

4 LOWLAND HEATHLAND

1 Introduction

- 1.1 Heathland is dominated by dwarf shrubs, and the British types are characterised by dominance of ericaceous species (Gimingham 1972). The NVC classification of British lowland heaths (Rodwell 1988) is given in Table 10. Many examples contain an abundance of grasses and there are frequent transitions to grassland (see C.3). Lowland heaths typically occur on acidic, usually podsolised soils, and associated grasslands are often on these same infertile substrata (Webb 1986). Locally, in areas of chalk and limestone, there are communities intermediate between acidophilous heath and calcicolous grassland, and these calcicolous heaths are of special interest to plant ecologists. In the East Anglian Breckland, a patchy overlay of blown sand on chalky till gives a range of community types from calcicolous grassland to acidophilous dwarf shrub heath, sometimes in an intimate mixture (Watt 1936; see also the discussion of mosaics in B, 6). The Breckland and the Coversands in Lincolnshire and Humberside contain areas dominated by sand sedge Carex arenaria, representing inland dunes (see C.1, 5.6.8). Many heathlands contain an abundance of bracken Pteridium aquilinum, and some areas are dominated by this fern. However, in order to be considered as a heathland site, an area should have at least 10% cover of heather Calluna vulgaris.
- 1.2 Heathland communities have developed on the stable hinterland of some acidic coastal sand-dune systems (see C.1, 5.6.4), and a distinctive sub-maritime type is often present on the upper slopes and summits of coastal cliffs and bluffs (see C.1, 7.4.3; Hopkins 1983). An important gradient of variation occurs where the ground becomes wetter and dry heath changes first to wet heath, with abundance of moisture-loving plants including Sphagnum, and then to spongy mire, with a moderate depth of peat and a permanently high water table. The mires associated with lowland heaths are usually in distinct channels or shallow valleys and so are termed valley bogs or valley mires. They are considered also under Fens (C.7, 5 and 8.3), but where appropriate they should be treated as part of a lowland heathland system. In southern England, the Midlands and Wales, where there is land rising to over 300 m, or at lower levels in northern England and Scotland, lowland heath usually shows a transition to upland heath by the addition of Vaccinium myrtillus and sometimes V. vitis-idaea and Empetrum nigrum. In the Highlands, the more montane Arctostaphylos uva-ursi often appears in the intermediate types. Although it becomes increasingly restricted to low altitudes with distance north, heathland of distinctly lowland type in its floristics nevertheless occurs up to the far north of Scotland.
- 1.3 Lowland heaths have become enormously reduced in area through various human impacts - agricultural reclamation, afforestation and building works of various kinds. Some have become scrubbed over or even converted to birch and Scots pine woodland through natural succession in the absence of grazing or other management. The decline is a long-established one, but it has become increasingly rapid and serious during the last 50 years. Moore (1962) charted the decline of the once vast Dorset heaths from about 40,000 ha in 1750 to a quarter of that area by 1960; and this remnant has since been reduced to roughly half. In the six most important lowland heath districts, there was an overall loss of 40% between 1950 and 1984 (Nature Conservancy Council 1984). In some areas heathland is now reduced to scattered, mainly small fragments.

1.4 From the foregoing account, there is clearly a premium on size of area in the selection of heathland SSSIs. All the larger remaining examples are important, and sometimes it may be desirable to treat adjoining fragments as a single site. Many lowland heaths occur in association with woodland of birch and Scots pine and show invasion by these species. Since the woodland component has value in its own right and as part of the succession, it is important to represent this relationship, whilst remembering that it usually poses a management problem and also that the area of heathland may sometimes need to be expanded at the expense of this tree cover. The management aim should be to maintain what, for the particular site, appears to be an appropriate balance between the different communities of the succession, having regard especially to the habitat requirements of important species associated with these seral stages. There are rare types of heath, mainly in the extreme south of England but also on calcareous rock formations elsewhere, where even quite tiny fragments may be important; so lower size limits should be regarded as flexible according to circumstances. Heathland types that are restricted in geographical distribution or in total extent are to be considered as a threatened habitat.

2 International importance

2.1 The British lowland heaths dominated by ericaceous dwarf shrubs belong to the category of Atlantic heathlands, limited within Europe to the western coastal regions with a mild and humid climate. This is an internationally restricted class of vegetation, and the types occurring in other continents have no floristic affinity with those in Britain and Ireland (Specht 1979). The importance of these vegetation types has been enhanced by the rapid contraction of their extent on the European continent, through the same kinds of land-use change that have so fragmented and reduced their occurrence in Britain (Noirfalise & Vanesse 1976). This generally high international value of oceanic heathland reinforces the need to consider the importance of even small remaining fragments in Britain.

3 Selection requirements

3.1 Table 10 indicates as 3.1.1-14 the main NVC types of lowland heath and grass-heath (Rodwell 1988) with one mire community (M16: Rodwell 1987-1988) and selection recommendations for each. In most cases all sites over 10 ha should be selected.

3.2 Mosaic or composite sites

As previously stated, heathland is often one component of a site. Where the individual components are collectively of interest, even though they may be limited in individual size, the whole area should be treated as a mosaic or composite site (see B, 6).

4 Boundaries

Lowland heaths are often adjacent to other habitat types. The most frequent juxtapositions are with valley mires, calcifugous grassland, upland communities, mature woodland, developing or mature scrub habitats and coastal grassland and dunes.

4.1 Where heathland and valley mires are contiguous, the whole of the heathland that contributes to the catchment area should be included within the site boundary. If the heathland is degraded but the valley mire is of SSSI quality,

the heath should still be included, as it influences the quality of the mire (see C.7, 8.3).

- 4.2 Lowland heath can form part of a continuum with lowland calcifugous grassland (U1-3: see C.3) or with northern grouse moors, upland heath and upland grassland (see C.9). Outliers of the latter combination of habitats also exist in Wales, Devon and Cornwall. Lowland heath usually occurs below 300 metres, upland heath above this height. Where the two habitats are present in a continuous sweep, transitional communities exist, and these add to the value of the area. Wherever possible, good examples of lowland heath adjacent to good upland sites should be included within the site boundary.
- 4.3 Heathland is a dynamic habitat and is often part of a succession climaxing in woodland. Whilst the complete takeover of a heath by woodland is undesirable, the juxtaposition of woodland or open growth of mature trees and heath does provide certain animals and plants with their required niches. For example, several birds of prey which hunt over the open heath nest in pine trees. The nightjar and tree pipit probably find their optimum nesting habitat on tree-grown heaths, as they use the trees and shrubs as song perches. Certain dragonflies require sheltered pockets of heath near open water, and these can be found where trees act as windbreaks. On a heathland site, a percentage of tree cover is acceptable, but this should not normally exceed 50% of the area and should usually be less.
- 4.4 Developing and mature scrub is also an important constituent of heathland sites, especially in southern England where Dartford warblers and red-backed shrikes nest in mature gorse. Gorse is frequently found along the margins of a heath, as it benefits from disturbance and recolonises quickly after fire. Juniper is occasionally found on heaths and is an important constituent in Speyside and in north-east Scotland. Wherever practicable, some areas of gorse and juniper should be included within a site. However, large gorse thickets can be a management problem. The two smaller gorse species, *Ulex gallii* and *U. minor*, are important constituents of oceanic and southern heath, and selection should ensure that they are well represented in the heathland SSSI series.
- 4.5 Coastal grassland and dunes can have adjacent or interspersed heath. In many areas semi-natural communities are now confined to thin strips along the coast. Where these strips are wider, generally between 200 m and 500 m from the coastline, heathland is sometimes well represented. Since these examples are becoming increasingly scarcer, every opportunity should be taken to include heathland of good quality within coastal sites. (See also C.1, 11.2.12.)

5 References

- GIMINGHAM, C.H. 1972. The ecology of heathlands. London, Chapman and Hall.
- HOPKINS, J.J. 1983. Studies of the historical ecology, vegetation and flora of the Lizard District, Cornwall, with particular reference to heathland. PhD thesis, University of Bristol.
- MOORE, N.W. 1962. The heaths of Dorset and their conservation. Journal of Ecology, 50, 361-391.

- NATURE CONSERVANCY COUNCIL. 1984. Nature conservation in Great Britain. London.
- NOIRFALISE, A., & VANESSE, R. 1976. Heathlands of Western Europe. Strasbourg, Council of Europe (Nature & Environment Series No. 2).
- RODWELL, J. 1987-1988. National Vegetation Classification. Mires. University of Lancaster, unpublished report to the Nature Conservancy Council.
- RODWELL, J. 1988. National Vegetation Classification. Heaths. University of Lancaster, unpublished report to the Nature Conservancy Council.
- SPECHT, R.L. 1979. Heathlands and related shrublands. Descriptive studies. Amsterdam, Elsevier (Ecosystems of the world, 9A).
- WATT, A.S. 1936. Studies in the ecology of Breckland. I. Climate, soil and vegetation. Journal of Ecology, 24, 117-138.
- WEBB, N. 1986. Heathlands. London, Collins (New Naturalist).

Table 10 Heathland classification, distribution and selection requirements

NVC community	Distribution	Diversity and gradients	Rare species	Selection recommendations
3.1.1 <u>Calluna vulgaris</u> - <u>Festuca ovina</u> (H1)	Very local in south-east and eastern England, Breckland especially	Important part of grass-heaths and transition to inland dunes	<u>Cladonia</u> spp.	Select all areas above 10 ha.
3.1.2 <u>Calluna vulgaris</u> - <u>Ulex minor</u> (H2)	Very local from Weald of Sussex westwards to Dorset	Part of southern and south-east England valley mire complex	<u>Agrostis curtisii</u>	Select all areas above 10 ha.
3.1.3 <u>Ulex minor</u> - <u>Agrostis curtisii</u> (H3) (Armorican)	New Forest westwards to Dorset	Important part of heath and woodland mosaics	<u>Erica ciliaris</u> , <u>Viola lactea</u>	Select all areas above 10 ha.
3.1.4 <u>Ulex gallii</u> - <u>Agrostis curtisii</u> (H4) (Armorican)	South-west England and parts of South Wales	Whole heath complex in Dorset and Devon; limestone heath in the Gower	<u>Erica ciliaris</u>	Select all areas above 10 ha.
3.1.5 <u>Erica vagans</u> - <u>Schoenus nigricans</u> (H5) (Ibero-Atlantic)	Confined to the Lizard, Cornwall	Part of the Lizard complex	<u>Erica vagans</u>	Select all areas.
3.1.6 <u>Erica vagans</u> - <u>Ulex europaeus</u> (H6)	Confined to the Lizard, Cornwall	Part of the Lizard complex	<u>Erica vagans</u> <u>Juncus capitatus</u> <u>Allium schoenoprasum</u> <u>Trifolium bocconei</u>	Select all areas.

NVC community	Distribution	Diversity and gradients	Rare species	Selection recommendations
3.1.7 <u>Calluna vulgaris</u> - <u>Scilla verna</u> (H7)	Very local in coastal cliff areas in England, Wales, Scotland and the islands	Important cliff-top zonation; limestone heath in the Gower and on Great Orme	<u>Allium schoenoprasum</u> <u>Astragalus danicus</u> <u>Erica vagans</u> <u>Euphorbia portlandica</u> <u>Genista pilosa</u> <u>Herniaria ciliolata</u> <u>Isoetes hystrix</u> <u>Minuartia verna</u> <u>Primula scotica</u> <u>Scilla autumnalis</u> <u>Scilla verna</u> <u>Spiranthes spiralis</u> <u>Trifolium bocconeii</u> <u>Trifolium occidentale</u>	Any area over 10 ha is potentially selectable. Selection should usually be in association with coastal cliff features, but this community may need separate representation.
3.1.8 <u>Calluna vulgaris</u> - <u>Ulex gallii</u> (H8)	In the south-west of England, Wales and the north Midlands	Extending to moderate altitudes in the Midlands	<u>Agrostis curtisii</u> <u>Viola lactea</u>	Select all areas above 10 ha.
3.1.9 <u>Calluna vulgaris</u> - <u>Deschampsia flexuosa</u> (H9)	In the southern Pennines and Midlands	Often a result of over-grazing and frequent burning		Select areas in combination with other types.
3.1.10 <u>Calluna vulgaris</u> - <u>Carex arenaria</u> (H11)	Widespread on coastal dunes and sandy shingle	Integral part of some dune systems	<u>Cladonia</u> spp. and ground-growing <u>Usnea</u> spp.	Select areas in combination with coastal types (see C.1).

NVC community	Distribution	Diversity and gradients	Rare species	Selection recommendations
3.1.11 <u>Calluna vulgaris</u> - <u>Vaccinium myrtillus</u> (H12)	Transitional heath, widespread in lower moorland areas in south-west and northern England	Grades into typical sub-montane <u>Calluna</u> heath with <u>Empetrum</u> and <u>Vaccinium vitis-idaea</u> . Areas with <u>Arctostaphylos uva-ursi</u> and <u>Racomitrium lanuginosum</u> are regarded as upland types, but see also 3.1.14.	<u>Diphasiastrum x issleri</u>	Select five areas in each AOS. These will often be in association with upland features selected as the major interest of the sites (see C.9).
3.1.12 <u>Erica tetralix</u> - <u>Sphagnum compactum</u> (M16)	Widespread, but variably present, usually as small areas	Integral part of valley mire zonation throughout lowland Britain, especially in the south	<u>Erica ciliaris</u> <u>Gentiana pneumonanthe</u> <u>Rhynchospora fusca</u>	When present as the only or the predominant type, any area of 10 ha should be selected. Selection will usually be in association with dry heath or valley bog (see C.7), and any size of area then qualifies. Addition of this type can also be used to reach qualifying size of area for selection.
3.1.13 <u>Calluna vulgaris</u> - <u>Erica cinerea</u> (H10)	Atlantic heather moor reaching low altitudes in western Scotland	Characteristic dry heath community in heathland/mire sequences in western and northern Scotland	<u>Orobanche alba</u>	Select any areas over 10 ha, usually in combination with other types.

NVC community	Distribution	Diversity and gradients	Rare species	Selection recommendations
3.1.14 <u>Calluna vulgaris</u> - <u>Arctostaphylos</u> <u>uva-ursi</u> (H16)	Boreal bearberry heath in eastern central Scotland, especially Speyside	Grades into impoverished <u>Calluna/Vaccinium heath</u> (H12).	<u>Genista anglica</u> <u>Pyrola media</u> <u>Trientalis europaea</u> <u>Viola riviniana</u> <u>Lotus corniculatus</u> <u>Hypericum pulchrum</u> <u>Anemone nemorosa</u>	Select all areas over 10 ha, often in conjunction with upland areas (see C.9).