HEATHLAND AND BOG – SURVEY AND ASSESSMENT

Supporting notes for training course

**Dry heaths**

Dry heaths typically occur on free-draining acidic soils of generally low nutrient content. Ericaceous dwarf-shrubs dominate the vegetation. The most common is Heather or Ling (*Calluna vulgaris*), often in combination with Gorse (*Ulex* spp.) or Bilberry (*Vaccinium* spp.) Other dwarf-shrubs can be important locally. Most, though not all dry heath, is semi-natural, being derived from woodland with a long history of grazing and burning.

Eleven NVC communities in Britain include forms of dry/humid lowland heathland:

**H1 Calluna vulgaris–Festuca ovina heath**

**H2 Calluna vulgaris–Ulex minor heath**

**H3 Ulex minor–Agrostis curtisii heath**

**H4 Ulex gallii–Agrostis curtisii heath**

**H6 Erica vagans–Ulex europaeus heath**

**H7 Calluna vulgaris–Scilla verna heath**

**H8 Calluna vulgaris–Ulex gallii heath**

**H9 Calluna vulgaris–Deschampsia flexuosa heath**

**H10 Calluna vulgaris–Erica cinerea heath**

**H11 Calluna vulgaris–Carex arenaria (dune) heath**

**H12 Calluna vulgaris–Vaccinium myrtillus heath**

**Wet heaths**

Wet heath usually occurs on acidic, nutrient-poor, shallow peat or sandy soils with impeded drainage. Mixtures of Cross-leaved heath (*Erica* *tetralix*), grasses, sedges and Sphagnum typically dominate the vegetation.

In the UK this vegetation includes forms of the following NVC types:

**H3 Ulex minor–Agrostis curtisii heath (when it contains E. ciliaris)**

**H4 Ulex gallii–Agrostis curtisii heath (when it contains E. ciliaris)**

**H5 Erica vagans–Schoenus nigricans heath**

**M14 Schoenus nigricans–Narthecium ossifragum mire**

**M15 Scirpus cespitosus–Erica tetralix wet heath**

**M16 Erica tetralix–Sphagnum compactum wet heath**

**M21 Narthecium ossifragum–Sphagnum papillosum valley mire (with E. ciliaris)**

**Associated habitats**

Wet and dry heathlands often form mosaics. Lowland heathlands may also be closely associated with other habitats, e.g. upland heathland, grassland, woodland, valley mire

**U1 Festuca ovina–Agrostis capillaris–Rumex acetosella grassland**

**U2 Deschampsia flexuosa grassland**

**U3 Agrostis curtisii grassland**

**U4 Festuca ovina–Agrostis capillaris–Galium saxatile grassland**

**CG2 Festuca ovina–Avenula pratensis grassland**

**CG7 Festuca ovina–Hieracium pilosella–Thymus praecox/pulegioides grassland**

**CG9 Sesleria albicans–Galium sterneri grassland**

**M3 Eriophorum angustifolium bog pool community**

**M21 Narthecium ossifragum–Sphagnum papillosum valley mire**

**Survey Techniques**

**Phase I**

Methodology

Map extent of communities and target note as much detail as possible, including dominant species, habitat conditions and presence of key indicator species.

Habitat types

**Heath –** vegetation dominated by heather, usually on well-drained acidic soils

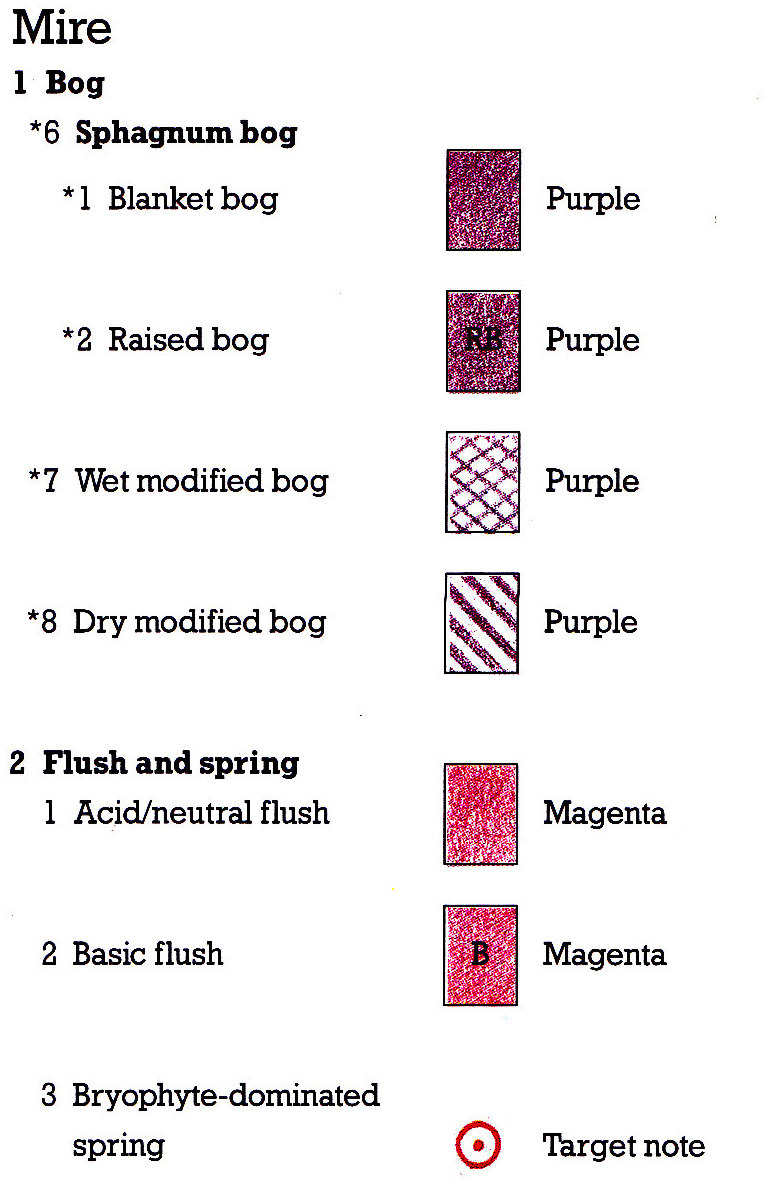
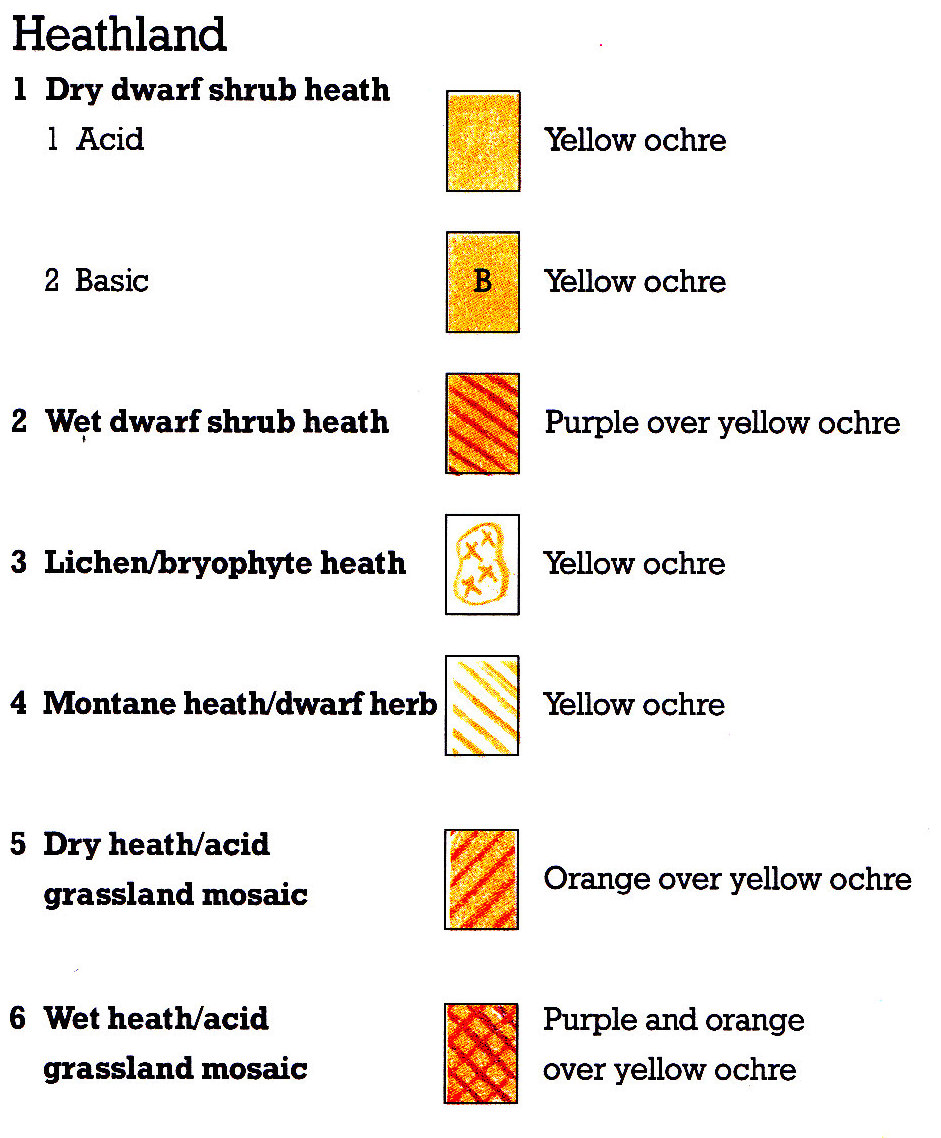
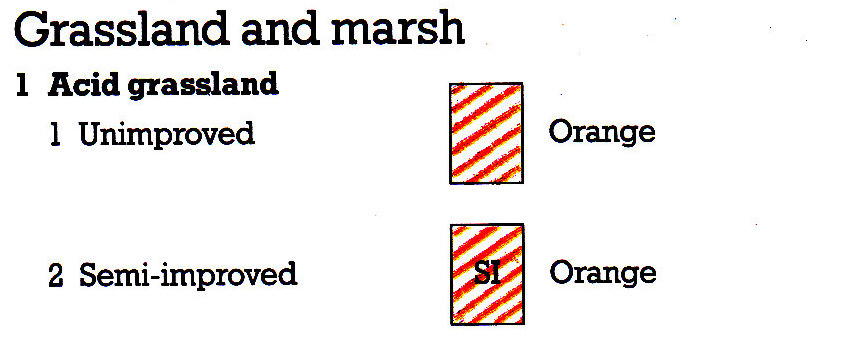
* Dwarf Shrub Heath – heathers and small gorses greater than 25%
* Wet dwarf shrub heath – heather cover greater than 25%, plus Molinia and possibly Sphagnum
* Lichen/bryophyte heath – bryos/lichens greater than 30%
* Montane heath/dwarf herb – diverse group of higher altitude heathlands
* Dry heath/acid grassland mosaic – where these two habitats form an intimate mosaic. Note proportions of each
* Wet heath/acidic grassland mosaic – as above but wetter!

**Bog -** Sphagnum-rich vegetation with no input of water from surrounding land.

* Raised bog
* Wet modified bog
* Dry modified bog

**Flush and spring –** occur where there is moving water on sloping ground

* Acid/neutral flush



* Basic flush
* Bryophyte-dominated spring

**NVC**

Methodology

1. Map homogeneous stands
2. Locate representative samples
3. Establish boundaries or transition zones
4. Consider using mosaics (these are where it is impossible to place a quadrat without encompassing towovegetation types)
5. Decide size of plot
6. Record cover values of all species present, either using % or DOMIN, depending on what sort of data analysis you are carrying out.

* 2x2m Dwarf-shrub heath
* 4x4m tall herb heaths
* Can be rectangular to better fit vegetation (e.g. on flushes)

Habitat types

Communities include those listed above plus several mire communities. (There are 38 mire and 22 heath communities, which take some learning to become familiar with). If you are not experienced, simply sample and map homogeneous stands then analyse and add community details later. Be prepared to re-visit sites once analysis is complete!

An excellent guide can be found here; <http://jncc.defra.gov.uk/PDF/Mires_Heaths.pdf>

or in the British Plant Communities books.

Analysis

Habitat can be keyed out in British Plant Communities. There are also two excellent free online tools for data analysis, which can be downloaded from the CEH website

MAVIS - http://bit.ly/2cpNjOr

TABLEFIT - http://bit.ly/2cA716b

**Other factors to record**

1. Vegetation height (using drop disc)
2. Heather health (pioneer, building, mature, degenerate, dead)
3. Negative indicator species (invasive non-native, Bracken, gorse, trees, high nutrient species (e.g. Nettle, Ragwort, Thistle, Willowherb and coarse grasses)
4. Physical degradation, such as erosion gullies, burning, bare ground

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| **BOG AND HEATH SPECIES LIST (New Forest)** | | |  | |  |  |  |
|  | | |  | |  |  |  |
| **Forbs** | | |  | |  | **Graminoids** |  |
| *Anagallis tenella* | | | Bog Pimpernel | |  | *Agrostis capillaris* | Common Bent |
| *Bellis perennis* | | | Daisy | |  | *Agrostis stolonifera* | Creeping Bent |
| *Calluna vulgaris* | | | Heather | |  | *Aira praecox* | Early Hair-grass |
| *Chamaemelum nobile* | | | Chamomile | |  | *Anthoxanthum odoratum* | Sweet-vernal Grass |
| *Cirsium dissectum* | | | Meadow Thistle | |  | *Carex demissa* | Common Yellow-sedge |
| *Dactylorhiza praetermissa* | | | Southern Marsh-orchid | |  | *Carex echinata* | Star Sedge |
| *Drosera intermedia* | | | Oblong-leaved Sundew | |  | *Carex nigra* | Common Sedge |
| *Drosera rotundifolia* | | | Round-leaved Sundew | |  | *Carex ovalis* | Oval Sedge |
| *Erica cinerea* | | | Bell Heather | |  | *Carex panicea* | Carnation Sedge |
| *Erica tetralix* | | | Cross-leaved Heath | |  | *Carex pilulifera* | Pill Sedge |
| *Euphrasia sp.* | | | Eyebright | |  | *Danthonia decumbens* | Heath Grass |
| *Galium saxatile* | | | Heath Bedstraw | |  | *Eleocharis multicaulis* | Many-stemmed Spike-rush |
| *Hydrocotyle vulgaris* | | | Marsh Pennywort | |  | *Eleogiton fluitans* | Floating Club-rush |
| *Hypericum elodes* | | | Marsh St John's-wort | |  | *Eriophorum angustifolium* | Common Cotton-grass |
| *Hypochaeris radicata* | | | Cat's-ear | |  | *Festuca ovina* | Red Fescue |
| *Leontodon hispidus* | | | Rough Hawkbit | |  | *Festuca rubra* | Sheep's Fescue |
| *Leontodon saxatilis* | | | Lesser Hawkbit | |  | *Glyceria fluitans* | Floating Sweet-grass |
| *Lotus corniculatus* | | | Common Bird's-foot-trefoil | |  | *Juncus acutiflorus* | Sharp-flowered Rush |
| *Lotus pedunculatus* | | | Greater Bird's-foot Trefoil | |  | *Juncus articulatus* | Jointed Rush |
| *Myrica gale* | | | Bog Myrtle | |  | *Juncus bufonius* | Toad Rush |
| *Narthecium ossifragum* | | | Bog Asphodel | |  | *Juncus bulbosus* | Bulbous Rush |
| *Ornithopus perpusillus* | | | Bird's-foot | |  | *Juncus conglomeratus* | Compact Rush |
| *Pedicularis sylvatica* | | | Lousewort | |  | *Juncus effusus* | Soft Rush |
| *Pilosella officinalis* | | | Mouse-ear Hawkweed | |  | *Juncus squarrosus* | Heath Rush |
| *Pinguicula lusitanica* | | | Pale Butterwort | |  | *Luzula campestris* | Field Wood-rush |
| *Plantago coronopus* | | | Buck's-horn Plantain | |  | *Luzula multiflora* | Heath Wood-rush |
| *Plantago lanceolata* | | | Ribwort Plantain | |  | *Luzula multiflora ssp. congesta* | Dense-headed Heath Wood-rush |
| *Potamogeton polygonifolius* | | | Bog Pondweed | |  | *Molinia caerulea* | Purple Moor-grass |
| *Potentilla erecta* | | | Tormentil | |  | *Nardus stricta* | Mat-grass |
| *Prunella vulgaris* | | | Selfheal | |  | *Poa annua* | Annual Meadow-grass |
| *Radiola linoides* | | | Allseed | |  | *Poa trivialis* | Rough Meadow-grass |
| *Ranunculus flammula* | | | Lesser Spearwort | |  | *Trichophorum cespitosum* | Deergrass |
| *Sagina procumbens* | | | Procumbent Pearlwort | |  | *Vulpia bromoides* | Squirrel-tail's Fescue |
| *Scorzonera autumnalis* | | | Autumn Hawkbit | |  |  |  |
| *Scutellaria galericulata* | | | Skullcap | |  |  |  |
| *Succisa pratensis* | | | Devil's-bit Scabious | |  |  |  |
| *Veronica officinalis* | | | Heath Speedwell | |  |  |  |
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