

# THE COMMON LANDS OF GREATER MANCHESTER

## A BIOLOGICAL SURVEY

### 1. Introduction

This report presents the results of a biological survey of registered common lands in the county of Greater Manchester. It is one of a set of county reports that have been compiled over a twelve-year period by the Rural Surveys Research Unit (University of Wales, Aberystwyth), and forms part of a wider study and inventory of commons in England and Wales (Aitchison, 1998; Aitchison, *et al*, 2000).

The central objective of the national survey of commons has been to draw together an array of biological data from a variety of sources, including Phase 1 mapping of vegetation and habitat types. Such data are potentially of value not only to those with a specialist concern for the identification and conservation of biodiversity, but also to those with a broader interest in the use and effective management of commons - policy makers, stakeholders and other parties. While the databases produced as a result of the national survey focus on biological attributes (flora, fauna and habitats), they also include reference to the location and extent of commons, the nature of rights of common (if any) and details concerning ownership. Also recorded is the association of commons with various protected area networks (e.g. national parks, SSSIs). Where available, and mainly through field observations, information has been gathered on the use and management of individual commons, including reference to particular problems that appear to exist (e.g. over- or under-grazing, encroachment). These various facets of the survey, and the precise nature of the data that have been collated, are considered in detail.

While the national survey of commons is relatively broad in compass, its main aim, as noted above, is to determine the biological characteristics of common land and to assess the value of these highly distinctive areas in terms of their contribution to the conservation of biodiversity. Before considering the situation as it applies in the county of Greater Manchester, however, it is appropriate to provide a general introduction, focussing briefly on the common land debate, as it has evolved over the

years, but with a particular emphasis on the conservation interest in such areas and on broader policy issues.

## **2. Background : Reports, Legislation and Policies**

In presenting evidence to the Royal Commission on Common Land in 1956, the Nature Conservancy (as it then was) stressed that in many regions of England and Wales commons were “wildlife sanctuaries”, “reservoirs for species”, and “disproportionately rich in examples of plant and animal communities which have largely been eliminated from surrounding localities”. The Royal Commission itself noted that, protected by statutes from many of the pressures that had so markedly impacted upon the countryside at large, commons were often “islands of semi-natural vegetation” and “refuges” for rare and interesting wildlife.

Given the significance of common land as a national resource, the Scott Report of 1942, in considering the "well-being of rural communities and the preservation of rural amenities", called for steps to be taken "to record details of common lands, to safeguard any rights of public rights of access or use, and otherwise to ascertain the position of commoners" (Cmnd 6378, 1942, p59). It was not until 1955, however, with the setting up of a Royal Commission on Common Land, that these matters were pursued further. Following a detailed and broadly-based investigation, the Royal Commission reported in 1958 and made a host of recommendations concerning the protection and management of "these last uncommitted reserves of land". The then Government did not respond to the Commission's main recommendations, but local authorities were subsequently charged with compiling and maintaining registers of land, ownership and rights of common (Commons Registration Act, 1965). The 1965 Act applies to those tracts of land subject to rights of common, together with wastes of manors not subject to rights of common. The process of common land registration was completed in 1972, but numerous disputes concerning ownership and rights of common had to be resolved by Commons Commissioners (Gadsden, 1988; Aitchison and Gadsden, 1992).

The problems associated with the registration process thwarted efforts to promote further legislation, but the common land question continued to be a focus of attention. In 1976 an inter-departmental working party (*Common Land* :

*Preparations for Comprehensive Legislation*, DOE, 1976) reaffirmed the main conclusions of the Royal Commission, while the Common Land Forum (established in 1983) put forward detailed proposals concerning public access and the establishment of management associations/schemes for areas of common (Common Land. Report of the Common Land Forum, Countryside Commission, CCP215, 1986). Despite widespread agreement and a series of positive pronouncements, the recommendations of the Common Land Forum were not acted upon. Thus, in the White paper *Rural England : A Nation Committed to a Living Countryside*, (DOE and MAFF, 1995) it was stated that, while :

*“We remain committed to maintaining the status of common land, to protecting the rights of commoners and to encouraging proper management.....*

*We do not now believe that comprehensive legislation, along the lines of that proposed in 1986 by the Common Land Forum, is feasible or practical”.*

At the time of writing, and of particular relevance to common lands, a draft Bill has been published (The Countryside and Rights of Way Bill) which, if enacted as drafted, would grant access to specified categories of open land. One of these categories is registered common land; the others include mountain moor, heath and down. It should be added that the draft Bill makes no reference to a 'universal' right of access, nor is the phrase a 'right to roam' adopted. Two other publications of importance to the future governance and management of commons are a “*Good Practice Guide on Managing The Use of Common Land*”, (DETR, 1998) and “*Greater Protection and Better Management of Common Land in England and Wales*” (DETR, 2000).

On the ecological front, a number of studies have sought to quantify the conservation significance of common land in England and Wales. These include the reports prepared for the Royal Society for Nature Conservation by Palmer (*A Future for Wildlife on Commons*, Parts 1 and 2, 1989) and by Bruce (*Wildlife Importance of Common Land*, 1989). A preliminary overview of results generated by the Rural Surveys Research Unit (University of Wales, Aberystwyth) for 18 regions in England and Wales - *Common Land and Conservation : A Synthesis*

(Aitchison and Medcalf, 1994) - also shed light on the diversity of flora and fauna that are to be found on commons and wastes. Subsequently, Aitchison also summarised the findings of the biological survey of commons for the whole of Wales (Countryside Council for Wales, 1997). This latter study is highlighted in a recent report by RSPB Cymru entitled '*Living Commons*' (RSPB Cymru, 2000).

As has already been noted, this present county report is one of a set of reports compiled by the Rural Surveys Research Unit (University of Wales, Aberystwyth) over an twelve-year period. The first collection of reports was commissioned and funded by the Nature Conservancy Council, and thereafter by English Nature. To complete the picture a study of commons in the remaining counties of England was commissioned in 1995 by the Department of the Environment (now the Department of the Environment, Transport and the Regions - DETR). This report has been prepared as part of this latter phase of the national survey of common lands.

### **3. The Database of Registered Commons**

Before describing the attributes of commons in Greater Manchester it is necessary to note that the data presented here are derived from three main sources. Firstly, the registers of common land that are maintained by local authorities; secondly, information gained from site-based evaluations of individual commons; and thirdly, from the biological records of local/regional agencies and organisations (e.g. English Nature offices, county wildlife trusts). The information collated from these various sources has been entered into a Microsoft Access database to facilitate the analysis and retrieval of common land records. Some of this information is quantitative in nature (e.g. areas of habitats), and some is textual and qualitative (e.g. descriptions of vegetation and associated habitats). In addition to the computer files that constitute the database, record sheets have been produced that detail the essential characteristics of all commons included in the biological survey (i.e. mainly commons over 1 hectare in size). These sheets constitute a hard copy physical record and are included in Appendix 3 for the county of Greater Manchester. In addition to the types of data described above the data sheets also include maps of Phase 1 habitat types for those commons that were included in the survey.

Given that the Phase 1 information forms such a key part of the data record it is appropriate at this point to describe briefly the approach adopted within the survey. This involved :

(i) identifying all common land over 1 hectare in size and preparing broad-based vegetation maps using the standard 'Phase 1' coding of the Nature Conservancy Council (as it then was), and where possible, National Vegetation Classification communities. Phase 1 surveys secure a relatively rapid record of semi-natural vegetation and wildlife habitats at a scale of 1:10000.

(ii) preparing descriptions of the biological interest of each common land unit, principally from a botanical viewpoint, but also recording information on fauna where feasible. These descriptions include references to particular species of flora and fauna identified within the surveys. From these lists of species have been compiled for each of the county reports. Quantitative and textual information summarise the essential biological attributes of individual commons.

(iii) from on-site observations, making summary evaluations of management practices on each common, together with recommendations (where sufficient information is available) concerning the resolution of any problems relating to the conservation interest.

Although the national survey of commons is based on a Phase 1 mapping of habitat types it is evident that the various categories identified can be aggregated into other higher order groupings to suit particular needs. Thus, it is possible for instance to aggregate the categories with a view to defining broad and priority habitat types as defined in the UK Biodiversity Action Plan and associated reports (1994, 1998). This said, it should be emphasised that the matching of Phase 1 categories to these new biodiversity categories cannot always be effected neatly, for in certain cases more detailed information concerning particular species or site conditions is required. Despite this, and since the biodiversity value of commons is an important issue, an effort is made in this report and in the summary report to comment on such matters, and to generate estimates of the habitat types and areas concerned.

Although the biological survey of commons in England and Wales has examined all CL units over 1 hectare in size, it is to be appreciated that this threshold is somewhat arbitrary in nature and was selected to limit extensive field work demands. To identify those commons over 1 hectare reference was initially made to the area statistics detailed in the land sections of the registers. However, since these statistics were known to be frequently crude estimates, maps held in the common land registration offices were also consulted to check if the areas recorded were sufficiently reliable. It is for this reason that certain commons with registered areas over one hectare were not covered in the survey, and why others under one hectare were actually included. Some commons over 1 hectare in size were also excluded because the areas concerned were highly fragmented, with component parts being less than this threshold. A small number of commons under 1 hectare were also included because they abutted other larger areas of common land.

Finally, in regards to the database of common lands it can be noted that OS grid references define centroid locations for individual commons. Although not used in this report (apart from the production of the location map), these co-ordinates has enabled the integration of the survey information into a full Geographical Information System (GIS). In this case the GIS adopted is ArcInfo and ArcView3. Such a system greatly extends the utility of the Access database, and allows sophisticated spatial searches, queries and mapping to be undertaken. The GIS facility was extensively deployed in the preparation of the full England report (Aitchison *et al*, 2000).

Having described the aims and objectives of the biological survey of common land in England, it is appropriate to consider the essential characteristics of common lands in the county of Greater Manchester.

#### **4. The Common Lands of Greater Manchester**

Although an effort was made by the Royal Commission on Common Land to ascertain the location and extent of commons in the mid 1950's, it was not until 1967, following the Commons Registration Act 1965, that a formal inventory of commons and greens was initiated in England and Wales. Despite weaknesses in the legislation and deficiencies in the procedures adopted during the registration process itself, the 'terriers' prepared by the various registration authorities now serve as a definitive

record. The 1965 Act defines common land as '*land subject to rights of common (as defined in this Act) whether those rights are exercisable at all times or only during limited periods*', and '*waste land of a manor not subject to rights of common*' (Section 22). A list of the commons recorded in the registers for Greater Manchester is included in Appendix 1.

### **(i) Sizes of Commons**

At the time they were consulted the commons registers for the county of Greater Manchester contained 41 separately identified commons (CL Units). It is to be appreciated that the registers themselves can be subject to modification in each of their three sections – lands, rights and ownership. It is for this reason that certain of the data presented here, notably concerning rights and ownership, need to be treated with a degree of circumspection. This does not apply to the data collated in regard to habitat types however. For the counties considered in this phase of the survey, these were derived through field evaluations undertaken between 1996 and 1999.

While the land section of the registers generally include figures specifying the areas of these commons, they cannot be regarded as accurate measures. More detailed mapping and calibrations made during the biological evaluation of the commons (e.g. the measurement of habitat areas) have indicated that errors can be of a significant order. In this section of the report reference is made to the 'register' areas rather than re-calculated areas. Of necessity the latter are however used in the statistical summary of habitat types below.

Figure 1 shows that the majority lie in the northern part of the county, with distinct clusters in the west and the east, either side of the Bolton/Manchester axis.

The total registered area of these commons is 3137 hectares. Nearly 50% of commons in the county are under 5 hectares. However, there are eight registered areas of common land that exceed 100 hectares. These are CL494 (Castleshaw Moor - 128 hectares), CL310 (Castleshaw and Denshaw Moors - 130 hectares), CL168 (Shore Moor - 169 hectares), CL 166 (Wardle Common - 173 hectares), CL163 (Rooley or Shore Moor - 313 hectares), CL162 (Knowl Moor - 396 hectares), CL674 (Blackstone Edge Common - 666 hectares) and CL675 (Butterworth or Bleakdale Common - 839

hectares). All of these large commons are located in the moorlands to the north and east of the Rochdale/Oldham conurbation. On the ground the area of individual tracts of common land can be much larger than emerges from the registers because of the contiguity of commons. Thus in Greater Manchester there are 13 commons that are contiguous with other commons.

## **(ii) Rights of Common**

In Halsbury's Law of England a right of common is defined as a "*right, which one or more persons may have, to take or use some portion of that which another man's soil naturally produces*" (4th Edition, vol 6, p177). It follows from this that owners of commons cannot exercise "rights of common" on their own land. That said, they can still possess rights to use their commons for various purposes (e.g. sporting rights, grazing rights, rights to take minerals). Without entering into detail, it can be noted in regard to rights of common that a number of different types of rights can be distinguished. The six main categories are : rights of pasture (sheep, cattle, horses and ponies), estovers, turbary, piscary, pannage and common in the soil.

Because of deficiencies and complexities in the way rights of common were registered it is not possible to state precisely how many separate holdings/parts of holdings have rights attached to them. A major complication in this regard is that the registers contain large numbers of entries that are either cross-referenced (i.e. a particular right may relate to more than one registered unit of common land) or multiply registered (i.e. the same right is separately, but incorrectly, recorded for more than one common). A further difficulty is that the rights sections of the registers are continually being updated. That said, no doubt many changes that have occurred on the ground have not been recorded.

At the time they were consulted the number of final and provisional rights entries for commons in the county of Greater Manchester was 153. Given the issues detailed above it is evident that this figure should be regarded as indicative rather than definitive. In this regard it should be noted that 10 commons had rights entries that were cross-referenced to other commons.



Thirteen commons (32% of all commons) in Greater Manchester have registered rights of common. In terms of numbers of entries on the commons concerned, these vary greatly, but with the highest figures being returned by commons in the moorlands of the east. Table 1 shows the numbers of commons recording different types of rights. It highlights the importance of rights to graze cattle and sheep. The relatively high figures for turbary and estovers are also notable however. To complete the picture, it can be noted that other types of rights that are not ‘of common’ were recorded on 8 commons.

Table 1

Rights of Common	Number of Commons	% Commons
Sheep	11	26.8
Cattle	12	29.3
Horses/Ponies	4	9.8
Pasture (Unspecified)		0.0
Other Livestock	3	7.3
Estovers	6	14.6
Turbary	10	24.4
Common in the Soil	3	7.3
Piscary		0.0
Pannage		0.0
Other Rights	8	19.5
Number of Commons with Rights	13	31.7

*N.B. Individual commons can have more than one type of right. Figures refer to surveyed commons only.*

### **(iii) Ownership**

Commons and wastes, like ordinary freehold land, have owners. They do not necessarily form part of the public domain. In the common land registers the ownership sections for many commons were, at the outset, empty. This was either because ownership was not known at the time or simply because the details were not recorded (the 1965 Act did not make this mandatory). The situation in terms of ownership can be quite complex with commons frequently having more than one owner, and owners of different types (eg private individuals, trusts, companies etc).

When the registers for Greater Manchester were last consulted 14 commons (34%) had no information recorded concerning ownership. Where it proved impossible to trace owners, Commons Commissioners were required by Section 9 of the 1965 Act to place the commons concerned under the protection of their local authorities. In Greater Manchester 2 commons had been made subject to Section 9 at the time the registers were examined.

The largest number of commons (14) were wholly under private ownership (other than traditional estates). Some commons also had private owners for parts of the land concerned (3). Five commons were owned by parish and other councils. Just two commons were owned by traditional estates.

These statistics should be regarded as illustrative of the diversity of ownership forms that prevail in regard to common land; in no way should they be considered definitive of the current situation in the county. Ownership details for commons can quickly become outdated, as properties change hands. Furthermore, titles to ownership may not be specified within the common land registers themselves; in some cases reference is simply made to records held at the Land Registry.

## **5. Biological Characteristics of Common Land**

Before considering the biological characteristics of common land in Greater Manchester it is necessary to draw attention to problems that occur because of the way in which the registers were originally compiled and the confounding impact of boundary changes that occurred after the registration process. At issue here is the attachment of commons to particular counties. Thus, it should be noted that included within this particular report are a number of commons that, although being registered with Lancashire County Council or various West Yorkshire local authorities, are situated largely within Greater Manchester.

The Lancashire-registered commons are CL 162, Knowl Moor, CL 163, Rooley or Shore Moor, CL 166, Wardle Common, CL 168, Shore Moor and CL 173, Land in the vicinity of Naden Reservoirs. However, it should be noted that for the reasons described above these particular sites were also incorporated into the earlier report on the common land occurring in Lancashire (Crowther and Aitchison, 1993). These sites

lie entirely within Greater Manchester. In addition, CL42, Holcombe Moor occurs about 50/50 within both counties. As it is registered in Lancashire, this site has not been included in this report on Greater Manchester commons.

The West Yorkshire-registered commons are CL310, Castleshaw and Denshaw Moors, CL494, Castleshaw Moor Delph, CL 536, Part of Castleshaw Moor, CL 674, Blackstone Edge Common and CL 675, Butterworth or Bleakdale Common. Again, the entire area of these sites lies within Greater Manchester, apart from CL 674, a small part of which lies in West Yorkshire.

### **(a) Habitat Types**

For purposes of the survey habitats were categorised according to the NCC Phase 1 classification (Nature Conservancy Council, 1990). It is to be appreciated that this is a broad structural classification rather than one based upon vegetation communities. Phase 1 habitats are recorded on the site cards for each of the commons and on associated maps. To add further detail, an effort was made to apply the National Vegetation Classification (Rodwell, 1992) wherever possible. This extra information is included mainly in the description of vegetation communities.

In preparing the habitat maps and site descriptions for the individual commons, the project brief required that extensive consultation of existing information sources should be made and that any field survey be targeted at filling any 'gaps' in available habitat information. In the context of Greater Manchester, information relating to SSSIs was obtained from English Nature. Reference has also been made to various Phase 1 surveys. These and other information sources, used to support the field surveys, are fully described in the relevant sections of the individual site reports (Appendix 3).

Table 2 provides a statistical summary of the habitats recorded during the course of the survey. A total of 27 sites were included in the survey. It should be noted that there is a discrepancy between the calculated area of common land for the surveyed commons and the area statistics specified in the registers (see above). In all, 39 different habitat types were recorded.

Table 2

Habitat Types (NCC Phase 1)	Area (hectares)	Number of Commons	% Common Land
<b>Woodland and Scrub</b>			
A111 Woodland : Broadleaved (Semi-natural)	2.6	4	0.1
A112 Woodland : Broadleaved (Plantation)	1.1	3	0.0
A122 Woodland : Coniferous (Plantation)	0.2	1	0.0
A132 Woodland : Mixed (Plantation)	13.3	4	0.4
A21 Scrub : Dense/Continuous	4.1	10	0.1
A22 Scrub : Scattered	2.5	1	0.1
<b>Grassland</b>			
B11 Acid Grassland (Unimproved)	803.2	12	24.7
B12 Acid Grassland (Semi-Improved)	23.1	7	0.7
B21 Neutral Grassland (Unimproved)	1.5	1	0.1
B22 Neutral Grassland (Semi-Improved)	11.5	5	0.4
B4 Improved Grassland	19.8	4	0.6
B5 Marsh/Marshy Grassland	705.5	14	21.7
B6 Poor semi-improved grassland	11.4	6	0.4
<b>Tall Herb and Fern</b>			
C11 Bracken Continuous	120.4	10	3.7
C12 Bracken Scattered	2.7	2	0.1
C31 Tall Ruderal	2.6	7	0.1
<b>Heathland</b>			
D11 Dry Dwarf Shrub Heath (Acid)	13.9	6	0.4
D2 Wet Dwarf Shrub Heath	20.5	6	0.6
D5 Dry Heath/Acid Grassland Mosaic	320.2	11	9.9
<b>Bog, Flush and Fen</b>			
E162 Raised Bog	10.8	2	0.3
E17 Wet Modified Bog	212.4	6	6.5
E18 Dry Modified Bog	616.1	9	19.0
E21 Acid/Neutral Flush	70.3	10	2.2
E22 Base-rich flush	0.1	1	0.0
E32 Basin Mire	2.8	2	0.1
E4 Bare Peat	137.1	7	4.2
F1 Swamp	1.7	5	0.1
F21 Marginal Vegetation	0.2	1	0.0
<b>Open Water</b>			
G1 Standing Water	2.2	7	0.1
<b>Rock Exposure and Waste</b>			
I111 Acidic/neutral inland cliff	0.7	4	0.0

I21	Quarry	2.2	1	0.1
I24	Artificial : Refuse-tip	6.2	1	0.2
I22	Spoil	0.8	1	0.0
I141	Acidic/neutral rock outcrops	32.1	8	1.0

### **Anthropogenic Habitats**

J11	Arable	1.1	1	0.0
J12	Amenity Grassland	32.2	8	1.0
J3	Built-up Areas	2.2	4	0.1
J4	Bare Ground	26.5	8	0.8
J5	Other Habitat	12.9	11	0.4

### **Woodland and Scrub**

Woodland of all types occupies an area of 17.1 ha. (0.5%) of surveyed common land. As can be seen from Table 2, the greater proportion of this is mixed woodland of planted origin (**A132** – see below).

**A111 Semi-natural broadleaved woodland.** Several of the small commons in the western part of the county support small areas of secondary broadleaved woodland. Canopy species include *Quercus robur*, *Fraxinus excelsior*, *Sorbus aucuparia*, *Betula pendula* and *Acer pseudoplatanus*. The greatest extent of the habitat occurs on CL 262, Land in Urban District of Compton, which lies on the “Pennine Fringe” at the eastern edge of the county. This appears to be somewhat wet in character, being dominated by *Alnus glutinosa*, with a heathy field layer containing *Deschampsia flexuosa*, *Vaccinium myrtillus* and *Galium saxatile*.

**A112 Planted broadleaved woodland** occurs in relatively small stands on several of the commons in Wigan Borough, to the western side of the county. Species present include *Alnus incana*, *Acer pseudoplatanus*, *Tilia* sp., *Betula* spp. and *Populus tremula*.

**A132 Mixed plantation woodland.** The major stand of this habitat (i.e. 10.3 ha.) occurs on CL 68, Amberswood Common. The canopy contains trees of *Pinus* sp., *Larix* sp., *Picea* sp., *Alnus glutinosa*, *Betula pendula*, *Salix* spp. and *Sorbus*

*aucuparia*. The woodland has been created on an area restored from open-cast mining activity.

**A21/A22 Dense/scattered scrub** occurs mainly as small stands on the commons to the western side of the county. Species occurring include *Ulex europaeus*, *Salix* spp., *Crataegus monogyna*, *Sambucus nigra*, *Rubus fruticosus* agg. and *Prunus spinosa*.

### **Grassland**

Grassland of all types (excluding **J12 Amenity grassland**) is a major habitat assemblage on Greater Manchester commons, occupying a total area of 1,575.91 ha. (48.5%) of the surveyed common land.

**B11/B12 Unimproved/semi-improved acidic grassland** between them account for 826.3 ha. (25.4%) of the surveyed area and the total for **B11** represents the most extensive recorded habitat types on the county's common land. This habitat occurs mainly on the commons situated at the fringe of the Southern Pennines that lie in the north-eastern part of the county. Characteristic species include *Agrostis capillaris*, *Nardus stricta*, *Deschampsia flexuosa*, *Festuca ovina*, *Juncus squarrosus*, *Anthoxanthum odoratum*, *Galium saxatile*, *Rumex acetosa*, *R. acetosella* and *Potentilla erecta*.

Whilst the greater part of this habitat occurs on the county's "Upland" commons, there are limited areas to be found on "Lowland" sites - e.g. CL 1, Highfield Moss, CL 49, Ashton Heath. Swards occurring in "lowland" situations (i.e. below 300m) are of particular conservation interest because "Lowland dry acidic grassland" is one of the "Priority Habitats" of the UK Biodiversity Action Plan (see below).

**B21/B22 Unimproved/semi-improved neutral grassland** account for a minute proportion of the total grassland area (13.0 ha. – 0.4% of surveyed common land). A major portion of this comprises unmanaged vegetation dominated by coarse grasses such as *Arrhenatherum elatius*, *Dactylis glomerata*, *Holcus lanatus*, *Deschampsia cespitosa*, and *Poa* spp. Associated herbs include *Centaurea nigra*, *Heracleum sphondylium*, *Tragopogon pratensis*, *Achillea millefolium*, *Vicia cracca*, *Hypochaeris radicata* and *Conopodium majus*. Some swards also contain elements of a tall ruderal

flora (see **C31** below). All vegetation placed in the “unimproved” category belongs within the UK BAP “Priority Habitat” category of “Lowland hay meadow” (see below).

**B4/B6 Improved/poor semi-improved grassland** between them occupy an area of 31.1 ha. (1.0%) of the surveyed area. These are grasslands of low species diversity which have arisen through sustained agricultural use.

**B5 Marshy grassland**, at a measured area of 705.51 ha. represents the second-most extensive habitat type recorded on the county's commons. The vast majority of this grassland comprises a species-poor sward dominated by *Molinia caerulea* and is extensively associated with the “Pennine Fringe” commons. Swards of *M. caerulea* occur both on shallow peat (i.e. **B5**) and on the deeper, often re-distributed peat around the margins of degraded blanket mire (i.e. **E17** wet modified bog – see below).

On the smaller commons elsewhere in the county, marshy grassland vegetation tends to be more diverse, in fact representing some of the most species-rich grasslands encountered on the county's commons. Again, *M. caerulea* tends to dominate, although sometimes with, or replaced by *Juncus effusus*. Other associates include *Phalaris arundinacea*, *Juncus* spp., *Lotus pedunculatus*, *Cardamine pratensis*, *Achillea ptarmica*, *Galium palustre*, *Scutellaria galericulata*, *Angelica sylvestris*, *Carex* spp., *Lysimachia punctata*, *Dactylorhiza fuchsii*, *D. praetermissa*, *Pulicaria dysenterica*, *Lychnis flos-cuculi*, *Sphagnum* spp. mosses and *Iris pseudacorus*. A good example of a diverse marshy grassland flora occurs on CL 68, Amberswood Common.

Note that “Purple moor grass and rush pasture” is one of the “Priority Habitat” categories of the UK BAP (see below).

### **Heathland**

Heathland of all types occupies an area of 354.56 ha (10.9% of the surveyed area). Most of this occurs as a mosaic with acidic grassland. Note that all heathlands situated at an altitude of below 300m belong within the UK BAP "Priority Habitat" category of "Lowland Heathland" and all those above belong to "Upland Heathland" With most

of the recorded heathland habitat occurring on the "Pennine Fringe" commons, most of this will therefore fall within the latter category.

**D11 Dry dwarf shrub heath.** Pure heath swards on the "Pennine Fringe" commons are of rather limited extent to the effect of high grazing levels and in fact most of the dry heath recorded has been placed in the **D5 Dry heath/acidic grassland mosaic** category (see below).

The largest area of "lowland" heathland occurs on CL 49, Ashton Heath. This vegetation is dominated by *Calluna vulgaris*. Other associates include *Agrostis capillaris*, *Galium saxatile*, *Festuca ovina*, *Deschampsia flexuosa*, *Potentilla erecta*, *Rumex acetosa*, *R. acetosella*, *Nardus stricta* and *Juncus squarrosus*.

**D2 Wet dwarf shrub heath** at a recorded extent of 20.54 ha, only accounts for only 5.8% of total heathland habitat. Almost all of this occurs within the "Pennine Fringe" commons. The habitat is generally characterised by the presence of dwarf shrubs (any of *Calluna vulgaris*, *Erica tetralix*, *Empetrum nigrum* and *Vaccinium myrtillus*) within stands of *Molinia* grassland.

**D5 Dry heath/acidic grassland mosaic.** Where dwarf shrub cover falls below 30%, or where there are discrete patches of pure acidic grassland, the vegetation is placed into this category. Such a mosaic is typical of the "Pennine Fringe" commons, where a long history of sustained high grazing has diminished the cover of dwarf shrub vegetation. In fact around 90% of the heathland habitat recorded has been placed in this category. Dwarf shrubs are often in a grazed/suppressed condition and mainly comprise *Empetrum nigrum* and *Vaccinium myrtillus* with rare *Calluna vulgaris*..

### **Bog, Flush and Fen**

Peatland habitats are a major group on Greater Manchester's commons, occupying a total area of 1,049 ha. (32.3%) of the surveyed area.

**E162 Raised Bog.** The major portion of this comprises CL 1, Highfield Moss. Situated in a "Lowland" part of the county, all raised bogs are defined as a "Priority Habitat" of the UK BAP (see below). This particular feature is described as being the



"best remaining example of the raised mires which once covered large areas of lowland Greater Manchester and Merseyside". The raised mire supports species such as *Molinia caerulea*, *Erica tetralix*, *Calluna vulgaris*, *Eriophorum vaginatum*, *E. angustifolium*, *Sphagnum* spp. and *Juncus effusus*. Less common species include the nationally scarce (NS) *Gentiana pneumonanthe*. These are species recorded from between 16 - 100 ten km squares of the Ordnance Survey Grid (Stewart *et al.* 1994). Other species include *Genista anglica* (one of only two Greater Manchester sites) and several species with only 5 county sites: *Carex otrubae*, *Erica tetralix*, *Pedicularis sylvatica* and *Vaccinium oxycoccos*. Other notable species include *Carex echinata*, *C. panicea*, *Hydrocotyle vulgaris* and *Juncus bulbosus*.

**E17 Wet modified bog** represents a significant proportion of the total extent of recorded blanket mire, occupying around 212 ha. (20% of recorded peatland). This habitat type is typified by a dominance of *Molinia caerulea* and tends to occur on areas of disturbed and re-deposited peat around blanket mire margins. Where the peat depth thins (i.e. to less than 0.5m), this grades into *M. caerulea* marshy grassland (see above). Other local associates include *Trichophorum cespitosum*, *Calluna vulgaris*, *Eriophorum vaginatum* and *E. angustifolium*.

**E18 Dry modified bog** At a recorded area of 616 ha, this represents the third-most extensive habitat type recorded during the survey (19% of surveyed area). This habitat is representative of the typical degraded South Pennine blanket mire, being essentially rather dry, with no or little *Sphagnum* mosses present and often with marginal peat "hagging" and other erosion features. Generally this vegetation is dominated by *Eriophorum vaginatum* and *Deschampsia flexuosa*, with locally frequent *Eriophorum angustifolium*. Around the margins in particular, *Empetrum nigrum* is locally abundant. Other less-commonly occurring associates include *Vaccinium myrtillus*, *Calluna vulgaris* and *Erica tetralix*.

**E21 Acidic/neutral flush.** This habitat occurs extensively on the "Pennine Fringe" commons, forming essentially linear features where there is movement of water across the substrate. Around 70 ha. of the habitat was recorded (2% of surveyed area). The most frequently encountered association is species-poor, being dominated by *Juncus effusus* and *Sphagnum recurvum*. A further type comprises a carpet of

small sedges such as *Carex nigra*, *C. panicea*, *C. echinata* and, *C. viridula* subsp. *oedocarpa*.

Other common associates include *Polytrichum commune*, *Eriophorum angustifolium*, *Agrostis canina*, and *Molinia caerulea*. More diverse flushes include species such as *Carex curta*, *C. rostrata*, *Erica tetralix*, *Vaccinium oxycoccos*, *Epilobium palustre*, *Viola palustris*, *Narthecium ossifragum*, *Hydrocotyle vulgaris*, *Potamogeton polygonifolius*, *Menyanthes trifoliata*, *Stellaria alsine*, *Lotus pedunculatus* and *Equisetum fluviatile*. Good examples occur on CL 163, Rooley or Shore Moor, CL 166, Wardle Common and CL 168, Shore Moor.

**E4 Bare peat** is associated with areas of actively eroding blanket mire and includes features such as "hagging" (bare, marginal exposed walls of peat around the mire), exposed peat within the surface of the mire itself and marginal gullies of bare peat cutting into the mire surface. The estimated overall area of the habitat on Greater Manchester's commons is around 137 ha. (4.2% of the surveyed area).

The most extensive area of eroding peat is to be found on CL 674, Blackstone Edge Common (105 ha), where there has been significant exposure of the mineral substrate. On part of CL 494, Castleshaw Moor Delph, deep erosion of blanket peat has apparently been initiated by the presence of the Pennine Way long distance footpath.

**F1 Swamp** occurs on just 5 sites. The greater proportion of this occurs on CL 68, Amberswood Common, where stands dominated by *Phalaris arundinacea* occur in association with marshy grassland. Smaller stands on the other sites (see site records).

### **Open Water**

**G1 Standing water** of various types was recorded from 7 sites. Two pools occur in the raised mire of CL 1, Highfield Moss. A small pond occurs on CL 3, Edge Green Common, whilst a larger feature (0.76 ha.) is situated on CL 102, Amberswood Common. This contains *Potamogeton natans* and *Callitriche* sp. The margins have discontinuous stands of *Typha latifolia*, *Sparganium erectum* and *Eleocharis palustris*.

There are also a variety of small pools/ponds on some of the "Pennine Fringe" commons.

### **Rock Exposure and Waste**

**I141 Acidic/neutral rock outcrops.** The hills of the "Pennine Fringe" along the north-eastern part of the county contain a variety of naturally-occurring formations. The most notable are the outcrops of Millstone Grit along Blackstone Edge - CL 375, Butterworth or Bleakdale Common. Elsewhere there are localised exposures of shale.

There are also extensive abandoned gritstone quarries, such as Ding Quarry which encroaches onto CLs 162, Knowl Moor and CL 163, Rooley or Shore Moor. These were created by the huge demand for local building stone during the Industrial Revolution.

**I24 Refuse tip** occurs on CL 68, Amberswood Common. This applies to a part of the common which has seen past open-cast coal mining activity, followed by use as landfill, with subsequent landscaping work on part of the area (i.e. re-seeding of grassland and planting with trees).

### **Anthropogenic Habitats**

**J12 Amenity grassland** occurs on several of the "lowland" commons. With a total recorded area of 32.2 ha. it represents the second-most extensive habitat recorded on the county's common land and represents grassland swards that are intensively mown for amenity purposes. Major sites include CL 102, Amberswood Common (10.5 ha.), CL 128, Aspull Moor (10.55 ha.) and CL 246, Moseley Common. Planted ornamental trees tend also to be a feature of such sites.

### **(b) Fauna**

While the main purpose of the Biological Survey of Common Land was to record the habitats and vegetation present, some consideration was also given to fauna. Although faunal survey work is much more time-consuming, and often cannot be undertaken without numerous visits to a site, an attempt was made to compile information on

fauna through an examination of existing information sources and by noting the more obvious and easily-recognised elements of the fauna whilst undertaking the other fieldwork. It is recognised that that much information pertaining to fauna exists in the records of English Nature and specialist recorders. These were not consulted for this particular survey. With these caveats duly noted, it is appropriate to make brief reference to the major faunal groups. Appendix 2 includes the full list of fauna mentioned within the site records.

## **Vertebrates**

### **Birds**

A range of common birds were noted during the site visits. Woodland/scrub supports species such as blackbird, song thrush, robin, wren and blue tit. Birds of more open habitats include chaffinch, house sparrow, jackdaw magpie, swallow and common gull.

Lapwing were noted on CL 3, Edge Green Common and CL 171, Helpet or Helpit Edge, although it is not known whether these sightings represent breeding records. Meadow pipit recorded from CL 614, Billy Ground. Ponds provide sightings of mallard and moorhen. CL 1, Highfield Moss, is reported to support representative breeding and wintering bird populations.

Some of the county's upland commons are of major ornithological importance. The commons to the east of Littleborough, lying along and indeed locally straddling the border with West Yorkshire, lie to a large extent within the South Pennine Moors SSSI. The importance of these areas for upland breeding birds was one of the major stimuli to their designation as SSSI and their current status as a proposed Special Protection Area (pSPA) - see below.

The South Pennine Moors support internationally important numbers of golden plover, curlew, merlin and twite. These and a range of other breeding birds all depend on the mosaic of habitats found across the moors and many occur here at their southernmost British breeding stations. Other birds occurring in good numbers include skylark, a "Priority Species" of the UK Biodiversity Action Plan (UK

Biodiversity Group, 1998), in addition to wheatear, whinchat and meadow pipit. There are occasional records for redshank and in some years, stonechat are also recorded.

In addition, the other upland commons that do form part of the SSSI are important for relatively widespread upland birds such as wheatear, meadow pipit and skylark. In addition, CLs 162, 163 and 168 between them provide past breeding records for dunlin, merlin, lapwing, twite and golden plover. In addition, a red grouse was seen on CL 168, Shore Moor.

Increasing recreational use of these moorland commons may pose threat of disturbance to many of these ground-nesting bird species during the breeding season. Such increased use may also have implications for the extensive use of these areas of moorland as water catchment (see below). Peregrine nest is small numbers on suitable crags and disused quarries.

Upland tributaries and streams provide habitat for birds such as dipper and grey wagtail. In addition, swallows were often seen feeding over these areas of moorland habitat during the site visits to commons.

### **Invertebrates**

**Lepidoptera (butterflies and moths).** A range of commons butterfly species were noted during the site visits: small tortoiseshell, peacock, painted lady, meadow brown, large white, speckled wood, small copper, small heath and small skipper.

**Odonata (damselflies and dragonflies).** CL 1, Highfield Moss, has several pools that are reported to support a good dragonfly fauna, including the "locally scarce" black darter *Sympetrum danae*.

### **(c) UK Biodiversity Action Plan**

In June 1992, the UK Government signed the Convention on Biological Diversity at Rio de Janeiro, which included the commitment to prepare national plans and programmes for the conservation of biodiversity. The UK Biodiversity Action Plan was published in 1994 (HMSO, 1994), this being followed by the initial steps toward the action planning process, with the publication of *Biodiversity: The UK Steering Group Report* (DETR, 1995).

This report highlighted a range of habitats with two categories being defined – **Broad Habitats** and **Priority Habitats** for action plan preparation. The report also included a "short" and a "middle" list of species, together totalling some 416 species, for which action plans had either already been prepared, or would be in the course of the UK BAP process. These lists have subsequently been combined, again with some revision and refinement, to produce a single list of **Priority Species** for action plan preparation.

#### **Broad Habitats**

Derived from a matching of Phase 1 habitat types to the 21 broad habitat categories Table 3 shows that three broad habitat types dominate in Greater Manchester. These are acid grassland (35%), bog (27%) and fen, marsh and swamp (26%). Together, these three types account for 88% of all common land in the county. The remaining eleven habitats that are recorded cover relatively small areas.

Table 3

Broad Habitat Types	Area (ha.)	% Area
1. Broadleaved, mixed and yew woodland	21.1	0.7
2. Coniferous woodland	0.2	
3. Boundary and linear features		
4. Arable and horticultural	1.1	
5. Improved grassland	63.4	2.1
6. Neutral grassland	13.0	0.4
7. Calcareous grassland		
8. Acid grassland	1082.3	35.3
9. Bracken	120.4	3.9
10. Dwarf shrub heath	97.9	3.2
11. Fen, marsh and swamp	780.3	25.5
12. Bog	839.3	27.4
13. Standing water and canals	2.3	0.1
14. Rivers and streams	0.1	
15. Montane habitats		
16. Inland rock	35.7	1.2
17. Built up areas and gardens	8.4	0.3
18. Supralittoral rock		
19. Supralittoral sediment		
20. Littoral rock		
21. Littoral sediment		
<b>Broad Habitats</b>	<b>3065.5</b>	<b>100.0</b>

### **Priority Habitats**

Unfortunately, the Phase 1 habitat types do not translate easily or convincingly into ‘priority’ habitats. In some cases the matching is clear, in most others very crude assumptions would have to be made if estimates of the areas associated with the various priority habitat types are to be derived. Given the complexities and uncertainties involved it is appropriate here to draw attention (albeit very tentatively) to the habitats concerned in Greater Manchester, where it is possible to do so. This translation cannot always be effected cleanly or fully because of the detail that underpins certain of the categories concerned.

**(a) Woodlands**

Six categories of woodlands have been classed as priority habitats. These are upland oakwood, lowland beech and yew woodlands, upland mixed ash woodlands, wet woodlands, native pine woods and lowland wood pasture and parkland. These categories refer to special types of situations and cannot be differentiated at the Phase 1 level of mapping. All that can be stated is that commons with A111 habitats may fall into one or more of these priority habitats. In Greater Manchester this habitat was recorded on just 4 commons and accounted for 3 hectares.

**(b) Ancient and/or species-rich hedgerows**

This habitat type could apply to a number of Phase 1 categories (J211, J212, J221, J222, J231 and J232). These would embrace both the ‘ancient’ and ‘species-rich’ dimensions of the habitat category. However, it is unlikely that those hedgerows that are species-poor (J212, J222 and J232) would be worthy of inclusion in the category. In Greater Manchester there were no commons where this priority habitat was recorded.

**(c) Cereal Field Margins**

Field margins were not examined in the survey, but it is worth noting that arable (J11) was recorded on just 1 common in the Greater Manchester area.

**(d) Lowland Hay Meadow**

Again it is not possible to differentiate this habitat type with accuracy. However, since it is dominantly associated with unimproved neutral grasslands reference can be made to Phase 1 category B21. The category refers specifically to lowland locations however. Taking the 250 metre contour (800 feet) as a threshold to distinguish lowland and upland locations, and referring specifically to the median elevation of the commons concerned, it can be noted that in Greater Manchester this habitat covers 1.5 hectares on a single common.

**(e) Upland Hay Meadow**

This category is difficult to comment upon since it specifically refers to NVC MG3 communities, mainly to be found in the uplands of northern and western Britain. It does not apply in the case of Greater Manchester.



**(f) Lowland Dry Acidic Heath**

Phase 1 categories B11 and B12 are applicable to this priority habitat in lowland locations. In Greater Manchester the survey identified 3 commons with this habitat (4.8 hectares).

**(g) Purple Moor Grass and Rush Pastures**

This priority habitat refers specifically to certain species-rich *Molinia/Juncus* swards in lowland sites. It is not possible to identify commons that fall into this category with accuracy, but it can be noted that in Greater Manchester the survey identified 4 lowland commons with B5 habitats (6.3 hectares). However, it is not possible from the survey data to differentiate commons or areas with species-rich swards.

**(h) Lowland Calcareous Grassland**

This priority habitat is broadly defined by two Phase 1 categories - B31 and B32. Neither of these habitats were recorded on lowland commons in Greater Manchester.

**(i) Upland Calcareous Grassland**

The Phase 1 categories associated with this priority habitat do not occur in upland situations in this county.

**(j) Lowland Heathland**

Lowland heathlands are defined by a number of Phase 1 types – D11, D12, D2, D5 and D6. These habitats occur on 2 lowland commons and cover 3 hectares.

**(k) Coastal/floodplain grazing marsh**

Identifying commons that have priority habitats of this type is difficult and could include areas with various Phase 1 types – B21, B22, B4, B5, B6 and H26. Much depends upon the geographical location of the commons and their management. The areas concerned should include “periodically inundated pasture, or meadow with ditches which maintain the water levels, containing standing brackish or fresh water.” For information it can be noted here that there are 10 lowland commons with one or more of the Phase 1 habitats specified. Identifying how many of these have the defining attributes of this priority habitat would require further field research.

**(l) Fens**

This habitat category is described as “minerotrophic peatlands”. These could include the following Phase 1 types in lowland situations – E31, E32, E33, E21, and E22. In Greater Manchester none of these habitats was recorded on the commons that were surveyed.

**(m) Reedbeds**

While this priority habitat would be mapped as F1 under the Phase 1 system it actually applies only to those areas where *Phragmites australis* is dominant. In Greater Manchester the F1 habitat occurs on 2 commons and covers 10.8 hectares.

**(n) Raised Bog**

This priority habitat matches the Phase 1 category E162. Details concerning this particular habitat have been presented above and need not be repeated here. Suffice it to say that raised bog habitats were identified on 24 commons and covered 1964 hectares.

**(o) Mesotrophic standing waters**

This priority habitat could apply to commons with Phase 1 types G12 and G15, but such a determination would require more detailed research. This habitat type was not recorded on any of the surveyed commons.

**(p) Eutrophic standing waters**

This priority habitat might include commons with G11 and/or G15 Phase 1 categories. These habitats were not recorded on any of the commons surveyed.

**(q) Aquifer-fed naturally fluctuating water bodies**

The two Phase 1 habitat types (G13, G14) that might include areas in this priority habitat category were not recorded on any of the commons surveyed.

**(r) Chalk rivers**

The Phase 1 type G25 relating to marl-based running water could define this particular priority habitat. However it was not identified on any of the commons surveyed.

**(s) Upland Heathland**

The various Phase 1 types that comprise this priority habitat category (see lowland heathland above) are to be found on 10 commons in Greater Manchester and cover an area of 351 hectares.

**(t) Blanket Bog**

Three Phase 1 habitat types identify the blanket bog category (E161, E17 and E18). In Greater Manchester this category covers 828 hectares and is found on 10 commons.

**(u) Limestone Pavements**

Limestone pavements constitute a discrete Phase 1 category (I13). They do not figure on any of the commons in the county.

**(v) Maritime Cliff and Slope**

Five Phase 1 habitats could be included in this priority habitat category (H81, H82, H83, H84 and H85). None of these were recorded on commons in the county.

**(w) Miscellaneous coastal habitats**

The list of priority habitats contains a number of highly specific coastal categories. These include (a) vegetated shingle structures (H3); (b) saltmarsh (H23, H24, H26); (c) sand dunes (H5, H64, H65, H66, H67, H68); (d) saline lagoons (G16); and (e) deep mud and mudflats (H11). None of these habitats were recorded on the commons surveyed in the county.

**Recorded Species and Priority Species**

A full list of species referred to in this report and the appendix of site records is presented in Appendix 2. Those which are "Priority Species" of the UK Biodiversity Action Plan (UK Biodiversity Group, 1998) – if any - are highlighted in **bold type**.

Note that the occurrence of a species on this list does not necessarily imply the existence of a confirmed biological record.

### **Notable Plant Species**

The nationally scarce *Gentiana pneumonanthe* (Stewart *et al.* 1994) occurs on CL 1, Highfield Moss. This site also contains several other species that are considered to be notable in a county context - see above.

### **Invertebrate Habitats**

Recorded invertebrate information has been outlined above. In an attempt to consider further the potential for invertebrates, the presence in noteworthy quantities of certain microhabitat types (e.g. expanses of bare ground, litter sources in quantity, mature and decaying trees etc.) was recorded. These are outlined in Table 5 below.

Table 5

#### Potential Invertebrate Microhabitat

Microhabitat Type	No. of commons
Scrub development	11
Leaf litter	1
<i>Molinia</i> litter	5
Mature trees	9
Dead wood	3
Eroding peat/mineral substrate	3

Features that may be of value amongst the county's upland commons include exposures of shale, various types of spoil, abandoned quarries, areas "poached" by the hooves of cattle and other livestock and areas of mineral substrate exposed by the erosion of blanket peat.

Structural elements of the vegetation can also be of importance for invertebrates. For example, several of the lowland commons support coarse, tussocky grassland, often

with an element of tall ruderal species, and sometimes scrub and woodland habitat. This imparts a wide structural diversity to the vegetation. Such sites are also associated with a variety of ponds and other wet areas.

Flushes and other wet areas on the open moorlands are also important in that these provide a breeding ground for crane flies (Tipulidae), which form an important food source for upland breeding birds such as red grouse, curlew and golden plover.

## **6. Use and Management**

During site visits observations were made concerning the use and management of commons. The uses and activities presented here should be regarded as indicative of prevailing situations rather as full or unequivocal. The information is based on inferences drawn at the time of visit and is not derived from wide-ranging investigations. In this regard it is appropriate to emphasise again that the main objective of the common land survey is a Phase 1 mapping of commons. Table 6 records the numbers of commons where a range of different uses and activities were observed. Certain of these relate to the exercise of rights of common, other are of a more general nature and relate to the broader management of the commons concerned. The major form of management, in terms of the area concerned, is grazing through the exercising of pasture rights on the county's upland commons. By far the most significant livestock are sheep, this reflecting the pattern of grazing rights on the commons of the South Pennine moorlands. Cattle were also observed to some extent, mainly grazing peripheral parts of the open moorland.

Observed grazing intensities are shown in Table 7. These unenclosed moorland commons have a long history of a sustained high grazing pressure and this has had a marked effect on the vegetation composition. For example, much of the grassland is dominated by unpalatable species such as *Nardus stricta* and *Juncus squarrosus*. In addition, high levels of grazing by sheep are considered to have contributed to some extent to the degradation of the South Pennine Blanket mires, especially when combined with the effects of burning. Other factors influencing the likely effects of sheep grazing on the moorland vegetation include the location of supplementary feeding points (localised trampling and eutrophication), the amount of shepherding (or

indeed, lack of it these days), the time of year that stock are present on the common (now often all year). For example, ericoid species such as *Calluna vulgaris* are more susceptible to the effects of grazing by sheep during the winter months, when there is little other palatable vegetation available.

Burning was not a major observed management activity on the county's commons. It occurs occasionally for example to improve the spring growth and palatability of grasses such as *Molinia caerulea*, or as an accidental event.

On the county's Lowland commons, the major form of management in terms of frequency is the mowing of various amenity grassland commons (coupled with the planting of ornamental trees in such situations). In the majority of instances, burning appears to have been more by accident rather than as part of deliberate management.

Table 6  
Use and Management of Commons

Use and Management Activity*	No. of Commons	CL Numbers
Grazing :		
Sheep	11	162, 163, 166, 168, 171, 173, 310, 494, 614, 674, 675
Cattle	4	163, 247, 494, 536
Horses	1	168
Rabbits	2	171, 614
Mowing (amenity)	9	3, 6, 102, 128, 129, 185, 188, 246, 301
Burning	5	1, 3, 49, 162, 171
Tree planting	7	3, 6, 68, 102, 128, 188, 262
Footpath repair/erosion control	3	494, 674, 675
Allotment gardening	1	6
Open-cast mining/Landfill	1	68

\* *As noted at time of survey*

Table 7

Grazing intensity*	No. of Commons	CL Numbers
Heavy	5	166, 247, 248, 614, 675
Moderate-heavy	4	163, 168, 173, 536
Moderate	2	310, 494
Light	1	262
Variable	3	162, 171, 674
Not grazed	13	1, 3, 6, 49, 68, 102, 128, 129, 185, 188, 246, 262, 301

\* As noted at time of survey

Given that site visits were mainly concerned with Phase 1 mapping or the checking of habitat information derived from other sources, recommendations concerning management are inevitably cursory in nature. However, a number of suggestions concerning particular commons are detailed within the site record cards (Appendix 3). Table 8 summarises the range of issues that are highlighted.

Table 8

Management Activity	No. of Commons	CL Numbers
Scrub clearance	3	1, 3, 68
Remove refuse from pond	1	3
Thin planted woodland	1	68
Control illegal tipping	7	3, 68, 162, 163, 168, 171, 494

### **Encroachments**

During the site visits, a number of features were noted which potentially could have an adverse effect upon both the continued existence and also the nature conservation value of commons. These are termed encroachments and are summarised in Table 9. Most of the encroachments are relatively limited in extent, although piecemeal erosion of common land can lead to serious losses. However, CL 68, is being extensively affected by landfill operations. Note that the 1965 Commons Registration

Act stipulates that permanent fencing on common land is only allowed by permission from the Secretary of State for the Environment (it has been beyond the project brief to investigate whether or not this is the case).

Table 9

Type of Enroachment	No. of Commons	CL Numbers
Dumping	7	3, 68, 162, 163, 168, 171, 494
Landfill operations/open-cast mining	1	68
Internal fencing	3	6, 168, 171
Spreading manure etc.	1	171
Motorcycling on common	2	162, 171
Car parking/lay-bys	2	674, 675
Bus turning circle	1	163
Wooden sheds etc.	1	163
M62 Motorway	1	675
Transmitter mast/fenced enclosure	1	675

Dumping is a feature in particular of the more peripheral parts of some of the upland commons and commonly includes general rubbish and rubble, in addition to abandoned and/or burnt-out cars. Motorcycling may cause significant localised erosion.

## 7. Commons and Protected Areas

A significant proportion of the common land within the county lies within formally designated protected areas. Table 9 records the number and area of common land lying within such designations, both national and local.

Table 9 : Protected Areas and Common Land

Protected Areas*	No. of Commons	Area (ha) Within Designation	% surveyed Common Land
SSSI	5	1,574.7	48.5
Proposed SPA	4	1,556.8	47.9
Second Tier (SBI)	1	46.6	1.4

\* *Particular commons may be associated with more than one designation.*



A significant proportion of the upland commons to the north-east of the county lie within the boundary of the South Pennine Moors Site of Special Scientific Interest (SSSI). This site is also a proposed Special Protection Area (pSPA) to be designated under the EC Birds Directive.

In addition, the entire area of CL 1, Highfield Moss (i.e. 17.91 ha) is scheduled as SSSI.

A portion of CL 674 has "Second Tier" status, being designated as a "Site of Biological Importance" in Greater Manchester.

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## Appendix 1

### Greater Manchester : List of Registered Commons

Key								
1	CL Number							
2	Commons Surveyed							
3	Name/Location of Common							
4	Register Area (hectares)							
5	Calculated Area (hectares)							
6	Easting							
7	Northing							
8	OS Map 100 Sq Km							
9	OS Map 10 Sq Km							
1	2	3	4	5	6	7	8	9
1	*	Highfield Moss	17.91	17.91	361300	395600	109	SJ69
2		Moonstone Edge Common	1.16	0	389100	416000	109	SD81
3	*	Edge Green Common	5.83	5.83	359600	399000	108	SJ59
6	*	Poors Land Allotments	2.27	2.27	370800	392900	109	SJ79
40		Parsonage Green	0.3	0	399300	395100	109	SJ99
49	*	Ashton Heath	71.22	7.06	358400	398700	108	SJ59
50		Whitledge Green	0.74	0	357200	400300	108	SD50
68	*	Amberswood Common	33.67	33.67	360400	404800	109	SD60
77		Godley Hill	0.41	0	396700	394900	109	SJ99
102	*	Amberswood Common	13.76	13.76	360600	405000	109	SD60
105		Matley Lane/Harrop Edge Lane junction	0.39	0	398300	396600	109	SJ99
128	*	Aspull Moor	8.19	12.26	361500	408000	109	SD60
129	*	Pennington Green Common	1.1	1.1	362000	406600	109	SD60
132		Shakerley Common	7.27	0	369400	402300	109	SD60
133		Withington Common	0.65	0	370500	400800	109	SD70
157		Common Nook, Amberswood Common	0.17	0	360300	404800	109	SD60
171	*	Helpet Edge and Crompton Moor	77.21	77.22	396000	411000	109	SD91
185	*	Roe Green	1.4	2.74	375000	401700	109	SD70
186		Beesley Green	2.55	0	374700	401600	109	SD70
188	*	Aspull Common	1.79	1.79	364200	398500	109	SJ69
198		Land at Buckstones Road	0.09	0	395100	409700	109	SD90
246	*	Mosley Common	5.4	5.4	372000	401400	109	SD70
247	*	Lately Common	4.35	4.35	366900	398100	109	SJ69
248	*	Low Common	1.52	1.52	367000	398600	109	SJ69
260		Withington Common	0.36	0	370500	400800	109	SD70
262	*	Land in Crompton Urban District	6.97	5.84	395000	409600	109	SD90
297		Thorp Green	1.26	0	391100	408100	109	SD90
301	*	Part of Aspull Common	1.28	1.28	361200	407600	109	SD60
591		Land at Denshaw	0.07	0	397700	410500	109	SD91
593		Rough Hey Denshaw	0.48	0	397700	411400	109	SD91
614	*	Billy Ground	21.92	21.92	402000	408600	110	SE00

## APPENDIX 2

### GREATER MANCHESTER

#### LIST OF SPECIES MENTIONED IN REPORT AND SITE DESCRIPTIONS

Vascular Plants, Ferns, Horsetails, Bryophytes, Lichens etc.

Note : The occurrence of a species in this list does not necessarily indicate the existence of a confirmed biological record). Nomenclature for higher plants follows that of Stace, C.A. 1991. Priority Species of the UK Biodiversity Action Plan (UK Biodiversity Group, 1998) are given in **bold type**.

<i>Acer campestre</i>	field maple
<i>A. pseudoplatanus</i>	sycamore
<i>Achillea millefolium</i>	yarrow
<i>A. ptarmica</i>	sneezewort
<i>Agrostis canina</i>	velvet bent
<i>A. capillaris</i>	common bent
<i>A. stolonifera</i>	creeping bent
<i>Alisma plantago-aquatica</i>	water plantain
<i>Alnus glutinosa</i>	alder
<i>A. incana</i>	grey alder
<i>Alopecurus pratensis</i>	meadow foxtail
<i>Angelica sylvestris</i>	angelica
<i>Anthoxanthum odoratum</i>	sweet vernal grass
<i>Anthriscus sylvestris</i>	cow parsley
<i>Arrhenatherum elatius</i>	false oat grass
<i>Artemisia vulgaris</i>	mugwort
<i>Aster novi-belgii</i>	confused michaelmas daisy
<i>Athyrium filix-femina</i>	lady fern
<i>Betula pendula</i>	silver birch
<i>B. pubescens</i>	downy birch
<i>Brachythecium rivulare</i>	a moss
<i>Bromus hordeaceus</i>	soft brome
<i>Callitriche</i> sp.	a water starwort
<i>Calluna vulgaris</i>	heather/ling
<i>Cardamine pratensis</i>	lady's smock/cuckoo flower
<i>C. flexuosa</i>	wavy bittercress
<i>Carex curta</i>	white sedge
<i>C. demissa</i>	see <i>C. viridula</i> subsp. <i>oedocarpa</i>
<i>C. echinata</i>	star sedge
<i>C. hirta</i>	hairy sedge
<i>C. nigra</i>	common sedge
<i>C. otrubae</i>	false fox sedge
<i>C. ovalis</i>	oval sedge
<i>C. panicea</i>	carnation sedge
<i>C. rostrata</i>	bottle sedge
<i>C. viridula</i> subsp. <i>oedocarpa</i>	yellow-sedge
<i>Centaurea nigra</i>	black knapweed
<i>Cerastium fontanum</i> subsp. <i>holosteoides</i>	common mouse-ear
<i>C. holosteoides</i>	see <i>C. fontanum</i>

<i>Chamerion angustifolium</i>	rose-bay willow-herb
<i>Cirsium arvense</i>	creeping thistle
<i>C. palustre</i>	marsh thistle
<i>Conopodium majus</i>	pignut
<i>Cornus sanguinea</i>	dogwood
<i>Crataegus monogyna</i>	hawthorn
<i>Cynosurus cristatus</i>	crested dog's tail
<i>Cytisus scoparius</i>	broom
<i>Dactylis glomerata</i>	cocksfoot
<i>Dactylorhiza fuchsii</i>	common spotted orchid
<i>D. fuchsii x praetermissa</i>	a marsh orchid
<i>D. praetermissa</i>	southern marsh orchid
<i>Deschampsia cespitosa</i>	tufted hair grass
<i>D. flexuosa</i>	wavy hair grass
<i>Dicranella palustris</i>	a moss
<i>Digitalis purpurea</i>	foxglove
<i>Dryopteris carthusiana</i>	narrow buckler fern
<i>D. dilatata</i>	broad buckler fern
<i>Eleocharis palustris</i>	common spike rush
<i>Elymus repens</i>	see <i>Elytrigia repens</i> subsp. <i>repens</i>
<i>Elytrigia repens</i> subsp. <i>repens</i>	common couch
<i>Empetrum nigrum</i>	crowberry
<i>Epilobium hirsutum</i>	great willow herb
<i>E. palustre</i>	marsh willowherb
<i>Equisetum arvense</i>	field horsetail
<i>E. fluviatile</i>	water horsetail
<i>Erica tetralix</i>	cross-leaved heath
<i>Eriophorum angustifolium</i>	common cotton grass
<i>E. vaginatum</i>	hare's tail cotton grass
<i>Fagus sylvatica</i>	beech
<i>Fallopia japonica</i>	Japanese knotweed
<i>Festuca ovina</i>	sheep's fescue
<i>F. rubra</i>	red fescue
<i>Filipendula ulmaria</i>	meadowsweet
<i>Fraxinus excelsior</i>	ash
<i>Galium aparine</i>	cleavers
<i>G. palustre</i>	marsh bedstraw
<i>G. saxatile</i>	heath bedstraw
<i>Genista anglica</i>	petty whin
<i>Gentiana pneumonanthe</i>	marsh gentian
<i>Glyceria fluitans</i>	floating sweet grass
<i>Gnaphalium uliginosum</i>	marsh cudweed
<i>Hedera helix</i>	ivy
<i>Heracleum sphondylium</i>	hogweed
<i>Holcus lanatus</i>	Yorkshire fog
<i>H. mollis</i>	creeping soft grass
<i>Hyacinthoides non-scripta</i>	bluebell
<i>Hydrocotyle vulgaris</i>	marsh pennywort
<i>Hypochaeris radicata</i>	common cat's ear
<i>Impatiens glandulifera</i>	Indian balsam
<i>Iris pseudacorus</i>	yellow flag
<i>Iris</i> sp. (cultivated)	an iris
<i>Juncus articulatus</i>	jointed rush
<i>J. bufonius</i>	toad rush
<i>J. bulbosus</i>	bulbous rush

<i>J. conglomeratus</i>	compact rush
<i>J. effusus</i>	soft rush
<i>J. inflexus</i>	hard rush
<i>J. squarrosus</i>	heath rush
<i>Larix</i> sp.	larch
<i>Lathyrus pratensis</i>	meadow vetchling
<i>Leucanthemum vulgare</i>	ox-eye daisy
<i>Lolium perenne</i>	perennial rye grass
<i>Lophocolea bidentata</i>	a liverwort
<i>Lotus corniculatus</i>	bird's foot trefoil
<i>L. pedunculatus</i>	greater bird's foot trefoil
<i>L. uliginosus</i>	see <i>L. pedunculatus</i>
<i>Lychnis flos-cuculi</i>	ragged robin
<i>Lysimachia punctata</i>	dotted loosestrife
<i>Malus</i> sp.	an apple
<i>Medicago lupulina</i>	black medick
<i>Mentha aquatica</i>	water mint
<i>Menyanthes trifoliata</i>	bogbean
<i>Molinia caerulea</i>	purple moor grass
<i>Myosotis scorpioides</i>	water forget-me-not
<i>Myriophyllum</i> sp.	water milfoil
<i>Nardus stricta</i>	mat grass
<i>Narthecium ossifragum</i>	bog asphodel
<i>Odontites verna</i>	see <i>O. vernus</i>
<i>Odontites vernus</i>	red bartsia
<i>Pedicularis sylvatica</i>	wood lousewort
<i>Persicaria amphibia</i>	amphibious bistort
<i>P. bistorta</i>	common bistort
<i>Phalaris arundinacea</i>	reed canary grass
<i>Philonotis fontana</i>	a moss
<i>Phragmites australis</i>	common reed
<i>Picea</i> sp.	spruce
<i>Pinus</i> sp.	pine
<i>Plantago lanceolata</i>	ribwort plantain
<i>P. major</i>	great plantain
<i>Poa</i> sp.	meadow grass
<i>Polygonum amphibium</i>	see <i>Persicaria amphibia</i>
<i>P. bistorta</i>	see <i>Persicaria bistorta</i>
<i>Polytrichum commune</i>	a moss
<i>Populus alba</i>	white poplar
<i>P. tremula</i>	aspen
<i>Potamogeton natans</i>	broad-leaved pondweed
<i>P. polygonifolius</i>	bog pondweed
<i>Potentilla anserina</i>	silverweed
<i>P. erecta</i>	tormentil
<i>P. palustris</i>	marsh cinquefoil
<i>P. reptans</i>	creeping cinquefoil
<i>Prunella vulgaris</i>	self heal
<i>Prunus spinosa</i>	blackthorn
<i>Pteridium aquilinum</i>	bracken
<i>Pulicaria dysenterica</i>	fleabane
<i>Quercus robur</i>	pedunculate oak
<i>Q. cerris</i>	turkey oak
<i>Ranunculus acris</i>	meadow buttercup
<i>R. flammula</i>	lesser spearwort



<i>R. omiophyllus</i>	water crowfoot
<i>R. repens</i>	creeping buttercup
<i>R. sceleratus</i>	celery-leaved buttercup
<i>Reynoutria japonica</i>	see <i>Fallopia japonica</i>
<i>Rhododendron ponticum</i>	rhododendron
<i>Robinia</i> sp.	a false acacia
<i>Rosa</i> sp.	rose
<i>Rubus fruticosus</i> agg.	bramble
<i>Rumex acetosa</i>	sorrel
<i>R. acetosella</i>	sheep's sorrel
<i>R. crispus</i>	curled dock
<i>R. obtusifolius</i>	broad-leaved dock
<i>Salix capraea</i>	sallow
<i>S. cinerea</i>	grey willow
<i>S. fragilis</i>	crack willow
<i>Salix</i> spp.	sallows
<i>S. viminalis</i>	osier
<i>Sambucus nigra</i>	elder
<i>Scutellaria galericulata</i>	skullcap
<i>Senecio vulgaris</i>	groundsel
<i>Silene alba</i>	white campion
<i>S. vulgaris</i>	bladder campion
<i>Solanum dulcamara</i>	bittersweet
<i>Sorbus aria</i>	whitebeam
<i>S. aucuparia</i>	rowan
<i>Sparganium erectum</i>	branched bur reed
<i>Sphagnum cuspidatum</i>	a bogmoss
<i>S. fimbriatum</i>	a bogmoss
<i>S. palustre</i>	a bogmoss
<i>S. papillosum</i>	a bogmoss
<i>S. recurvum</i>	a bogmoss
<i>S. squarrosum</i>	a bogmoss
<i>Stachys palustris</i>	marsh woundwort
<i>Stellaria alsine</i>	bog stitchwort
<i>S. media</i>	chickweed
<i>Symphytum officinale</i>	comfrey
<i>S. x uplandicum</i>	Russian comfrey
<i>Taraxacum officinale</i> agg.	dandelion
<i>Trichophorum cespitosum</i>	deer-grass
<i>Tilia x europaea</i>	common lime
<i>Tragopon pratensis</i>	goat's beard
<i>Trifolium dubium</i>	lesser trefoil
<i>T. pratense</i>	red clover
<i>T. repens</i>	white clover
<i>Tussilago farfara</i>	coltsfoot
<i>Typha latifolia</i>	bulrush/cat's-tail
<i>Ulex gallii</i>	western gorse
<i>U. europaeus</i>	gorse
<i>Urtica dioica</i>	stinging nettle
<i>Vaccinium myrtillus</i>	bilberry
<i>V. oxycoccos</i>	cranberry
<i>Vicia cracca</i>	tufted vetch
<i>Viola palustris</i>	marsh viloet

## Birds

<i>Actitis hypoleucos</i>	common sandpiper
<b><i>Alauda arvensis</i></b>	<b>skylark</b>
<i>Ardea cinerea</i>	grey heron
<i>Anas platyrhynchos</i>	mallard
<i>Anthus pratensis</i>	meadow pipit
<i>Apus apus</i>	swift
<i>Asio flammeus</i>	short-eared owl
<i>Calidris alpina</i>	dunlin
<i>Carduelis flavirostris</i>	twite
<i>Charadrius dubius</i>	little ringed plover
<i>Cinclus cinclus</i>	dipper
<i>Columba livia</i>	feral pigeon
<i>Corvus monedula</i>	jackdaw
<i>Delichon urbica</i>	housemartin
<i>Erithacus rubecula</i>	robin
<i>Falco columbarius</i>	merlin
<i>Falco peregrinus</i>	peregrine
<i>Falco tinnunculus</i>	kestrel
<i>Fringilla coelebs</i>	chaffinch
<i>Gallinago gallinago</i>	snipe
<i>Gallinula chloropus</i>	moorhen
<i>Hirundo rustica</i>	swallow
<i>Lagopus scoticus</i>	red grouse
<i>Larus canus</i>	common gull
<i>Motacilla cinerea</i>	grey wagtail
<i>Numenius arquata</i>	curlew
<i>Oenanthe oenanthe</i>	wheatear
<i>Parus caerulea</i>	blue tit
<i>Passer domesticus</i>	house sparrow
<i>Phylloscopus collybita</i>	chiffchaff
<i>Pica pica</i>	magpie
<i>Pluvialis apricaria</i>	golden plover
<i>Saxicola torquata</i>	stonechat
<i>Sturnus vulgaris</i>	starling
<i>Tadorna tadorna</i>	shelduck
<i>Tringa totanus</i>	redshank
<i>Troglodytes troglodytes</i>	wren
<i>Turdus merula</i>	blackbird
<b><i>Turdus philomelus</i></b>	<b>song thrush</b>
<i>Vanellus vanellus</i>	lapwing

## Other vertebrates

<i>Oryctolagus cuniculus</i>	rabbit
<i>Rana temporaria</i>	common frog

## Invertebrates: Insects

### Odonata (dragonflies and damselflies)

<i>Coenagrion puella</i>	common azure damselfly
<i>Enallagma cyathigerum</i>	common blue damselfly

*Ischnura elegans*  
*Sympetrum danae (scoticum)*

common blue-tailed damselfly  
black darter

**Lepidoptera (butterflies and moths)**

*Aglais urticae*  
*Coenonympha pamphilus*  
*Cynthia cardui*  
*Inachis io*  
*Lycaena phlaeas*  
*Maniola jurtina*  
*Pararge aegeria*  
*Pieris brassicae*  
*Thymelicus sylvestris*  
*Vanessa atalanta*

small tortoiseshell  
small heath  
painted lady  
peacock  
small copper  
meadow brown  
speckled wood  
large white  
small skipper  
red admiral

## APPENDIX 3

### SITE REPORTS FOR SURVEYED COMMONS NOTES

#### 1. Site Cards : Habitat areas

The layout of the site cards from the survey is largely self-explanatory. However, a note concerning the quoted area for individual sites is needed. The areas of habitats within commons were determined using various methods - Calcomp digitizer, Reiss Polarplanimeter or manual counting of lmm graph paper overlays. It must be emphasised that these area estimates do not in all cases summate to the total area of common land as recorded in the registers. Apart from the errors that inevitably occur in deriving such measurements, it should not be assumed that the area as recorded in the registers is a definitive measurement. The survey has drawn attention to numerous, and sometimes gross, inaccuracies. For the surveyed commons, both the registered areas and the measured habitat areas are included on the site cards and in the list of commons - Appendix 1.

#### 2. Survey maps

The Phase 1 vegetation maps are presented mainly at a scale of either 1:10.000, or for larger sites. 1:25.000. In certain cases it has been necessary o slightly reduce the size of the final copy to fit in the report. For some maps the earlier scale of 1:10.560 applies. The boundaries of the survey sites have been checked against the originals held by the registration authority. They are delineated by a bold line. The actual site boundary follows the inside edge of the line, to avoid obscuring habitat information.

The habitats present are indicated using the appropriate Phase 1 alphanumeric. In addition, the vegetation maps have also been annotated with dominant species codes for ericaceous species. These facilitate the easy identification of areas of dwarf shrub vegetation and its composition. The codes are as follows:

Cv	Calluna vulgaris
Vm	Vaccinium myrtillus
Et	Erica tetralix
En	Empetrum ingrum

The survey maps are not otherwise annotated with dominant species codes. The extra detail would make the maps too complex and difficult to interpret. Instead, the dominant species codes are referenced within the vegetation description.

#### 3. Botanical nomenclature

The nomenclature for higher plants used in the vegetation descriptions follows that of: Stace, C.A. **New Flora of the British Isles**, Cambridge University Press, 1991.

The English names for plants are not included in the site reports themselves. However, a full list of species noted during the survey is provided in Appendix 2.

## APPENDIX 4

### CORRESPONDENCE BETWEEN THE UK BIODIVERSITY ACTION PLAN BROAD HABITAT CLASSIFICATION AND THE PHASE 1 HABITAT CLASSIFICATION

Phase 1 Habitats	Broad Habitat Types
A111 Broad-leaved Semi-natural Woodland	1. Broadleaved, mixed and yew woodland
A112 Broad-leaved Plantation	1. Broadleaved, mixed and yew woodland
A121 Coniferous Semi-natural	2. Coniferous woodland
A122 Coniferous Plantation	2. Coniferous woodland
A131 Mixed Semi-natural	1. Broadleaved, mixed and yew woodland
A132 Mixed Plantation	1. Broadleaved, mixed and yew woodland
A21 Dense Scrub	1. Broadleaved, mixed and yew woodland
A22 Scattered Scrub	Unclassified (subject to context)
A3 Parkland scattered trees	Unclassified (subject to context)
A4 Recently-felled	1. Broadleaved, mixed and yew woodland
B11 Acidic Grassland : Unimproved	8. Acid grassland
B12 Acidic Grassland : Semi-improved	8. Acid grassland
B21 Neutral Grassland : Unimproved	6. Neutral grassland
B22 Neutral Grassland : Semi-Improved	6. Neutral grassland
B31 Calcareous Grassland Unimproved	7. Calcareous grassland
B32 Calcareous Grassland Semi-improved	7. Calcareous grassland
B4 Improved Grassland	5. Improved grassland
B5 Marsh/Marshy Grassland	11. Fen, marsh and swamp
B6 Poor Semi-Improved Grassland	5. Improved grassland
C11 Bracken : Continuous	9. Bracken
C12 Bracken : Scattered	Unclassified (subject to context)
C22 Upland Species-rich ledges	16. Inland rock
C31 Other : Tall Ruderal	Unclassified (subject to context)
C32 Other : Non-ruderal	Unclassified (subject to context)
D11 Dry Dwarf Shrub Heath : Acidic	10. Dwarf shrub heath
D12 Dry Dwarf Shrub Heath : Basic	10. Dwarf shrub heath
D2 Wet Dwarf Shrub Heath	10. Dwarf shrub heath
D3 Lichen/Bryophyte Heath	15. Montane habitats
D5 Dry Heath Acidic Mosaic	8. Acid grassland (part)/10 Dwarf Shrub Heath (part)
D6 Wet heath/acidic grassland mosaic	8. Acid grassland(part)/10 Dwarf Shrub Heath (part)
E161 Blanket Bog	12. Bog
E162 Raised Bog	12. Bog
E17 Bog : Wet Modified	12. Bog
E18 Bog : Dry Modified	12. Bog
E21 Flush/Spring : Acid/Neutral	11. Fen, marsh and swamp
E22 Flush/Spring : Basic	11. Fen, marsh and swamp
E23 Flush/Spring Bryophyte Dominant	11. Fen, marsh and swamp
E31 Fen : Valley Mire	11. Fen, marsh and swamp
E32 Fen : Basin Mire	11. Fen, marsh and swamp
E33 Fen-flood plain	11. Fen, marsh and swamp
E4 Bare Peat	Unclassified (subject to context)
F1 Swamp	11. Fen, marsh and swamp
F21 Marginal	13. Standing water and canals (part)/14 Rivers and streams

F22 Inundation	(part) 13. Standing water and canals (part)/14 Rivers and streams
G1 Standing Water	(part) 13. Standing water and canals
G2 Running Water	14. Rivers and streams
H11 Intertidal Mud/Sand	21. Littoral sediment
H12 Intertidal Shingle	21. Littoral sediment
H13 Intertidal Rocks	20. Littoral rock
H23 Saltmarsh /Dunes	21. Littoral sediment
H24 Saltmarsh/Plants	21. Littoral sediment
H26 Saltmarsh/Continuous	21. Littoral sediment
H3 Shingle	19. Supralittoral sediment
H4 Rock/Boulders	18. Supralittoral rock
H5 Strandline Vegetation	19. Supralittoral sediment
H64 Sand Dune/Slack	19. Supralittoral sediment
H65 Sand Dune/grassland	19. Supralittoral sediment
H66 Dune Heath	19. Supralittoral sediment
H67 Dune Scrub	19. Supralittoral sediment
H68 Dune Open	19. Supralittoral sediment
H81 Maritime Cliff Hard	18. Supralittoral rock
H82 Maritime Cliff Soft	18. Supralittoral rock
H83 Crevice/ledge vegetation	18. Supralittoral rock
H84 Coastal/maritime grassland	18. Supralittoral rock
H85 Coastal heathland	10. Dwarf shrub heath
I111 Inland Cliff - Acid/Neutral	16. Inland rock
I112 Inland Cliff - Basic	16. Inland rock
I121 Scree – Acid/Neutral	16. Inland rock
I122 Scree – Basic	16. Inland rock
I13 Limestone pavement	16. Inland rock
I141 Other Exposure - Acidic/Neutral	16. Inland rock
I142 Other Exposure - Basic	16. Inland rock
I21 Artificial - Quarry	16. Inland rock
I22 Artificial - Spoil	16. Inland rock
I23 Artificial - Mine	16. Inland rock
I24 Artificial – refuse tip	17. Built up areas and gardens
J11 Arable	4. Arable and horticultural
J12 Amenity grassland	5. Improved grassland
J13 Cultivated - ephemeral	17. Built up areas and gardens
J14 Introduced Shrub	1. Broadleaved, mixed and yew woodland
J21 Hedges - Intact	3. Boundary and linear features
J22 Hedges - Defunct	3. Boundary and linear features
J23 Hedges – With trees	3. Boundary and linear features
J26 Dry Ditch	3. Boundary and linear features
J31 Industrial estate	17. Built up areas and gardens
J32 Military building	17. Built up areas and gardens
J33 Domestic building	17. Built up areas and gardens
J34 Caravan Site	17. Built up areas and gardens
J35 Seawall	17. Built up areas and gardens
J36 Buildings	17. Built up areas and gardens
J4 Bare Ground	Unclassified (subject to context)
J5 Other Habitats	Unclassified (subject to context)

Source : JNCC

