attached to the polygon. All habitat parcels that may be priority heathland should, wherever possible be included in the inventory.

4. Habitat classification

CLASSIFICATION and version date	CODE	DESCRIPTION	RELATIONSHIP *	COMMENTS
BAP priority habitat (1995)		Lowland Heathland		
BAP broad habitat (1998)		Dwarf Shrub Heath	>	
Phase 1	D1 D2 D3 D5 D6 H6.6 H8.5	Dry dwarf shrub heath Wet dwarf shrub heath Lowland lichen heath Dry heath/acid grassland mosaic Wet heath/acidic grassland mosaic Dune heath Coastal heathland	< < < # # < <	
IHS	HE0 HE1 HE11 HE111 HE11Z HE12 HE121 HE122 HE12Z HE2 HEZ			
NVC	H1- H12 M15 M16		< < #	
EUNIS	F4.11 F4.12 F4.2	N Atlantic wet heaths Southern Atlantic w h Dry Heathland	< < <	

Habitats Directive Annex 1 (1997)		<p>Lowland Heath is a part of: Dry heaths (all subtypes); and N Atlantic wet heaths with <i>Erica tetralix</i>.</p> <p>The following two habitats are part of Lowland Heath: Southern Atlantic wet heaths with <i>Erica ciliaris</i> and <i>Erica tetralix</i>; and Dry coastal heaths with <i>Erica vagans</i> and <i>Ulex maritimus</i></p>		
------------------------------------------	--	-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--	--

* relationship of classification type to priority habitat:
= equal, < narrower, > wider, # overlap, ? not determined

5. Species composition

5.1 Flora

There are a number of species that are characteristic of lowland heathland, in particular *Calluna vulgaris*, *Erica cinerea*, *Erica tetralix*, *Erica vagans*, *Erica ciliaris*, *Ulex gallii*, *Ulex europaeus*, *Ulex minor*, *Vaccinium myrtillus* and *Vaccinium vitis-idaea*.

5.2 Fauna

There is a range of species that are associated with heathland, but none that could be used to accurately select heathland.

For a full list of BAP priority species associated with this habitat, see **Appendix 2**.

6. Geographical restrictions

There are none that are relevant to this exercise, excepting the fact that certain NVC types will be found in some parts of the country and not in others.

7. Geology & soils

Heathland is associated with certain geological formations and soils, but the association is not so precise that it could be used to map heathland. Soil data, particularly peat data may well be of use in separating heathland from bog habitats that may have similar vegetation but only occur on peat soils deeper than 0.5m.

8. Hydrology

While wet and dry heaths will generally be separated by water levels and/or drainage; and fens, marsh and swamps will be separated from wet heaths in the same way.

9. Relationship with other habitats

	Lowland heathland
Coastal sand dunes	Allowable overlap. Dune heathland will be mapped in the heathland inventory and also in the coastal sand dune inventories if appropriate.
Upland heathland	Separate using a regionally defined provisional altitude limit of 300 m in the SW.
Fens	Separate based on broad habitat distinction. Heath must be 25% or more Ericoids or small Ulex cover. It is likely that many "heathland" sites will have a fen component such as an area of valley mire. Where the separation is clear then these areas should be separated out and excluded from the heathland inventory. If this is not practical then the presence of fen should be noted within the <i>additional habitat features</i> field with a rough estimate of the % of the site it represents. Where the fen component is estimated to be significant (0.25 ha or >10% of polygon area), then it should be mapped in the fen inventory (<i>present but not mappable</i>). Soil data may be of use for highlighting larger areas of peat with mire vegetation within heathland.
Lowland dry acid grassland. <i>This protocol will also apply to calcareous grassland where it occurs in association with chalk heath,</i>	In many cases Lowland dry acid grasslands are an integral part of Lowland heaths, and the grassland component may contribute significantly to the diversity and ecological interest of heathland sites. If the acid grassland component of a heathland polygon is estimated to be at least 10 % of the total polygon area, then it should be mapped in both inventories using " <i>definitely present within polygon but not mappable</i> " under the <i>priority determination attribute</i> . An estimate of the % of the grassland component should be entered in the <i>habitat features note</i> field. Any single area of Lowland acid grassland occurring entirely within a heathland that is larger than 0.25 ha should be mapped in the Lowland acid grassland inventory and excluded from the Lowland heathland inventory.
Lowland raised bog	Separate based on peat depth (heath occurs only where peat is less than 50cm). There will be difficulties in mapping complex sites that have a range of transitional habitats that include wet heath and valley mire. These should be separated where they are > 0.25 ha and polygons attributed if less.
Maritime cliff and slope	Allowable overlap.
Coastal vegetated shingle	Allowable overlap.
Purple moor-grass and rush pasture	Separate based on broad habitat distinction. Heath must be 25% or more Ericoids or small Ulex cover. There may be difficulties separating PMG lowland heath and fen in some cases where they occur together.

Lowland meadows	Separate based on broad habitat distinction. Heath must be 25% or more Ericoids or small Ulex cover. NVC will also provide separation.
Coastal sand dunes	Allowable overlap. Dune heathland may be included in both inventories.
Ancient and /or species rich hedgerows	Allowable overlap. Hedges should not artificially sub-divide contiguous areas of heathland.
Lowland wood pasture and parkland	Allowable overlap.
Wet woodland	Separate by broad habitat guidance, and specifically 20% or greater canopy cover. See note in section 1.3.2 for further guidance on treatment of secondary woodland on former heath.

Note – “Small Ulex” refers to dwarf / western gorse.

10. Management

There is nothing relevant in the management of heathland that will be useful in mapping.

11. Size of mappable units

Minimum mappable unit (MMU): 0.25 ha

12. Regional differences

The regional distribution of lowland heathland National Vegetation Community (NVC) types (simplified)

NVC COMMUNITY	DISTRIBUTION
Dry or humid heath	
H1 <i>Calluna vulgaris/Festuca ovina</i>	SE and E England (Breckland)
H2 <i>Calluna vulgaris/Ulex minor</i>	Kent, Sussex, Surrey to Dorset
H3 <i>Ulex minor/Agrostis curtisii</i>	New Forest, W to Dorset
H4 <i>Ulex gallii/Agrostis curtisii</i>	SW England
H6 <i>Erica vagans/Ulex europaeus</i>	The Lizard, Cornwall
H7 <i>Calluna vulgaris/Scilla verna</i>	Coastal cliffs and islands
H8 <i>Calluna vulgaris/Ulex gallii</i>	SW England, N Midlands, Norfolk, Suffolk
H9 <i>Calluna vulgaris/Deschampsia flexuosa</i>	S Pennines and Midlands
H10 <i>Calluna vulgaris/Erica cinerea</i>	SW England
H11 <i>Calluna vulgaris/Carex arenaria</i>	Coastal dunes and sandy shingle
H12 <i>Calluna vulgaris/Vaccinium myrtillus</i>	Lower moorland of SW and N England
Wet heath	
H5 <i>Erica vagans/Schoenus nigricans</i>	The Lizard, Cornwall
M15 <i>Scirpus cespitosus/Erica tetralix</i>	Upland transitional
M16 <i>Erica tetralix/Sphagnum compactum</i>	Widespread

We regard the community H6 as a heathland community best nested within the Lowland Heathland community and not within the coastal heaths. While H6 may be found within the

coastal zone, it is also found inland, showing no significant association with either inland or coastal areas.

This differs from IHS.

Appendix 1 Information Sources

Alonso, I (2001 draft). *Common Standards for Monitoring Lowland Heathland*.

UK Biodiversity Steering Group, 1995. Biodiversity, The UK Steering Group Report, English Nature

EUNIS website - <http://mrw.wallonie.be/dgrne/sibw/EUNIS/>

Jackson DL (2000). Guidance on the interpretation of the Biodiversity Broad Habitat Classification (terrestrial and freshwater types): Definitions and the relationship with other habitat classifications. *JNCC Report*, No 307.

NCC (1990). Handbook for Phase 1 habitat survey: a technique for environmental audit field manual NCC, Peterborough

Rodwell, J. S. (ed.) (1991). British Plant Communities Vol. 2. Mires and Heaths. Cambridge University Press.

SERC (2001) The Integrated Habitat System

English Nature (1999) Biodiversity : making the links. English Nature

Appendix 2

BAP priority species associated with lowland heathland

(From "Biodiversity - Making the Links" - 28 June 2000 version)

Scientific name	Common name	Taxon	Priority list	Importance of habitat to the species *
<i>Bufo calamita</i>	Natterjack toad	Amphibian	SAP	P
<i>Rana lessonae</i>	Pool frog	Amphibian	SAP	S
<i>Triturus cristatus</i>	Great crested newt	Amphibian	SAP	x
<i>Anergates atratulus</i>	Dark guest ant	Ant	SAP	P
<i>Formica candida</i>	Black bog ant	Ant	SAP	P
<i>Formica exsecta</i>	Narrow headed ant	Ant	SAP	P
<i>Formica lugubris</i>	Hairy wood ant (Northern)	Ant	SS	x
<i>Formica pratensis/nigricans</i>	Black-backed meadow ant	Ant	SAP	x
<i>Formica rufibarbis</i>	Red barbed ant	Ant	SAP	x
<i>Bombus humilis</i>	a carder bumblebee	Bee	SAP	x
<i>Nomada ferruginata</i>	a cuckoo bee	Bee	SS	x
<i>Anisodactylus nemorivagus</i>	a ground beetle	Beetle	SS	P
<i>Cicindela sylvatica</i>	Heath tiger beetle	Beetle	SAP	P
<i>Cryptocephalus coryli</i>	a leaf beetle	Beetle	SAP	P
<i>Graphoderus zonatus</i>	Spangled diving beetle	Beetle	SAP	P
<i>Harpalus cordatus</i>	a ground beetle	Beetle	SS	P
<i>Harpalus froelichi</i>	a ground beetle	Beetle	SAP	P
<i>Harpalus parallelus</i>	a ground beetle	Beetle	SS	P
<i>Hydroporus cantabricus</i>	a diving beetle	Beetle	SS	P
<i>Pterostichus aterrimus</i>	a ground beetle	Beetle	SAP	P
<i>Pterostichus kugelanni</i>	a ground beetle	Beetle	SAP	P
<i>Tachys edmondsi</i>	a ground beetle	Beetle	SAP	P
<i>Melanotus punctolineatus</i>	a click beetle	Beetle	SAP	S
<i>Anostirus castaneus</i>	a click beetle	Beetle	SAP	S?
<i>Agabus brunneus</i>	a diving beetle	Beetle	SAP	x
<i>Amara famelica</i>	a ground beetle	Beetle	SAP	x
<i>Aphodius niger</i>	a dung beetle	Beetle	SAP	x
<i>Helophorus laticollis</i>	a water beetle	Beetle	SAP	?
<i>Burhinus oedicephalus</i>	Stone curlew	Bird	SAP	P
<i>Caprimulgus europaeus</i>	Nightjar	Bird	SAP	P
<i>Lanius collurio</i>	Red-backed shrike	Bird	SAP	P
<i>Lullula arborea</i>	Woodlark	Bird	SAP	P
<i>Alauda arvensis</i>	Skylark	Bird	SAP	S
<i>Botaurus stellaris</i>	Bittern	Bird	SAP	S
<i>Carduelis cannabina</i>	Linnet	Bird	SAP	S
<i>Perdix perdix</i>	Grey partridge	Bird	SAP	x
<i>Eurodryas aurinia</i>	Marsh fritillary	Butterfly	SAP	P
<i>Plebejus argus</i>	Silver-studded blue	Butterfly	SAP	P
<i>Decticus verrucivorus</i>	Wart-biter	Cricket	SAP	x

Definition: Lowland Heathland
Version: 1.3 (November 2002)
Created by: ERCCIS /EN

<i>Gryllotalpa gryllotalpa</i>	Mole cricket	Cricket	SAP	x
<i>Gryllus campestris</i>	Field cricket	Cricket	SAP	x
<i>Coenagrion mercuriale</i>	Southern damselfly	Damselfly	SAP	P
<i>Asilus crabroniformis</i>	Hornet robberfly	Fly	SAP	P
<i>Bombylius minor</i>	Heath bee-fly	Fly	SAP	P
<i>Chrysotoxum octomaculatum</i>	a hoverfly	Fly	SAP	P
<i>Thyridanthrax fenestratus</i>	mottled bee-fly	Fly	SAP	P
<i>Poronia punctata</i>	Nail fungus	Fungi	SAP	P
<i>Cladonia mediterranea</i>	a reindeer lichen	Lichen	SAP	x
<i>Cladonia peziziformis</i>	a lichen	Lichen	SAP	x
<i>Pseudocyphellaria aurata</i>	a lichen	Lichen	SAP	x
<i>Cephaloziella nicholsonii</i>	Greater copperwort	Liverwort	SAP	x
<i>Marsupella profunda</i>	Western rustwort	Liverwort	SAP	x
<i>Pipistrellus pipistrellus</i>	Pipistrelle bat	Mammal	SAP	S
<i>Campylopus setifolius</i>	Silky swan-neck moss	Moss	SS	x
<i>Ditrichum cornubicum</i>	Cornish path moss	Moss	SAP	x
<i>Ditrichum plumbicola</i>	Lead-moss	Moss	SAP	x
<i>Leptodontium gemmascens</i>	Thatch moss	Moss	SAP	x
<i>Sphagnum skyense</i>	Skye bog-moss	Moss	SS	x
<i>Acosmetia caliginosa</i>	Reddish buff	Moth	SAP	P
<i>Coscinia cribraria bivittata</i>	Speckled footman	Moth	SAP	P
<i>Cyclophora pendularia</i>	Dingy mocha	Moth	SAP	P
<i>Epione paralellaria</i>	Dark bordered beauty	Moth	SAP	P
<i>Hemaris tityus</i>	Narrow-bordered hawk-moth	Moth	SAP	P
<i>Noctua orbona</i>	Lunar yellow underwing	Moth	SAP	P
<i>Phyllodesma ilicifolia</i>	Small lappet	Moth	SS	P
<i>Schrankia taenialis</i>	White-line snout	Moth	SS	P
<i>Mythimna turca</i>	Double line	Moth	SAP	S
<i>Rheumaptera hastata</i>	Argent and sable	Moth	SAP	S
<i>Lacerta agilis</i>	Sand lizard	Reptile	SAP	P
<i>Eresus cinnaberinus</i>	Ladybird spider	Spider	SAP	P
<i>Uloborus walckenaerius</i>	a spider	Spider	SS	P
<i>Euphrasia vigursii</i>	an eyebright	Vascular plant	SAP	P
<i>Lycopodiella inundata</i>	Marsh clubmoss	Vascular plant	SAP	P
<i>Asparagus officinalis</i> <i>ssp. prostratus</i>	Wild asparagus	Vascular plant	SAP	S
<i>Mentha pulegium</i>	Pennyroyal	Vascular plant	SAP	S
<i>Juncus pygmaeus</i>	Pigmy rush	Vascular plant	SAP	x
<i>Pilularia globulifera</i>	Pillwort	Vascular plant	SAP	x
<i>Chrysis fulgida</i>	a ruby-tailed wasp	Wasp	SAP	P
<i>Homonotus sanguinolentus</i>	a spider-hunting wasp	Wasp	SAP	P
<i>Pseudepipona herrichii</i>	Purbeck mason wasp	Wasp	SAP	P

* (P) primary, (S) secondary or (x) less