# THE COMMON LANDS OF ENGLAND

# A BIOLOGICAL SURVEY

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**August, 2000**

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**Acknowledgements**

The Rural Surveys Research Unit is grateful to the many organisations and individuals – too numerous to mention – who have contributed to the survey of the common lands of England. The support of the various agencies that commissioned the work – Department of the Environment, Transport and the Regions, English Nature and the Countryside Commission (as it then was) - is particularly appreciated.

The director of the survey (Professor John Aitchison) wishes to acknowledge the collective endeavour of the botanical surveyors who have been involved in the research over a number of years – Ian Francis, Nicola Penford, Marion Lee, Karen Heppingstall, Stuart Hedley, Jonathan Cox, Karl Crowther, Ed Rowe, Katie Medcalf, Denise Nicholls, Peter Dullaghan, Imogen Pearce, Wendy Cox, Louise Redgrave, Martin Ashby, and Fiona Lickorish - and the efforts of Paula Lloyd-Jones and Jan Davies (and numerous supporting staff) in creating and editing the main databases. The maps of commons for the counties of England were prepared by Ian Gulley.

## 1. Introduction

This report presents the results of a biological survey of the registered common lands of England. It is based on information gathered over a twelve-year period by the Rural Surveys Research Unit (University of Wales, Aberystwyth).

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 conservation of biodiversity, but also to those with a broader interest in the use and effective management of commons - policy makers, stakeholders and numerous other parties, both public and private. While the databases produced as a result of the survey focus on biological attributes (flora, fauna and habitats), in addition they include reference to the location and extent of commons, the nature of rights of common (if any) and details of 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 scope, 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 results of the survey, 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” (HMSO,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 1978 an inter-departmental working party (*Common Land : Preparations for Comprehensive Legislation*, DOE, 1978) 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 recent 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).

Over the years the Rural Surveys Research Unit has produced a series of county reports relating to common lands. 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 latter commission has also enabled the integration of the various databases prepared for the county summaries, and the preparation of this report for the whole of England.

## 3. The Database of Registered Commons

The data on which this national survey is based 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 – see below). These sheets constitute a hard copy record and, in addition to the types of data described above, they include maps of Phase 1 habitat types (Nature Conservancy Council, 1990) for individual commons.

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 (Birks and Ratcliffe, 1980). 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 (as identified in the field or through reference to other surveys) 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 aligning them with 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 habitat 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 to generate estimates of the habitat types and areas concerned.

Although the biological survey of commons in England has examined all commons over 1 hectare in size, it is to be appreciated that this threshold is somewhat arbitrary in nature and was selected as an initial filter simply 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. In addition to facilitating the production of the Phase 1 and broad habitat maps presented in this report, these co-ordinates have 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 Microsoft Access database, and allows sophisticated spatial searches, queries and mapping to be undertaken.

Having summarised the aims and objectives of the biological survey of common land and described aspects of the research design, it is appropriate before presenting the main findings to emphasise that the intention here is to provide an overview of broad patterns and associations. For more detailed insights into individual commons reference needs to be made to the series of county monographs that have been produced over the years. Finally, it should be noted that the data on which this study is based have been collated at different times and furthermore are subject to change. Thus, the information recorded in the commons registers can change, as indeed can conditions on the ground. Commons can lose their status (e.g. be de-registered), the boundaries of areas can be modified, ownership can change, management practices can vary, as can the use of rights etc. These caveats are important and serve to underline the point that the findings presented here should be regarded as best estimates of the current **aggregate** situation.

## 4. The Common Land System

(i) Registered Commons

Reporting in 1958, the Royal Commission on Common Land (RCCL) noted that prior to its deliberations no one knew “for certain” exactly how much common land there was in England. According to the Ministry of Agriculture, Fisheries and Food it was thought to be approximately 1.67 million acres (677000 hectares). However, this figure, which excludes common fields, was based not on a controlled survey but on data acquired by the Copyhold, Inclosure and Tithe Commission in 1873. The same source disaggregated these statistics and suggested that, of the total area of common land in England, some 43% was cultivable (mainly lowland commons); the rest being classed as "mountain or otherwise unsuitable for cultivation" (mainly upland commons).

Recognising the need to generate a more up-to-date estimate of the area of common land, the RCCL undertook to collate information from a variety of sources, including large users and owners of common land, together with data obtained by the County Agricultural Executive Committees during the war-time period. These data were subsequently forwarded to local authorities (county and county borough councils) for checking, to the extent that this proved possible given the general lack of detailed inventories of commons. Whilst RCCL thought the new data would “prove of lasting interest” (p18), it was aware of its limitations and deemed it to be essentially “descriptive rather than definitive” in nature. The definition of common land adopted in its dealings with the local authorities was :

*'Lands subject to be inclosed under the inclosure Acts, 1845 to 1882; 'non-private' land whose status derives from inclosure acts both public and private; metropolitan commons; and village and town greens'.*

Data obtained through this particular inventory suggested that the area of common land in England was just over 1 million acres (426988 hectares). As such it accounted for some 3.3% of the total land area (as compared with 5.2% in 1873). In presenting the results of its investigations RCCL noted that a comparison of the 1874 and

1956/58 data yielded major inconsistencies. Thus, certain counties recorded increases in acreage (e.g. Durham, Hampshire) while others apparently returned losses that could only be described as “fantastic” (e.g. West Riding).

The distribution of common land at county level for each of these two surveys is shown in Figures 1 and 2. The RCCL inventory confirmed that in terms of areal coverage the majority of common land in England was to be found in the uplands of the North and South-West, with five counties each having over 100000 hectares. Together, the counties of North Riding, West Riding, Westmorland, Cumberland and Devon claimed nearly two-thirds (64%) of all the common land in England.

Although the data were again deemed to be far from robust statistically, it is of interest to note that the RCCL also categorised commons according to the size of individual tracts. Table 1 shows that over half of commons (54%), mainly village greens, were less than 10 acres (4 hectares) in size. At the other extreme, just 221 commons (5% of all commons) accounted for nearly three-quarters of the total area of common land.

Table 1

Commons 1956/58 Categorised by Size*

| Size Categories (Acres) | Number of Commons | Total Area (Acres) |
|---|---|---|
| Under10 | 2442 | 7053 |
| 10-25 | 513 | 8475 |
| 25-50 | 391 | 14351 |
| 50-100 | 314 | 22931 |
| 100-200 | 239 | 35676 |
| 200-500 | 267 | 87797 |
| 500-1000 | 128 | 95261 |
| 1000-5000 | 182 | 399433 |
| Over 5000 | 39 | 383684 |
| Total | 4515 | 1054661 |

* RCCL (1958, p20)

While these data are of historical interest 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 resultant ‘terriers’

now serve as a definitive record. A collation of the basic information contained in the registers of commons and greens in England and Wales was undertaken by the RSRU during the late 1980s and early 90s on behalf of the Countryside Commission. Data were drawn from the land, rights and ownership sections of the registers, and maps were compiled at 1:50,000 scale. Since not all of the entries in the registers at the time they were first consulted were 'final' (e.g. many rights entries were still recorded a 'provisional' and awaited decisions of Commons Commissioners), and since there will subsequently have been changes made to the registers themselves (to say nothing of unrecorded changes on the ground), it is evident that certain of the data presented here are subject to the caveat that they relate to situations prevailing at the time the registers were last consulted. This applies mainly to information concerning numbers of rights and ownership. That said, it should also be noted that records for those commons assessed during the biological survey have been updated, to the extent that this was possible.

The commons database prepared by RSRU currently includes information on 7039 separately registered commons – CL units. 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. However, of necessity, the latter are used in the statistical summary of habitat types that is presented below.

Table 2 lists the number and area of commons for the 46 counties (areas/regions) included in the survey. In very broad terms the tabulation confirms the pattern of distribution identified in the Royal Commission report. It shows that all counties have commons, and that in terms of numbers at least they are quite evenly distributed. The counties with the largest proportions of registered commons are seen to be Cumbria (8.9%), North Yorkshire (7.7%) and Surrey (5.9%). Most counties account for between 1% and 2% of all commons.

Figure 3 shows the distribution of all registered commons, as points marking the centre of each registered unit. It should be noted in this regard that some CL units are fragmented in nature, being composed of two or more parcels of land with each having the same registration number. The degree to which such fragmented commons operate as single functional units is difficult to determine from the registers alone. In such cases the centroid simply marks the centre of gravity of the various parts. It should also be emphasised that many commons are contiguous with other commons, and that the resultant point pattern suggests a degree of fragmentation in the configuration of common land that is less evident on the ground. Thus, a cluster of points may actually constitute a single tract of common land. Commons that are contiguous with others are identified in the commons database, as are the grid references that define the point locations of the commons.

While in terms of numbers of registered units the distribution of commons is fairly even at county level, this does not apply if reference is made to the actual area of common land. Thus, it is evident from Table 2 that just over half of the total registered area of common land (367372 hectares – some 4% of England) is to be found in the counties of Cumbria and North Yorkshire. Only one other county - Devon - accounts for over 10% of the total. The majority of counties are seen to claim less than 1% of the area of common land in England. Needless to say this is in part a reflection of the varying sizes of the counties themselves.

A more detailed depiction of the distribution of the main areas of common land in England is provided in Figure 4. This map shows the location of commons that were digitised as polygons in the GIS of common land prepared by RSRU and the Department of City and Regional Planning at Cardiff University for the Department of the Environment. The distribution confirms the heavy concentration of large tracts of common land in the main upland regions of the north of England and in the Dartmoor and Bodmin regions of Devon and Cornwall. Also notable are the numerous fragments of common land in Surrey.

Table 2

Registered Commons

| County | Number of Commons | % Commons | Area (Hectares) | % Area | Mean Area (Hectares) |
|---|---|---|---|---|---|
| Avon | 124 | 1.8 | 1140.5 | 0.3 | 9.2 |
| Bedfordshire | 51 | 0.7 | 402.4 | 0.1 | 7.9 |
| Berkshire | 91 | 1.3 | 1771.0 | 0.5 | 19.5 |
| Buckinghamshire | 253 | 3.6 | 1174.0 | 0.3 | 4.6 |
| Cambridgeshire | 135 | 1.9 | 797.1 | 0.2 | 5.9 |
| Cheshire | 77 | 1.1 | 430.3 | 0.1 | 5.6 |
| Cleveland | 11 | 0.2 | 283.2 | 0.1 | 25.7 |
| Cornwall | 290 | 4.1 | 9660.7 | 2.6 | 33.3 |
| Cumbria | 630 | 9.0 | 112786.4 | 30.7 | 179 |
| Derbyshire | 86 | 1.2 | 280.9 | 0.1 | 3.3 |
| Devon | 208 | 3.0 | 44193.4 | 12.0 | 212.5 |
| Dorset | 130 | 1.9 | 2051.9 | 0.6 | 15.8 |
| Durham | 92 | 1.3 | 28800.8 | 7.8 | 313.1 |
| East Sussex | 90 | 1.3 | 3344.0 | 0.9 | 37.2 |
| Essex | 289 | 4.1 | 991.6 | 0.3 | 3.4 |
| Gloucestershire | 251 | 3.6 | 2055.8 | 0.6 | 8.2 |
| Greater London | 122 | 1.7 | 1573.9 | 0.4 | 12.9 |
| Greater Manchester | 41 | 0.6 | 3136.5 | 0.9 | 76.5 |
| Hampshire | 205 | 2.9 | 3867.0 | 1.1 | 18.9 |
| Hereford/Worcester | 313 | 4.5 | 4203.3 | 1.1 | 13.4 |
| Hertfordshire | 255 | 3.6 | 1934.4 | 0.5 | 7.6 |
| Humberside | 88 | 1.3 | 722.8 | 0.2 | 8.2 |
| Isle of Wight | 14 | 0.2 | 15.2 | 0.0 | 1.1 |
| Kent | 112 | 1.6 | 746.6 | 0.2 | 6.7 |
| Lancashire | 154 | 2.2 | 8354.1 | 2.3 | 54.2 |
| Leicestershire | 71 | 1.0 | 187.1 | 0.1 | 2.6 |
| Lincolnshire | 89 | 1.3 | 300.7 | 0.1 | 3.4 |
| Merseyside | 8 | 0.1 | 77.7 | 0.0 | 9.7 |
| Norfolk | 345 | 4.9 | 4420.4 | 1.2 | 12.8 |
| North Yorkshire | 543 | 7.7 | 77005.2 | 21.0 | 141.8 |
| Northamptonshire | 36 | 0.5 | 33.5 | 0.0 | 0.9 |
| Northumberland | 96 | 1.4 | 9639.0 | 2.6 | 100.4 |
| Nottinghamshire | 79 | 1.1 | 358.4 | 0.1 | 4.5 |
| Oxfordshire | 129 | 1.8 | 880.3 | 0.2 | 6.8 |
| Shropshire | 86 | 1.2 | 4564.9 | 1.2 | 53.1 |
| Somerset | 96 | 1.4 | 3671.6 | 1.0 | 38.2 |
| South Yorkshire | 31 | 0.4 | 1374.6 | 0.4 | 44.3 |
| Staffordshire | 105 | 1.5 | 2157.1 | 0.6 | 20.5 |
| Suffolk | 224 | 3.2 | 1793.0 | 0.5 | 8 |
| Surrey | 416 | 5.9 | 9912.3 | 2.7 | 23.8 |
| Tyne and Wear | 22 | 0.3 | 441.6 | 0.1 | 20.1 |
| Warwickshire | 30 | 0.4 | 103.3 | 0.0 | 3.4 |
| West Midlands | 8 | 0.1 | 108.3 | 0.0 | 13.5 |
| West Sussex. | 263 | 3.7 | 4225.4 | 1.2 | 16.1 |
| West Yorkshire | 177 | 2.5 | 10039.8 | 2.7 | 56.7 |
| Wiltshire | 73 | 1.0 | 1360.6 | 0.4 | 18.6 |
| | | | | | 52.2 |
| **England** | **7039** | | **367372.1** | | |

Taking the 250 metre median contour line as a threshold, it can be noted that nearly 88 % of commons are situated in 'lowland' areas (i.e. with mid elevations of under 250 metres). However, these commons tend to be smaller in extent and account for only 27% of all common land. The 834 'upland' commons have a total area of 267,047 hectares (see below).

Detailed maps showing the location and CL numbers of all commons are included in the summary monographs prepared for each of the 46 counties/regions identified for the purposes of the biological survey. These maps, together with the names, areas and grid co-ordinates of the commons concerned (which are too extensive to include here) will also be accessible through an Internet site that is to be established for the national survey of common land.

(ii) Sizes of Registered Commons

Table 2 shows the mean size of separately registered commons in England to be 52 hectares. Only five counties have mean areas of 100 hectares or more – Durham (313 hectares), Devon (213 hectares), Cumbria (179 hectares), North Yorkshire (142 hectares) and Northumberland (100hectares). While arithmetic means are of interest, it is evident that they need to be treated circumspectly, since they relate to data distributions that are in most cases highly skewed in a positive direction. Thus, at the national level the median size of commons is seen to be a mere 0.95 hectares – 50% of commons are smaller than this, the remainder are larger. The majority of registered commons in England are under 1 hectare in size. The largest of all the CL units has a register area of 11284 hectares (CL164 in Devon – part of the Forest of Dartmoor). Table 3 confirms the skewed nature of the size distribution of commons. It indicates that nearly 90% of commons are under 50 hectares in size. Just over 1% are more than 1000 hectares.

As is to be expected, this profile, which is based on numbers of commons in the various size groups, is reversed when reference is made to the actual area of common land. Thus, as Table 3 shows, the 89 registered commons that are 1000 hectares and more account for 52% of all the common land. Those commons between 500 and

1000 hectares in size claim a further 15% of the area. In summary, some 2.4% of registered CL units comprise more than two-thirds of the total area of common land.

Table 3

| Size Group (Hectares) | Number of Commons | % Commons | Area (Hectares) | % Area |
|---|---|---|---|---|
| Under 1 | 3608 | 51.3 | 1072.7 | 0.3 |
| 1- 4.9 | 1350 | 19.2 | 3182.5 | 0.9 |
| 5.0 - 49.9 | 1324 | 18.8 | 22862.8 | 6.2 |
| 50.0 – 199.9 | 431 | 6.1 | 44045.8 | 12.0 |
| 200.0 – 499.9 | 160 | 2.3 | 49285.8 | 13.4 |
| 500.0 – 999.9 | 77 | 1.1 | 54865.8 | 14.9 |
| Over 999.9 | 89 | 1.3 | 192057.0 | 52.3 |

As has been noted previously, many registered areas of common land are actually contiguous with other commons. An analysis of the 1:50000 maps produced from the registers shows in fact that nearly a quarter of all registered commons (24.7%) are contiguous with at least one other common. This means that on the ground the actual sizes of individual tracts of common land are larger than is depicted in the registers. Although the bounds of individual commons are not displayed in Figure 4, an analysis of the constituent polygons from which this pattern is derived confirms the existence of more extensive and discrete areas of common land in various parts of England. For example, there is an extensive, elongated tract of common land that straddles the boundaries of Cumbria, Durham and North Yorkshire and includes over 150 contiguous commons.

(iii) Rights of Commons

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).

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.

Given this situation it is sufficient here to give a broad indication of the number of rights entries by making reference to the numbers of rights entries that were finalised at the time the registers were consulted. For the reasons cited above, the figures need to be treated as indicative measures rather than as a definitive statement of the current situation. In regard to the numbers of finalised rights entries it can be noted that these totalled 24157. The vast majority of these were associated with large upland commons where common of pasture figured prominently.

The distribution of commons with finalised rights is shown in Figure 5. Strong concentrations of such commons are to be found in central Cumbria, the Pennines, Hereford and Worcester, and the moorlands of Devon and Cornwall. Notable clusters are also to be seen in East Anglia, Surrey and north western parts of West Sussex. Commons without registered rights of common (Figure 6) are located in all parts of the country, but with very large numbers being located in south-eastern regions.

Table 4 shows the distribution of rights entries within five size categories. It indicates that while nearly two-thirds of commons have no right entries, they account for only 7% of the area of common land. At the other extreme are those commons with 20 or more rights entries. They comprise just 5% of commons but claim 51% of the total area.

Table 4

| Rights Entries | Number of Commons | % | Area (Hectares) | % |
|---|---|---|---|---|
| No rights | 4607 | 65.4 | 43591 | 11.9 |
| 1-5 | 1595 | 22.7 | 57707 | 15.7 |
| 6-9 | 262 | 3.7 | 31558 | 8.6 |
| 10-19 | 239 | 3.4 | 45568 | 12.4 |
| 20 and over | 333 | 4.8 | 188897 | 51.4 |

The number and percentage of types of rights recorded for those commons that were included in the biological survey (see below) are detailed in Table 5. Cattle and sheep are seen to figure most prominently, with registrations on 19.9% and 16.2% of all commons, respectively. The distributions of commons with these rights are shown in Figures 7 and 8. Entries for horses and ponies, and for estovers occur on over 10% of commons (Figures 9 and 10). The patterns emerging are very similar in broad form, but with some differences in local detail.

Table 5

| Rights of Common | Number of Commons | % Commons |
|---|---|---|
| Sheep | 1139 | 16.2 |
| Cattle | 1404 | 19.9 |
| Horses/Ponies | 910 | 12.9 |
| Pasture (Unspecified) | 111 | 1.6 |
| Other Livestock | 513 | 7.3 |
| Estovers | 723 | 10.3 |
| Turbary | 570 | 8.1 |
| Common in the Soil | 330 | 4.7 |
| Piscary | 191 | 2.7 |
| Pannage | 142 | 2.0 |
| Other Rights | 856 | 12.2 |

*N.B. Individual commons can have more than one type of right.*

(iv) Ownership

Commons and wastes, like ordinary freehold land, have owners. They do not necessarily form part of the public domain. That said, at the time of registration the ownership sections of the registers for many commons remained empty. This was

either because ownership was not known or simply because the details were not recorded (the 1965 Act did not make this mandatory). When the registers were last consulted over 1800 commons 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. Just over 550 commons had been made subject to Section 9.

A significant number of commons (1740) were wholly under private ownership (other than traditional estates). Many commons also had private owners for parts of the land concerned (679). A significant number of commons were owned by parish and other councils (1230). At the time, nearly 150 commons were in the hands of the National Trust and some 47 commons belonged to traditional estates. A further 431 were owned by a variety of organisations (e.g. charities, trusts, agencies of government). Finally, 318 commons were recorded under the Land registration Acts 1925 and 1936. It is not possible to specify the area of land under different types of ownership since so many commons have multiple owners. In the registers the information on such land holdings is seldom disaggregated or complete.

Given this, it is evident that the statistics presented above 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. 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; increasingly reference is simply made to records held at the Land Registry.

**5. Biological Survey of Commons**

The biological survey of commons was initially commissioned by the Nature Conservancy Council in 1987, largely in response to the report of the Common Land Forum and its various recommendations concerning the future use and management of commons. At the time it was recognised that should a new Commons Act be forthcoming, there would be an urgent need for more information concerning the conservation value of commons. Such information was necessary not

only to inform debate, but also to provide basic data for the formulation of possible management schemes on commons (as envisaged by the Common Land Forum). Only in this way could conservation interests in common land be protected. To collate the necessary information, detailed surveys of commons were required. The approach adopted has been described above.

Table 6 records the number, area and associated proportions of commons and common land that were surveyed at the county level. The data show that a total of 3388 registered commons was subject to evaluation. While this represents only 48% of commons, the areas concerned extend to 365990 hectares and account for 99% of the total common land area (as recorded in the registers). It has previously been noted that many of the areas for commons recorded in the registers are patently inaccurate. This posed problems when seeking to determine the proportion of land associated with particular habitat types. For purposes of the survey, therefore, the areas of commons were measured either graphically or using a digitising tablet. The new calculated areas for commons in each county are detailed in Table 6. It is evident that the differences between the registered areas and the calculated areas vary both in magnitude and direction. The total registered area for the commons included in the survey is seen to be 365990 hectares, while the calculated area is 372151 hectares.

Table 6
Number and Area of Commons Surveyed

| County | Number | % | Registered Area (ha.) | % | Calculated Area |
|---|---|---|---|---|---|
| Avon | 55 | 1.6 | 1121 | 0.3 | 1069 |
| Bedfordshire | 25 | 0.7 | 391 | 0.1 | 404 |
| Berkshire | 51 | 1.5 | 1760 | 0.5 | 1768 |
| Buckinghamshire | 68 | 2.0 | 1133 | 0.3 | 1143 |
| Cambridgeshire | 40 | 1.2 | 704 | 0.2 | 698 |
| Cheshire | 34 | 1.0 | 415 | 0.1 | 388 |
| Cleveland | 5 | 0.2 | 282 | 0.1 | 291 |
| Cornwall | 171 | 5.1 | 9611 | 2.6 | 9257 |
| Cumbria | 326 | 9.6 | 112687 | 30.8 | 115222 |
| Derbyshire | 10 | 0.3 | 255 | 0.1 | 231 |
| Devon | 172 | 5.1 | 44177 | 12.1 | 43537 |
| Dorset | 72 | 2.1 | 2035 | 0.6 | 2121 |
| Durham | 61 | 1.8 | 28788 | 7.9 | 28737 |
| East Sussex | 46 | 1.4 | 3326 | 0.9 | 3320 |
| Essex | 67 | 2.0 | 916 | 0.3 | 920 |
| Gloucestershire | 59 | 1.7 | 2007 | 0.6 | 1958 |
| Greater London | 75 | 2.2 | 1552 | 0.4 | 1562 |
| Greater Manchester | 27 | 0.8 | 3121 | 0.9 | 3250 |
| Hampshire | 118 | 3.5 | 3845 | 1.1 | 3897 |
| Hereford/Worcester | 168 | 5.0 | 4136 | 1.1 | 4746 |
| Hertfordshire | 110 | 3.3 | 1893 | 0.5 | 1894 |
| Humberside | 25 | 0.7 | 705 | 0.2 | 725 |
| Isle of Wight | 4 | 0.1 | 13 | 0.0 | 13 |
| Kent | 52 | 1.5 | 729 | 0.2 | 733 |
| Lancashire | 95 | 2.8 | 8340 | 2.3 | 8339 |
| Leicestershire | 17 | 0.5 | 174 | 0.1 | 170 |
| Lincolnshire | 30 | 0.9 | 279 | 0.1 | 281 |
| Merseyside | 5 | 0.2 | 77 | 0.0 | 79 |
| Norfolk | 170 | 5.0 | 4344 | 1.2 | 4460 |
| North Yorkshire | 286 | 8.4 | 76888 | 21.0 | 78017 |
| Northamptonshire | 3 | 0.1 | 27 | 0.0 | 42 |
| Northumberland | 27 | 0.8 | 9620 | 2.6 | 9658 |
| Nottinghamshire | 26 | 0.8 | 349 | 0.1 | 349 |
| Oxfordshire | 32 | 0.9 | 859 | 0.2 | 863 |
| Shropshire | 54 | 1.6 | 4557 | 1.3 | 4658 |
| Somerset | 61 | 1.8 | 3663 | 1.0 | 5340 |
| South Yorkshire | 13 | 0.4 | 1371 | 0.4 | 1369 |
| Staffordshire | 43 | 1.3 | 2135 | 0.6 | 1988 |
| Suffolk | 100 | 3.0 | 1714 | 0.5 | 2162 |
| Surrey | 258 | 7.6 | 9821 | 2.7 | 9771 |
| Tyne and Wear | 8 | 0.2 | 439 | 0.1 | 434 |
| Warwickshire | 12 | 0.4 | 98 | 0.0 | 117 |
| West Midlands | 3 | 0.1 | 106 | 0.0 | 154 |
| West Sussex | 171 | 5.1 | 4192 | 1.2 | 3987 |
| West Yorkshire | 96 | 2.8 | 10008 | 2.7 | 10722 |
| Wiltshire | 37 | 1.1 | 1325 | 0.4 | 1305 |
| **Totals** | | | **365990** | | **372151** |

In presenting the findings of the common land survey the intention here is to base the main discussion on **broad** and **priority** habitat types (see below) rather than the more detailed set of Phase 1 habitat categories identified in the main survey. The latter are however summarised in Technical Appendix 1 of this report. Reference to broad and priority habitats enables consideration to be given to the biodiversity value of commons.

Responding to the Rio *Convention on Biological Diversity,* the UK Government published a programme of action in regard to biodiversity conservation - *Biodiversity : The UK Action Plan* (1994). A Biodiversity Steering Group subsequently considered how best to achieve the 59 objectives detailed in the action plan. Among its tasks was the development of costed plans for threatened species and habitats. Subsequent reports have detailed Broad Habitat Types, Priority Habitats and Priority Species, and around the country various organisations have been preparing Local Biodiversity Action Plans. As far as common land is concerned the UK Biodiversity Action Plan (1994, 1998) specifically refers to commons in descriptions of plans for lowland heath, grazing marshes, lowland acid grassland, calcareous grassland and wood pastures. This does not mean however that the importance of common land is simply confined to these particular habitat types.

The biological survey of common land does not directly address the issue of biodiversity and, as has been indicated, is based simply on a Phase 1 mapping of vegetation and the collation of information on species in general. That said, some insight into the contribution that commons make to biodiversity can be gained from a translation of Phase 1 habitats into the UK BAP Broad Habitat Types and Priority Habitats. This translation cannot always be effected cleanly or fully because of the detail that underpins certain of the categories concerned. While this is the case the exercise is worthwhile, if only as a first stage in the process of evaluating the overall significance of commons in regard to biodiversity. As far as priority species are concerned the biological survey has generated extensive listings of flora and fauna at a county level. It is possible therefore to ascertain the presence or absence of such species from these particular inventories.

It is not possible here to enter into a detailed assessment of the biodiversity value of commons. However, it is appropriate to consider some of the data generated for the various broad and priority habitats that have been identified.

## 6. Broad Habitat Types

Table 7 records the absolute and relative significance of the 21 broad habitat categories for the 3388 commons included in the survey. The summary descriptions of the various broad habitat categories that serve as preambles to the presentation of statistical data below are shortened and slightly modified versions of those prepared by the JNCC Support Unit.

### 1. Broadleaved, mixed and yew woodland

This habitat is characterised by vegetation dominated by native and non-native broadleaved trees and yew (*Taxus baccata*). For this category these trees should be more than 5m high when mature, with a canopy cover of more than 20%. In addition the trees concerned should exceed more than 20% of the total tree cover. The Phase 1 codes within this habitat type are A111, A112, A131, A132, A21, A41, A43 and J14.

Of the commons surveyed 2114 recorded habitats of this type. They range in size from 0.01 hectares to 762 hectares, and cover a total area of 22524 hectares. This amounts to 6.2% of the area of broad habitats (Table 7). Table 8 indicates that five counties have more than 1000 hectares of broad-leaved and mixed woodland – Surrey (4576 hectares), Hampshire (2170 hectares), Devon (1518 hectares), West Sussex (1508 hectares) and North Yorkshire (1142 hectares). Figure 11 shows the distribution of this habitat category. It confirms that broad-leaved and mixed woodlands are found on commons in all parts of England (except central and eastern parts of the Midlands), but that concentrations are particularly strong in the home counties (especially in western parts of Surrey and the north-western corner of West Sussex.

### 2. Coniferous woodland

This habitat is characterised by vegetation dominated by stands of native and non-native coniferous tree species. The trees should be more than 5m high when mature, with a canopy cover of more than 20%. In addition the tree concerned should exceed

more than 80% of the total tree cover within particular stands. The Phase 1 codes within this habitat type are A121, A122 and A42.

In all 191 commons have habitats of this type. They cover a total area of 2680 hectares (0.7% of the total broad habitat area), with sizes ranging between 0.03 and 394 hectares. Table 8 shows that four counties have over 250 hectares of coniferous woodland on commons – Surrey (844 hectares), Wiltshire (399 hectares), North Yorkshire (295 hectares) and West Sussex (292 hectares). Figure 12 indicates that while small parches of these woodlands are to be found in various parts of England (e.g. central Cumbria and South Staffordshire), the main cluster is located in the same areas as those identified for broadleaved and mixed woodlands (i.e. western parts of Surrey and the north-western corner of West Sussex).

**3. Boundary and linear features**

This habitat type includes a wide array of 'linearly arranged landscape features' such as hedgerows, lines of trees, walls, dry ditches, narrow roadside verges with semi-natural vegetation. The Phase 1 codes associated with this habitat category are : J21, J211, J222, J22, J221, J222, J23, J231, J232, J25, J26 and J28. It should be emphasised that this survey did not set out to record the lengths and areas of this habitat type specifically, and the results are likely to underestimate the extent of boundaries and linear features on common land.

While this is the case it is worth noting that these features were identified on 71 commons in 16 counties and have an estimated total area of some 26 hectares (Table 8). Their distribution is displayed in Figure 13 . The main clusters are to be found in Hertfordshire, Avon and central Nottinghamshire.

**4. Arable and horticultural**

This habitat type includes arable cropland, commercial horticultural land, freshly-ploughed land, annual leys, rotational set-aside, and cereal field margins (but not field boundaries, domestic gardens or allotments). The Phase 1 category that matches this habitat type is J11.

In all, 121 of the commons surveyed had broad habitats of this type. They covered a total area of 1559 hectares (0.4% of the total broad habitat area). Table 8 indicates that commons in four counties recorded total areas of arable and horticultural land in excess of 100 hectares : Essex (272 hectares), Cheshire (180 hectares), Dorset (167 hectares) and Hertfordshire (138 hectares).

Figure 14 shows that this habitat type is very widely, but thinly, distributed in the lowland regions of England.

**5. Improved grassland**

The 'improved grassland' habitat type is characterised by vegetation dominated by quick growing grasses on fertile, neutral soils, most notably rye grass *Lolium* spp and white clover *Trifolium repens*. Improved grasslands are typically either managed as pasture or mown regularly for silage production, or in non agricultural contexts for recreation and amenity purposes. They are often periodically re-sown and are maintained by fertiliser treatment and weed control.

Three Phase 1 codes define this broad habitat type – B4, B6 and J12. The habitat figures on 1105 commons, and accounts for 7634 hectares (2.1% of the total broad habitat area). The largest individual habitat covers 223 hectares. Table 8 shows that total areas of improved grassland on commons exceeded 400 hectares in seven counties : Cumbria (752 hectares), Greater London (627 hectares), Surrey (600 hectares), Humberside (480 hectares), Cornwall (457 hectares), Norfolk (434 hectares) and North Yorkshire (423 hectares).

Figure 15 indicates that strong concentrations of commons with improved grasslands are located in the London region (especially Surrey and north-western parts of West Sussex), in Norfolk and in central and eastern parts of Cumbria. Elsewhere the habitat type occurs on commons that are very widely dispersed.

**6. Neutral grassland**

This habitat type includes vegetation dominated by grasses and herbs on a range of neutral soils (with pH values ranging between 4.5 and 6.5). They include 'enclosed

dry hay meadows and pastures together with a range of grasslands that are periodically inundated with water or permanently moist'.

'Neutral grasslands are sometimes referred to as mesotrophic grasslands. The plant species assemblages that develop on neutral soils are different from those that develop on acid soils (acid or calcifugous grassland) and calcareous soils (calcareous or calcicolous grassland). For the most part neutral grassland communities have few diagnostic indicator species but lack strong calcicoles or calcifuges characteristics of base-rich and acid soils respectively. The National Vegetation Classification describes 12 types of unimproved and semi-improved neutral grassland (Rodwell, 1992)'.

Traditionally unimproved or species-rich neutral grasslands are managed as hay-meadows and pastures. Semi-improved neutral grasslands are also included in this broad habitat type and these grasslands are usually managed for pasture or for silage or hay. Neutral grassland differs from improved grasslands by having a less lush sward, a greater range and higher cover of herbs, and usually less than 25% cover of perennial rye-grass *Lolium perenne.*

Two Phase 1 categories define this broad habitat type – B21 and B22. These occur on a large number of commons (1286), but the areas concerned are relatively small. In total the habitat covers 7683 hectares (2.1% of the total broad habitat area). Table 8 shows that neutral grasslands on commons covered areas in excess of 300 hectares in eight counties : Herefordshire (864 hectares), Surrey (543 hectares), Gloucestershire (470 hectares), Cambridgeshire (443 hectares), Hertfordshire (385 hectares), North Yorkshire (335 hectares), Avon (326 hectares) and Tyne and Wear (315 hectares).

Figure 16 reveals that while such habitats occur on commons throughout England, the main concentrations are in the south-east (notably Surrey and Hertfordshire) and in Hereforshire, western Worcestershire and Avon. Quite substantial numbers of commons with neutral grasslands are also to be found in West Yorkshire, eastern Cumbria and in North Yorkshire.

## 7. Calcareous grassland

This broad habitat type is characterised by vegetation dominated by grasses and herbs on shallow, well-drained soils which are rich in bases (principally calcium carbonate) formed by the weathering of chalk and other types of limestone or base-rich rock. Although the base-status of such soils is usually high, with a pH of above 6, it may also be more moderate and calcareous grassland communities can occur on soils with a pH as low as 5.

Calcareous grasslands are also called calcicolous grassland and are sometimes referred to as chalk or limestone grasslands. The plant species assemblages that develop on calcareous soils are different from those that occur on neutral soils (neutral or mesotrophic grassland) and acid soils (acid or calcifugous grassland), and characteristically include a range of strict calcicoles. The National Vegetation Classification describes 14 types of calcareous grassland (Rodwell, 1992).

Two Phase 1 codes define this habitat type – B31 and B32. The habitat was identified on 261 commons and covered in total 3731 hectares (1% of the total broad habitat area) – Table 7. The largest single tract extended over 285 hectares. Table 8 shows that nearly two-thirds of all the calcareous grassland on commons is to be found in three counties : North Yorkshire 1102 hectares), Gloucestershire (738 hectares) and Cumbria (589 hectares).

Figure 17 charts the distribution of this habitat category. As is to be expected the main clusters of commons are associated with the principal areas of limestone and chalk bedrock – the Cotswolds, Chilterns, north-western parts of North Yorkshire and eastern Cumbria.

## 8. Acid grassland

This broad habitat type is characterised by vegetation dominated by grasses and herbs on a range of lime-deficient soils which have been derived form acidic bedrock and on superficial deposits such as sands and gravels. Such soils usually have a low base status, with a pH of less than 5.5. This habitat type includes a range of types from open communities on very dry sandy soils in the lowlands, which may contain many

annual species, through closed pastures on red brown earths to damp acidic grasslands typically found on gleys and shallow peats.

Acid grasslands are also referred to as calcifugous swards. The plant species assemblages that develop on acid soils are characterised by the presence of a combination of calcifuge species. The National Vegetation Classification describes six types of acid grassland (Rodwell, 1992). This habitat type also includes inland sand dune communities (Rodwell, 2000). Acid grasslands and snowbed communities which occur exclusively in the montane (Alpine) zone are included in the "montane habitats" broad habitat type.

Two Phase 1 categories can be allocated unambiguously to this broad habitat category – B11 and B12. Two further categories however – D5 and D6, both of which are mosaics, need to be disaggregated since they could also be assigned in part to the broad habitat category ('Dwarf Shrub Heath'). Given the definition of these mosaics the decision was taken to attribute 80% of D5 and D6 areas to 'acid grassland' broad habitat type.

Acid grasslands on common land cover a very extensive area (98981 hectares) and are to be found on 1114 commons. This is the most dominant of all the broad habitat types and accounts for 27% of the total area. As Table 8 indicates, by far the greatest area of acid grassland on commons is to be found in Cumbria. This county alone accounts for 56% of the total area under this broad habitat type. Other counties with substantial areas are North Yorkshire (12531 hectares), Devon (8174 hectares) and Durham (6751 hectares).

Figure 18 shows that in terms of numbers of commons the main concentrations are to be found in the Pennines, central Cumbria, Dartmoor and Bodmin Moor. A swarm of commons with acid grassland habitats are also to be found in Greater London and surrounding counties.

**9. Bracken**

This broad habitat type includes areas dominated by a continuous (over 95%) canopy cover of bracken *Pteridium aquilinum* at the height of the growing season. It does not

include areas with scattered patches of bracken. Nor does it include areas of bracken under forest or woodland canopy.

The Phase 1 habitat associated with this particular category is C11. It is found on 924 commons, covers 26350 hectares and accounts for 7.2% of the total broad habitat area. As Table 8 indicates, five counties have over 1000 hectares of continuous bracken associated with common lands : Cumbria (8522 hectares), Devon (5782 hectares) and North Yorkshire (3961 hectares). Figure 19 confirms the strong concentration of commons with bracken in these upland counties, but also draws attention to strong clusters in Herefordshire, Norfolk, Surrey and north-western parts of West Sussex.

**10. Dwarf shrub heath**

This broad habitat type is characterised by vegetation that has a greater than 25% cover of plant species from the heath family (ericoids) or dwarf gorse. It generally occurs on well drained, nutrient poor, acid soils. Heaths do occur on more basic soils but these are more limited in extent and can been recognised by the presence of herbs characteristic of calcareous grassland. Dwarf shrub heath includes both dry and wet heath types and occurs both in the lowlands and the uplands.

This habitat type does not include dwarf shrub dominated vegetation in which species characteristic of peat-forming vegetation such as cotton grass *Eriophorum spp* and peat building sphagna are abundant, or that occurs on deep peat (greater than 0.5m). It also does not include heath types which are exclusively alpine in distribution.

The Phase 1 categories that constitute this broad habitat are D11, D12 and D2. To these it is necessary add a proportion of the area associated with two further Phase 1 categories – D5 and D6. Given the definition of these mosaics the decision was taken to set this at 20% (see above, description of the broad habitat type – 'Acid Grassland').

Dwarf shrub heath is found on 843 of the commons surveyed. It is the second most dominant habitat type, covering 78040 hectares and accounting for 22% of the total broad habitat area (Table 7). By far the largest area of dwarf shrub heath is to be

found in North Yorkshire (30755 hectares). Two other counties with areas in excess of 10000 hectares are Devon (11631 hectares) and Durham (10379 hectares). Figure 20 shows that commons with habitats of dwarf shrub heath occur throughout the Pennines, in central Cumbria, the North Yorkshire Moors, in Cornwall and Devon, and in Surrey.

**11. Fen, marsh and swamp**

This broad habitat type is characterised by a variety of vegetation types that are found on mineratrophic (ground-waterfed), permanently, seasonally or periodically waterlogged peat, peaty soils, or mineral soils. Fens are peatlands which receive water and nutrients from ground-water and surface run-off, as well as from rainfall. Flushes are a type of fen associated with lateral water movement, and springs with localised upwelling of water. Marsh is a general term usually used to imply water-logged soil; it is used more specifically here to refer to a collection fen meadows and rush pasture communities on mineral soils and shallow peats. Swamps are characterised by tall emergent vegetation. Reedbeds (ie. swamps dominated by stands of common reed *Phragmites australis*) are also included in this type.

This habitat type does not include neutral and improved grasslands on floodplains and grazing marshes which are included in the 'Neutral Grassland' and 'Improved Grassland' broad habitat types, respectively. Nor does it include ombrotrophic mires (blanket, raised and intermediate bogs) or areas of carr (fen woodland dominated by species such as willow *Salix* spp., alder *Alnus glutinosa* or birch *Betula* spp.).

A number of Phase 1 categories are associated with this particular habitat type - B5, E21, E22, E23, E3, E31, E32, E33 and F1. In aggregate these categories were identified on 941commons. They cover a total area of 25602 hectares and constitute 7% of the total broad habitat area (Table 7). Table 9 indicates three counties account for just over two-thirds of this area : Cumbria (7483 hectares), Devon (6155 hectares) and North Yorkshire (3649 hectares). Figure 21 confirms that this habitat type characterises commons throughout the Pennines, in central Cumbria, in Cornwall and Devon, and in many parts of Norfolk.

**12. Bog**

This broad habitat type covers wetlands that support vegetation that is usually peat forming and which receive mineral nutrients principally from precipitation rather than ground water. This is referred to as ombrotrophic (rain-fed) mire. Two major bog types are identified, namely raised bog and blanket bog. These two types are for the most part fairly distinctive but they are extremes of what can be considered an ecological continuum, and intermediate (or mixed) types do occur.

The vegetation of bogs which have not been modified by surface drying and aeration or heavy grazing is dominated by acidophilous species such as bog mosses *Sphagnum* spp., cotton grass *Eriophorum* spp. and cross-leaved heath *Erica tetralix*. The water-table on these types of bogs is usually at or just below the surface.

This habitat type also includes modified bog vegetation that essentially resembles wet or dry dwarf shrub heath but occurs on deep acid peat which would have once supported peat-forming vegetation. Modified bog may also support impoverished vegetation dominated by purple moor grass *Molinia caerulea* or hare's tail cotton-grass *Eriophorum vaginatum*. Although there is no agreed minimum depth of peat that can support ombrotrophic vegetation, unmodified bog can be identified floristically by the presence of characteristic species such as cotton grass *Eriophorum* spp and peat-forming sphagna. Peat depth, although somewhat arbitrary, is used as the primary criterion to separate types of modified bog vegetation from the "Dwarf shrub heath" broad habitat type and certain types of "Fen, marsh and swamp" broad habitats type. Therefore vegetation dominated by dwarf shrubs, cotton grass *Eriophorum* spp, or purple moor-grass *Molinia caerulea* vegetation on peat greater than 0.5m deep is classified as bog for the purposes of the Broad Habitat Classification.

In lowland areas with predominately acid substrata there are examples of valley and basin mires which receive acid surface seepage which gives rise to vegetation similar to that of bogs. However, these types are covered in the "Fen, marsh and swamp" broad habitat type.

The Phase 1 habitats associated with this broad category are E161, E162, E17 and E18. Together these areas are found on 342 commons and cover 66891 hectares

(Table 7). Accounting for 18% of the total broad habitat area, this is the third most dominant type.

The largest expanses of bog habitats are to be found on commons in North Yorkshire (22144 hectares) and Cumbria (17843 hectares). Other substantial areas occur in Durham (8933 hectares) and Devon (7077 hectares) – Table 9.

Figure 22 shows that bog habitats are overwhelmingly associated with common lands in the Pennines, central Cumbria and Dartmoor. The habitat has been recorded on very few commons in other parts of England.

**13. Standing water and canals**

This broad habitat type includes natural systems such as lakes, meres and pools, as well as man-made waters such as reservoirs, canals, ponds and gravel pits. It includes the open water zone (which may contain submerged, free floating or floating-leaved vegetation) and water fringe vegetation. Ditches with open water for at least the majority of the year are also included in this habitat type.

Standing waters are usually classified according to their nutrient status. There are three main types of standing waters, namely: oligotrophic (nutrient poor), eutrophic (nutrient rich), and mesotrophic (intermediate). Other types of lake include dystrophic (highly acidic, brown water), marl lakes, brackish water lakes, turloughs and other temporary water bodies. Coastal saline lagoons are not included in this habitat type but are covered by the 'Sublittoral sediment' category.

The transition between open water and land is often occupied by tall emergent vegetation called swamp or reedbed, or wet woodland called carr. In practice this vegetation often forms a continuum but for the purposes of the Broad Habitat Classification marginal emergent vegetation that is greater than 5m wide, or in areas of wetland habitat with contiguous water levels to the waterbody that are greater than 0.25ha, are included in the 'Fen, marsh and swamp' broad habitat type. Wet woodland is included in the 'Broadleaved, mixed and yew woodland' broad habitat type.

The Phase 1 categories included in this habitat category are GG1 and potentially parts of F21 and F22. Since it is not possible to differentiate, for convenience here the areas associated with these latter two categories are equally split between this broad habitat type and that of 'Rivers and Streams' (see below).

In all, standing water and canals were recorded on 597 commons. They covered an area of 1272 hectares (Table 7). The vast majority of this area (834 hectares) is to be found in Cumbria (Table 9). However, as Figure 23 indicates, in terms of numbers of commons with such habitats, the dominant clusters are to be found in the home counties, and most notably in Surrey and Hertfordshire.

**14. Rivers and streams**

This broad habitat type comprises rivers and streams from bank top to bank top, or where there are no distinctive banks or banks are never overtopped, it includes the extent of the mean annual flood. This includes the open channel (which may contain submerged, free floating or floating-leaved vegetation), water fringe vegetation and exposed sediments and shingle banks. Adjacent semi-natural wetland habitats such as unimproved floodplain grasslands, marshy grassland, wet heath, fens, bogs, flushes swamps and wet woodland, although intimately linked with the river, are covered in other broad habitat types.

The Phase 1 categories that define this broad habitat are GG2, F21 and F22. They are found on 154 commons and cover an area of 503 hectares (Table 7). Seventy percent of this area is associated with commons in the counties of West Sussex (291 hectares) and Norfolk (62 hectares) – Table 9. Figure 24 shows that commons with rivers and streams are found scattered throughout the country, with no distinctive regional associations.

**15. Montane habitats**

This broad habitat category includes a range of vegetation types that occur mainly in the montane zone, such as prostrate dwarf shrub heath, snow bed communities, sedge and rush heaths, and moss heaths. It is difficult to match Phase 1 categories to this broad habitat type, given the detail needed to define it. Here reference is simply made to lichen/bryophyte heath – D3. The Phase 1 category D4 was not recorded for any

commons. In all, just 11 commons have D3 habitats, all of which (with the exception of one common in Suffolk – CL42) are in Cumbria (Figure 25). They cover 398 hectares (Table 9).

**16. Inland rock**

This broad habitat type covers both natural and artificial exposed rock surfaces where these are almost entirely lacking in vegetation, such as inland cliffs, ledges, caves, screes and limestone pavements, as well as various forms of excavations and waste tips such as quarries and quarry waste.

A number of vegetation types associated with rock habitats are also included in this broad habitat type. These are chasmophytic vegetation (plant communities that colonise the cracks and fissures of rock faces), calaminarian grassland (a grassland type which is found on soils which have levels of heavy metals, such as leads, chromium and copper, that are toxic to most plant species), and certain types of tall herb and fern vegetation, which as a result of grazing pressure are much reduced in extent. These are frequently confined to areas inaccessible to grazing animals such as cliff faces and ledges, and to a lesser extent, lightly grazed steep rocky slopes and boulder fields.

The Phase 1 habitats that can be mapped into this broad category are I111, I112, I121, I122, I13, I141, I142, I21, I22, I23 and C2. These cover a total area of 12972 hectares and were identified on 353 commons (Table 7). The majority of these are in Cumbria where they encompass an area of 10438 hectares (80% of the habitat total) – Table 9. This special regional association is confirmed in Figure 26. This map distribution does however highlight the presence of inland rock sites on commons in various parts of the Pennines, in Devon and in other dispersed locations.

**17. Built up areas and gardens**

This broad habitat type embraces urban and rural settlements, farm buildings, caravan parks and other man-made built structures such as industrial estates, retail parks, waste and derelict ground, urban parkland and urban transport infrastructure. It also includes domestic gardens and allotments. It does not include amenity grasslands which form part of the 'Improved grassland' broad habitat type.

The Phase 1 categories that define this type are : I24, J13, J3, J34, J35, J36, H4, H81, H82. These cover a total area of 307 hectares, and were recorded on 173 commons (Table 7). Over half of the area concerned is associated with commons in Devon and Cornwall (Table 9), but as Figure 27 indicates the largest cluster of commons with this habitat type is to be found in Greater London and Surrey.

**18. Supralittoral rock**

This broad habitat type occurs above high water mark, in areas influenced by wave splash and sea-spray. It is characterised by salt-tolerant species. Features that may be present include vertical rock, boulders, gullies, ledges and pools, depending on the wave exposure of the site and its geology. The vegetation of coastal cliffs or slopes form a transition from maritime species to terrestrial communities further inland. These inland vegetation types, which may be dominated by dwarf shrub heath or calcareous grassland, are not included in this broad habitat type. They are treated as components of other broad habitat types.

The Phase 1 habitats that define this broad habitat category are : H4, H81, H82, H83, H84. These have been identified on 42 commons, covering an area of 298 hectares (Table 7). The largest area (144 hectares) is to be found on coastal commons in Cornwall (Table 9). Figure 28 shows the distribution of commons with supra-littoral rock habitats. It confirms that such commons are to be found mainly in Cornwall and Devon, and along coasts in the north of England.

**19. Supralittoral sediment**

This broad habitat type occurs above high water mark, and in areas influenced by wave splash and sea spray. Salt-tolerant species are the characteristic colonisers of this broad habitat type and the communities present are strongly influenced by sediment size as well as degree of wave exposure of the shore. Strandline communities are often present on moderately exposed sandy shores, particularly on flat, slightly mobile beaches with little or no human disturbance. On the upper margins shore, three major supralittoral sediment habitat types occur namely, coastal vegetated shingle, sand dunes, and machair.

Shingle beaches tend to form in high energy environments where the sea can move and pile up pebbles on the shore above the tideline. The five types of shingle beach that have been recognised are fringing beaches, spits, barriers, cuspate forelands and barrier islands. Vegetation will establish on shingle beaches when there is a matrix of finer material such as sand or silt, and where the structure is stable. Sand dunes are formed by wind blown sand. Distinct features within dune systems are foredunes, yellow dunes, dune grassland, dune slacks, dune heath and dune scrub.

The Phase 1 categories that distinguish this broad habitat type are: H3, H4, H5, H64, H65, H66, H67, H68. These have been recorded on 48 commons and cover a total area of 828 hectares (Table 7). Nearly 68% of this is associated with commons in Norfolk (287 hectares) and Cumbria (273 hectares) – Table 9. Figure 29 shows the distribution of commons recording this particular habitat type.

**20. Littoral rock**

This broad habitat type equates with the Phase 1 category H13. It characterises only six commons and has an associated area of some 33 hectares (Table 7). The majority of this is accounted for by a rock face at CL334 in Cornwall (24 hectares) – Table 9. Figure 30 shows that the majority of commons with this habitat type are in Cornwall.

**21. Littoral sediment**

The Phase 1 types that comprise this broad habitat category are H11, H12, H23, H24, H26. Littoral sediments were mapped on 66 commons, covering an area of 5445 hectares (Table 7). The main expanses are to be found in Norfolk (1749 hectares) and Cumbria (1136 hectares) – Table 9. Figure 31 shows the distribution of commons recording this broad habitat type.

## 7. Broad Habitats and Common Land : the national context

Having summarised the significance of broad habitat types on the common lands of England, it is appropriate to compare certain of the area statistics derived through the survey with those estimated for the whole of England from Countryside Survey 1990 (Barr et al. 1993). Table 10 confirms that, in terms of broad habitats, commons are

dominated by acid grass/bracken, heath and bog. Fen, marsh and swamp, broad-leaved woodland, neutral/calcareous grasslands and inland rock are also well represented. Not surprisingly arable, built-up and open water broad habitats are not widespread on commons.

Overall common land constitutes about 3% of the land area and of the main broad habitats in England. About a quarter of the acid grass/bracken, heath, and fen, marsh and swamp broad habitats in England are associated with common land. Over half of bog and inland rock broad habitats are found on common land. Coastal habitats, neutral and calcareous grasslands and broad-leaved woodlands are found on commons in about the same proportion as the rest of the countryside. The highly artificial arable, improved grass and built-up broad habitats, which are the dominant habitat types in England, are proportionately under-represented on commons. Thus, it is evident that commons provide a widely dispersed and important resource of semi-natural broad habitat types in England.

Table 10

| Broad Habitats | Estimated Area in England ('000 ha)* | Surveyed Area on Common Land ('000 ha) | Proportion of Broad Habitat on Common Land % |
|---|---|---|---|
| Broad-leaved woodland | 874 | 22.5 | 3 |
| Coniferous woodland | 352 | 2.7 | 1 |
| Arable | 4490 | 1.6 | 0 |
| Improved grass | 3980 | 7.6 | 0 |
| Neutral/calcareous grass | 325 | 11.4 | 4 |
| Acid grass/bracken | 554 | 125.3 | 23 |
| Heath | 344 | 78.0 | 23 |
| Fen, marsh and swamp | 89 | 25.6 | 29 |
| Bog | 105 | 66.9 | 64 |
| Open water | 103 | 1.3 | 1 |
| Inland Rock | 21 | 13.0 | 62 |
| Coastal | 176 | 6.5 | 4 |
| Built-up | 1375 | 0.3 | 0 |
| Total | 12788 | 362.7 | 3 |

*Countryside Survey 1990

## 8. Priority Habitats

Unfortunately, because of the detail that underpins certain of the categories concerned, the Phase 1 habitats do not translate easily or convincingly into 'priority' habitats. In some cases the matching is clear, in most others very crude assumptions have to be made if estimates of the areas associated with the various priority habitat types are to be derived. However, given their significance within the context of biodiversity conservation it is nevertheless appropriate to offer some broad indication of the significance of these habitats on the commons of England.

### (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. Nearly 1500 commons have habitats of this type, many of which are located in environments where certain of the priority habitats are normally encountered (e.g. commons on chalk downs).

### (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. As it happens the survey only recorded 8 commons with identified hedgerows. There may of course be many more instances of such habitats on the smaller commons not covered by this study.

(c) **Cereal Field Margins**

Field margins were not examined in the survey, but it is worth noting that arable (J11) was recorded on 121 commons, and covered quite a substantial area (1559 hectares). The margins of these fields could well be significant.

(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. In the survey 468 commons were recorded as having B21 habitats. These covered an area of 2151 hectares. 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 429 commons with B21 habitats were identified in lowland areas. These habitats cover 2079 hectares.

(e) **Upland Hay Meadow**

This category is difficult to comment upon since it specifically refers to NVC MG3 communities, mainly to be found in northern and western Britain. It can be noted however that 38 commons lying in upland areas (as defined above) have B21 habitats, but the areas concerned are very small (53 hectares).

(f) **Lowland Dry Acidic Heath**

Phase 1 categories B11 and B12 are applicable to this priority habitat in lowland locations. The survey identified 527 lowland commons of this type. They cover an area of 5907 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 the survey identified 373 lowland commons with B5 habitats. These habitats cover 1825 hectares. However, it is not possible from the survey data to differentiate those 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. In aggregate these habitats are present on 179 lowland commons, and cover 1843 hectares.

(i) **Upland Calcareous Grassland**

Calcareous grasslands in the uplands occur on 82 commons. These cover 1889 hectares.

(j) **Lowland Heathland**

Lowland heathlands are defined by a number of Phase 1 types – D11, D12, D2, D5 and D6. These habitats occur on 431 commons and cover an extensive area – 23230 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 nearly 1700 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 – E31, E32, E33, E21, and E22. One or more of these habitats occurs on 129 lowland commons and covers in total 1204 hectares.

(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. F1 habitats occur on 124 commons and cover 206 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. In aggregate the two habitats occur on only 19 commons, covering just 19 hectares.

(p) **Eutrophic standing waters**

This priority habitat might include commons with G11 and/or G15 Phase 1 categories. The survey recorded such habitats on 26 commons, the area concerned being 42 hectares.

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

The two Phase 1 habitat types (G13, G14) that might include areas in this priority habitat category occur only four of the commons surveyed. They cover only 7.6 hectares.

(r) **Chalk rivers**

The Phase 1 type G25 relating to marl-based running water could define this particular priority habitat. However it was identified on only one common.

(s) **Upland Heathland**

The various Phase 1 types that comprise this priority habitat category (see lowland heathland above) are to be found on 409 commons. These habitats cover a substantial area – 65099 hectares.

(t) **Blanket Bog**

Three Phase 1 habitat types identify the blanket bog category (E161, E17 and E18). This category covers nearly 65000 hectares and is found on 321 commons.

(u) **Limestone Pavements**

Limestone pavements constitute a discrete Phase 1 category (I13). As has been noted previously this habitat type figures on 30 commons and covers an area of 747 hectares.

**(v) Maritime Cliff and Slope**

Five Phase 1 habitats could be included in this priority habitat category (H81, H82, H83, H84 and H85). One or more of these feature on 41 commons, with a total habitat area of 285 hectares.

(w) **Miscellaneous coastal habitats**

The list of priority habitats contains a number of highly specific coastal categories. Numbers of commons and associated areas are as follows: vegetated shingle structures (H3) – 15 commons, 128 hectares; saltmarsh (H23, H24, H26) – 55 commons, 2582 hectares; sand dunes (H5, H64, H65, H66, H67, H68) – 31 commons, 673 hectares; saline lagoons (G16) – 9 commons, 20 hectares; deep mud and mudflats (H11) – 44 commons, 2819 hectares.

In addition to habitats the Biodiversity Action Plan recognises a large number of priority species of flora and fauna. It is not possible here to consider the incidence of these species on commons. However the extensive lists of species on commons prepared for each of the counties of England do indicate the degree to which these areas contribute to the conservation of biological diversity. Further discussion of these species is also contained within the county reports.

Although essentially only indicative of the situation it is evident from the data collated that many areas of common land are indeed important wildlife sanctuaries, and that there is considerable scope for the development of common land management agreements based on Local Biodiversity Action Plans. In keeping with the spirit of the Earth Summit, and its emphasis on the need for greater integration and local

participation in conservation initiatives, such plans could involve partnerships between graziers associations (where they exist), local authorities and conservation bodies. Guidance Notes produced by the UK Local Issues Advisory Group provide a useful set of recommendations in regard to the formation of partnerships and local action plans.

## 9. Protected and Defined Areas

### (a) Natural Areas

In 1993 English Nature published a discussion paper outlining an approach to nature conservation based upon the concept of natural areas. These areas would distinguish a series of discrete regions based on bio-geographical attributes. A map was subsequently prepared, but this was later modified to accommodate the results of a similar exercise undertaken in 1996 and involving the delimitation of landscape character areas in England. This latter exercise embraced a more wide-ranging set of variables and was promoted by the Countryside Commission (as it then was) working in partnership with English Nature and English Heritage. The boundaries of the 1994 natural areas were adjusted to fit those of the landscape character areas. In total 120 natural areas have been recognised. These identify 97 areas on the mainland of England, and 23 coastal sections (including the Isles of Scilly).

The concept of natural areas is a key element in English Nature's strategy 'Beyond 2000'. It recognises that biodiversity conservation must be concerned with all areas of the countryside and not just with those species and habitats that lie within different types of protected areas (e.g. SSSIs). Given that common lands are often important as wildlife sanctuaries, it is appropriate to consider the relationship between commons and the set of natural areas. From Figure 32 it is evident that commons feature, albeit to a variable degree, in almost all of the areas delineated (with the sole exception of Romsey Marshes). The numbers and areas of commons in each of the natural areas are recorded in Table 11. The data show that 8 natural areas have more than 200 commons wholly or partly within them – London Basin (590), East Anglian Plain (469), Cumbria Fells and Dales (321), Chilterns (311), Wealden Greensand (291), Yorkshire Dales (244), Low Weald (228) and Cotswolds (219). Together these areas

have nearly 38% of all the commons in England. If reference is made to the extent of common land then four natural areas are particularly significant – Cumbria Fells (76919 hectares), Yorkshire Dales (58192 hectares), North Pennines (57923 hectares) and Dartmoor (36076 hectares).

Table 11

Natural Areas

| Code Number | Natural Areas | Number of Commons | % Commons | Area (Hectares) | % Common Land |
|---|---|---|---|---|---|
| 1 | North Northumberland Coastal Plain | 7 | 0.1 | 45.0 | 0.0 |
| 2 | Border Uplands | 77 | 1.1 | 3137.2 | 0.9 |
| 3 | Solway Basin | 127 | 1.8 | 2729.1 | 0.7 |
| 4 | North Pennines | 83 | 1.2 | 57923.4 | 15.8 |
| 5 | Northumbria Coal Measures | 68 | 1.0 | 1059.6 | 0.3 |
| 6 | Durham Magnesian Limestone Plateau | 5 | 0.1 | 6.6 | 0.0 |
| 7 | Tees Lowlands | 19 | 0.3 | 12.0 | 0.0 |
| 8 | Yorkshire Dales | 244 | 3.5 | 58192.6 | 15.8 |
| 9 | Eden Valley | 90 | 1.3 | 372.7 | 0.1 |
| 10 | Cumbria Fells and Dales | 321 | 4.6 | 76919.4 | 20.9 |
| 11 | West Cumbria Coastal Plain | 51 | 0.7 | 856.6 | 0.2 |
| 12 | Forest of Bowland | 83 | 1.2 | 6988.8 | 1.9 |
| 13 | Lancashire Plain and Valleys | 54 | 0.8 | 1024.6 | 0.3 |
| 14 | Southern Pennines | 169 | 2.4 | 14077.1 | 3.8 |
| 15 | Pennine Dales Fringe | 60 | 0.9 | 38.3 | 0.0 |
| 16 | Vale of York and Mowbray | 61 | 0.9 | 271.9 | 0.1 |
| 17 | North York Moors and Hills | 90 | 1.3 | 24332.9 | 6.6 |
| 18 | Vale of Pickering | 17 | 0.2 | 43.5 | 0.0 |
| 19 | Yorkshire Wolds | 36 | 0.5 | 16.9 | 0.0 |
| 20 | Holderness | 19 | 0.3 | 483.3 | 0.1 |
| 21 | Humbe Estuary | 3 | 0.0 | 0.6 | 0.0 |
| 22 | Humberhead Levels | 56 | 0.8 | 1858.3 | 0.5 |
| 23 | Southern Magnesian Limestone | 45 | 0.6 | 108.7 | 0.0 |
| 24 | Coal Measures | 75 | 1.1 | 631.1 | 0.2 |
| 25 | Dark Peak | 36 | 0.5 | 1395.6 | 0.4 |
| 26 | Urban Mersey Basin | 40 | 0.6 | 270.7 | 0.1 |
| 27 | Mosses and Meres | 111 | 1.6 | 753.4 | 0.2 |
| 28 | Potteries and Churnet Valley | 45 | 0.6 | 181.9 | 0.1 |
| 29 | South West Peak | 12 | 0.2 | 37.5 | 0.0 |
| 30 | White Peak | 33 | 0.5 | 98.3 | 0.0 |
| 31 | Derbyshire Peak Fringe and Lower Derwent | 20 | 0.3 | 18.6 | 0.0 |
| 32 | Sherwood | 7 | 0.1 | 2.2 | 0.0 |
| 33 | Trent Valley and Rises | 130 | 1.9 | 679.3 | 0.2 |
| 34 | North Lincolnshire Coversands and Clay Vales | 20 | 0.3 | 14.2 | 0.0 |

| | | | | |
|---|---|---|---|---|
| 35 Lincolnshire Wolds | 8 | 0.1 | 5.2 | 0.0 |
| 36 Lincolnshire Coast and Marshes | 31 | 0.4 | 30.4 | 0.0 |
| 37 The Fens | 94 | 1.3 | 428.7 | 0.1 |
| 38 Lincolnshire and Rutland Limestone | 2 | 0.0 | 87.7 | 0.0 |
| 39 Charnwood | 7 | 0.1 | 10.2 | 0.0 |
| 40 Needwood and South Derbyshire Claylands | 12 | 0.2 | 46.8 | 0.0 |
| 41 Oswestry Uplands | 2 | 0.0 | 61.0 | 0.0 |
| 42 Shropshire Hills | 30 | 0.4 | 4096.4 | 1.1 |
| 43 Midlands Plateau | 82 | 1.2 | 2264.3 | 0.6 |
| 44 Midland Clay Pastures | 16 | 0.2 | 2.2 | 0.0 |
| 45 Rockingham Forest | 14 | 0.2 | 45.8 | 0.0 |
| 46 Breckland | 30 | 0.4 | 489.8 | 0.1 |
| 47 North Norfolk | 152 | 2.2 | 838.0 | 0.2 |
| 48 The Broads | 52 | 0.7 | 1630.7 | 0.4 |
| 49 Suffolk Coast and Heaths | 55 | 0.8 | 663.2 | 0.2 |
| 50 East Anglian Plain | 469 | 6.7 | 2832.3 | 0.8 |
| 51 East Anglian Chalk | 24 | 0.3 | 219.2 | 0.1 |
| 52 West Anglian Plain | 143 | 2.0 | 723.2 | 0.2 |
| 53 Bedfordshire Greensand Ridge | 9 | 0.1 | 3.0 | 0.0 |
| 54 Yardley-Whittlewood Ridge | 4 | 0.1 | 2.6 | 0.0 |
| 55 Cotswolds | 219 | 3.1 | 1686.4 | 0.5 |
| 56 Severn and Avon Vales | 139 | 2.0 | 1568.1 | 0.4 |
| 57 Malvern Hills and Teme Valley | 17 | 0.2 | 340.4 | 0.1 |
| 58 Clun and North West Herefordshire Hills | 49 | 0.7 | 747.2 | 0.2 |
| 59 Central Herefordshire | 90 | 1.3 | 706.5 | 0.2 |
| 60 Black Mountains and Golden Valley | 23 | 0.3 | 1034.3 | 0.3 |
| 61 Dean Plateau and Wye Valley | 89 | 1.3 | 428.0 | 0.1 |
| 62 Bristol, Avon Valleys and Ridges | 89 | 1.3 | 897.6 | 0.2 |
| 63 Thames and Avon Vales | 112 | 1.6 | 442.8 | 0.1 |
| 64 Midvale Ridge | 31 | 0.4 | 46.6 | 0.0 |
| 65 Chilterns | 311 | 4.4 | 2934.4 | 0.8 |
| 66 London Basin | 590 | 8.4 | 8323.7 | 2.3 |
| 67 Greater Thames Estuary | 26 | 0.4 | 97.6 | 0.0 |
| 68 North Kent Plain | 29 | 0.4 | 232.8 | 0.1 |
| 69 North Downs | 101 | 1.4 | 2054.9 | 0.6 |
| 70 Wealden Greensand | 291 | 4.1 | 7210.3 | 2.0 |
| 72 High Weald | 86 | 1.2 | 2911.5 | 0.8 |
| 73 Low Weald | 228 | 3.2 | 2492.5 | 0.7 |
| 74 South Downs | 35 | 0.5 | 925.0 | 0.3 |
| 75 South Coast Plain and Hampshire Lowlands | 42 | 0.6 | 1235.0 | 0.3 |
| 76 Isle of Wight | 14 | 0.2 | 15.2 | 0.0 |
| 77 New Forest | 34 | 0.5 | 308.0 | 0.1 |
| 78 Hampshire Downs | 55 | 0.8 | 586.5 | 0.2 |
| 79 Berkshire and Marlborough Downs | 38 | 0.5 | 251.6 | 0.1 |
| 80 South Wessex Downs | 60 | 0.9 | 1644.2 | 0.5 |
| 81 Dorset Heaths | 59 | 0.8 | 1007.5 | 0.3 |
| 82 Isles of Portland and Purbeck | 7 | 0.1 | 194.3 | 0.1 |

| | | | | |
|---|---|---|---|---|
| 83 Wessex Vales | 48 | 0.7 | 468.3 | 0.1 |
| 84 Mendip Hills | 15 | 0.2 | 675.9 | 0.2 |
| 85 Somerset Levels and Moors | 21 | 0.3 | 439.9 | 0.1 |
| 86 Mid Somerset Hills | 6 | 0.1 | 20.4 | 0.0 |
| 87 Exmoor and the Quantocks | 35 | 0.5 | 5070.6 | 1.4 |
| 88 Vale of Taunton and Quantock Fringes | 14 | 0.2 | 119.9 | 0.0 |
| 89 Blackdowns | 29 | 0.4 | 747.8 | 0.2 |
| 90 Devon Redlands | 24 | 0.3 | 1374.7 | 0.4 |
| 91 South Devon | 28 | 0.4 | 1908.0 | 0.5 |
| 92 Dartmoor | 78 | 1.1 | 36076.1 | 9.8 |
| 93 The Culm | 50 | 0.7 | 1612.0 | 0.4 |
| 94 Bodmin Moor | 65 | 0.9 | 6911.6 | 1.9 |
| 95 Cornish Killas and Granites | 147 | 2.1 | 1651.9 | 0.5 |
| 96 West Penwith | 38 | 0.5 | 608.0 | 0.2 |
| 97 The Lizard | 27 | 0.4 | 302.0 | 0.1 |

**(b) National Parks**

Table 12 records the number and area of commons within the national parks of England. It should be noted that these data refer to commons lying mainly within the respective national parks. These commons (689) constitute nearly 10% of all the commons in England. Of these some 58% are within the Lake District National Park and the Yorkshire Dales National Park. Although not taking into account the areas of commons that overlap the boundaries of the national parks, the figures relating to the extent of common land are sufficiently indicative of their importance. They suggest that nearly 49% of all common lands lie within national parks. Particularly large areas are recorded for the Lake District, Yorkshire Dales and Dartmoor. As has been shown previously, it is in these regions that the largest CL units have been registered.

Table 12

| National Parks | Number of Commons | % Commons | Area (Hectares) | % Area |
|---|---|---|---|---|
| Broads | 27 | 3.9 | 113.0 | 0.1 |
| Dartmoor | 85 | 12.3 | 37290.4 | 20.9 |
| Exmoor | 21 | 3.1 | 4806.7 | 2.7 |
| Lake District | 211 | 30.6 | 62539.7 | 35.0 |
| North Yorkshire Moors | 70 | 10.2 | 24244.4 | 13.6 |
| Northumberland | 20 | 2.9 | 149.2 | 0.1 |
| Peak District | 65 | 9.4 | 2719.0 | 1.5 |
| Yorkshire Dales | 190 | 27.6 | 46624.0 | 26.1 |
| Total | 689 | | 178486.3 | |

**(c) Areas of Outstanding Natural Beauty**

Nearly 23% of all the registered commons in England are located either wholly or partly within Areas of Outstanding Natural Beauty. As Table 13 indicates these cover 113134 hectares – 31% of the total area of common land. This means that together the two main systems of protected landscapes (national parks and AONBs) have 33% of commons, and claim 79 % of the total registered area of common land.

Five AONBs, mainly in the lowlands, have more than 100 commons within them. These are the Cotswolds (189), Chilterns (183), Sussex Downs (160), Cornwall (146), and Surrey Hills (146). These areas have just over half of all the commons in AONBs. In terms of area however it is evident that the largest expanses of common land are to be found in the uplands, with the North Pennines dominating the picture to a very marked degree. This AONB has 57099 hectares of common land – exactly half of the total. Just three other areas have over 6000 hectares. These are Nidderdale (7873 hectares), Forest of Bowland (6715 hectares) and Cornwall (6658 hectares).

Table 13

| AONB | Number of Commons | % | Area (Hectares) | % Area |
|---|---|---|---|---|
| Arnside and Silverdale | 7 | 0.1 | 1163.3 | 1.0 |
| Blackdown Hills | 18 | 0.3 | 577.7 | 0.5 |
| Cannock Chase | 10 | 0.1 | 1424.9 | 1.3 |
| Chichester Harbour | 5 | 0.1 | 941.2 | 0.8 |
| Chilterns | 183 | 2.6 | 1979.6 | 1.8 |
| Cornwall | 146 | 2.1 | 6658.0 | 5.9 |
| Cotswolds | 189 | 2.7 | 1639.5 | 1.5 |
| Cranborne Chase | 26 | 0.4 | 1540.9 | 1.4 |
| Dedham Vale | 4 | 0.1 | 44.1 | 0.0 |
| Dorset | 32 | 0.5 | 343.1 | 0.3 |
| East Devon | 19 | 0.3 | 1284.7 | 1.1 |
| East Hampshire | 8 | 0.1 | 245.4 | 0.2 |
| Forest of Bowland | 68 | 1.0 | 6715.4 | 5.9 |
| High Weald | 65 | 0.9 | 2850.4 | 2.5 |
| Howardian Hills | 4 | 0.1 | 2.4 | 0.0 |
| Isle of Wight | 7 | 0.1 | 6.2 | 0.0 |
| Kent Downs | 47 | 0.7 | 456.6 | 0.4 |
| Lincolnshire Wolds | 10 | 0.1 | 5.0 | 0.0 |
| Malvern Hills | 20 | 0.3 | 658.2 | 0.6 |
| Mendip H | 20 | 0.3 | 700.0 | 0.6 |
| Nidderdale | 66 | 0.9 | 7873.5 | 7.0 |
| Norfolk Coast | 36 | 0.5 | 2418.7 | 2.1 |
| North Devon | 3 | 0.0 | 437.2 | 0.4 |
| North Pennines | 80 | 1.1 | 57099.6 | 50.5 |
| North Wessex Downs | 57 | 0.8 | 776.3 | 0.7 |
| Northumberland Coast | 5 | 0.1 | 44.4 | 0.0 |
| Quantock Hills | 9 | 0.1 | 185.9 | 0.2 |
| Shropshire Hills | 38 | 0.5 | 4115.8 | 3.6 |
| Solway Coast | 24 | 0.3 | 1360.0 | 1.2 |
| South Devon | 5 | 0.1 | 11.2 | 0.0 |
| Suffolk Coast and Heaths | 23 | 0.3 | 501.4 | 0.4 |
| Surrey Hills | 146 | 2.1 | 5651.0 | 5.0 |
| Sussex Downs | 160 | 2.3 | 3078.2 | 2.7 |
| Tamar Valley | 3 | 0.0 | 88.2 | 0.1 |
| Wye Valley | 48 | 0.7 | 235.9 | 0.2 |
| **Totals** | **1591** | | **113113.7** | **100.0** |

### (d) Other Conservation Areas

For those commons included in the biological survey information was gathered concerning their conservation status. To this end commons were tagged according the presence of 14 types of designated or defined areas. Two of these have already been considered (but for **all** registered commons) – national parks and AONBs. The other

12 categories are specified in Table 14, together with details as to the number of **surveyed** commons involved. It is to be appreciated that commons can be wholly attached to a particular conservation category, or the category may apply only in part. To calibrate this the proportion of commons associated with the various categories were estimated and areas calibrated.

Table 14

| Conservation Sites | Number of Commons | % Commons Surveyed |
|---|---|---|
| Sites of Special Scientific Interest | 833 | 24.7 |
| NCR | 163 | 4.8 |
| National Nature Reserves | 35 | 1.0 |
| Local Nature Reserves | 40 | 1.2 |
| Environmentally Sensitive Areas | 425 | 12.5 |
| Special Protection Areas | 87 | 2.6 |
| Heritage Coasts | 28 | 0.8 |
| County Trusts | 214 | 6.3 |
| National Trust | 147 | 4.3 |
| RSPB Sites | 18 | 0.5 |
| Ramsar Sites | 28 | 0.8 |
| Other Conservation Sites/Areas | 368 | 10.9 |

Overall the data underline the high conservation status of common lands. Of the 3388 commons surveyed 56% (1916 commons) have all or part of their areas associated with one or more of the conservation categories identified above.

Nearly a quarter of the commons surveyed (833) has been designated as SSSIs. Figure 33 shows that these commons to be found in all parts of England – both in the lowlands and the uplands. Particularly notable concentrations are, however, to be noted in central Cumbria, the Pennines, North York Moors, Dartmoor, Surrey, north western parts of West Sussex, and in many coastal locations. The total surveyed area of these commons is 232103 hectares, but it is estimated that of this, 182026 hectares have been designated.

Over 400 commons in the survey are located in Environmentally Sensitive Areas. The area of common land concerned is estimated to be 115144 hectares. Commons

associated with Nature Conservation Review Sites number 163, extending over 55726 hectares. Although relatively small in size, significant numbers of commons (214) are managed by County Trusts. They cover 11888 hectares. The National Trust is responsible for substantial areas of common land; the survey identified 147 commons, with an area of just over 30000 hectares. The 35 commons lying wholly or partly within National Nature Reserves claim 20255 hectares, while 87 are associated with Special Protection Areas (20575 hectares). The latter are designated under the European Commission Directive on the Conservation of Wild Birds (79/409/EEC). There are 73 of these in England, covering nearly 400000 hectares.

Although not extensive in area a number of commons are especially important as Ramsar sites (28 commons, 4176 hectares). Ramsar sites are designated under the International Convention on Wetlands of International Importance especially as Waterfowl Habitat (the Ramsar Convention). By August 1999 68 sites had been designated, with an area of nearly 282000 hectares.

At the time they were surveyed, 18 commons with an area of 2540 hectares were managed by the Royal Society for the Protection of Birds. Forty commons were Local Nature Reserves, but these covered only 1184 hectares. Finally it can be noted that a large number of commons (368) have other types of conservation status (too diverse to detail), and account for a substantial area of land – 41558 hectares.

Although the designation of Special Areas of Conservation (SACs) only emerged subsequent to the establishment of the common land survey, given its importance for biodiversity conservation at a European level it is appropriate to consider the degree to which commons are associated with this particular classification. Candidate SACs together with classified SPAs form the Natura 2000 network of sites. Under the Habitats and Birds Directives this network of sites is designed to promote the conservation of habitats, wild animals and plants, both on land and at sea. Since it was not possible for this study to match individual 1:10000 maps of commons to those for SACs a **best estimate** of the situation was derived through the overlay of GIS coverages. However, in regard to this latter process it is necessary to emphasise that the matching exercise effected here was based on maps drawn at different scales and different levels of accuracy in terms of digitised boundaries. With these important

caveats duly recognised it can be noted that of all the registered commons approximately 330 are located within or border (some SACs are stretches of rivers) 61 designated areas (40% of the 148 SACs recognised at the time of the study). Given the problems described above, it has not been possible to determine the area of common land within the SACs. Despite this the data derived would appear to confirm the strong contribution that commons make to biodiversity conservation.

It is not possible to aggregate all of these various statistics to yield an overall figure for common land with conservation status (because the same areas of land can have more than one designation). However, some indication of the importance of commons for conservation can be gained from the statistic that the area of those commons with one or more of the designations listed in Table 14 amounts to 80% of the total area surveyed. The management implications of this are evident.

**10. Management Issues**

Since the publication of the Royal Commission report on Common Land the use and management of such areas has excited considerable debate. The biological survey of commons does not allow a robust evaluation to be made as to the quality of management, but piecemeal data collated during site visits yield some insights into a number of contentious issues.

The problem of over-grazing on commons has been widely reported. Aitchison (1997) presented data in regard to Wales that suggested that grazing pressures appeared to be ‘high’ or ‘very high’ on 35% of common land. This latter evaluation was based on a six-category classification of commons (see below) derived from field assessments of the impact of prevailing grazing intensities on the general condition of vegetation and associated habitats. In considering the results of such a classificatory system it is to be appreciated that for certain commons allocation to the six categories has to be an average rating. This applies, for example, where certain parts of a common may be undergrazed or not grazed at all (e.g. bracken invested tracts), while other parts are heavily grazed. That said, for a great many commons the situation is not so variable, and allocations to categories can be made without such crude averaging. In general terms, it can be suggested that those commons experiencing high/very high intensities

are likely to be ‘overgrazed’, while those that have low levels of grazing are possibly ‘under-grazed’. Inevitably, the situation in this regard will vary from common to common, as will appropriate management solutions.

The impact of grazing was assessed for 1307 commons; for the remaining commons in the survey rights of common of pasture either did not apply or did not appear to be exercised. Table 15 suggests that the grazing situation in England is slightly less problematical than in Wales. Thus, grazing intensities were deemed to be ‘high’ or ‘very high’ on 22.5% of commons (c.f. 28.6% in Wales). These commons account for 26% of the total area being grazed, and are mainly located in Cumbria, the Pennines and Dartmoor. It is interesting to note that low grazing intensities tend to be associated with smaller commons. The data in Table 15 could be used to support the argument that, broadly speaking, there is a positive relationship between grazing pressure and size of common. The problem of over-grazing is mainly associated with extensive upland tracts. For small lowland commons the problem is often the reverse – one of under-grazing.

Table 15

| Grazing Intensity | Number of Commons | % Commons | % Area | Mean Size (Hectares) |
|---|---|---|---|---|
| Low | 214 | 16.3 | 7.4 | 99.3 |
| Low-Moderate | 81 | 6.3 | 4.2 | 144.4 |
| Moderate | 287 | 22.1 | 12.4 | 122.1 |
| Moderate-High | 185 | 14.2 | 13.5 | 208.3 |
| High | 283 | 21.6 | 25.3 | 254.9 |
| Very High | 11 | 0.8 | 1.2 | 313.6 |
| Variable | 244 | 18.6 | 36.0 | 422.0 |

During the biological survey of commons observations were made concerning other features associated with particular human activities. Thus it can be noted that the dumping of sundry materials was evident on 533 commons – nearly 16% of those surveyed. Encroachments of various types (eg use of commons for gardens, parking, cultivation etc) were recorded for 224 commons (7%). Fencing (mainly internal) was identified on 199 commons. While such data are of interest, and beg numerous

questions of relevance to the common land debate, they cannot be regarded as definitive or exhaustive of the situation on the ground. This is because the collation of such information was piecemeal, and largely incidental to the main purpose of the survey. It would be tendentious therefore to probe these data more fully, for example to ascertain linkages with habitat types, areas of conservation interest etc.

## 11. Conclusion

Although essentially a statistical and cartographic audit, the various findings of this study demonstrate that commons are a highly distinctive and important component of the English landscape. As an ancient system of land tenure, they are a heritage feature in their own right. Since time immemorial commons have served as grazing grounds for the sheep, cattle and ponies of pastoral farming communities. They continue to do so, and can be critical to the long-term viability of agricultural systems, especially in the hills and uplands. Over more recent times, the commons of England have been subjected to increasing pressures from agricultural intensification, and in places grazing intensities are not sustainable. At the other extreme are those commons (and parts of commons) where rights of pasture are no longer fully exercised, and where invasive species (e.g. bracken, scrub vegetation) have taken control. This applies in many upland locations, but is a particular problem for unfenced commons in more densely populated, lowland areas. Here the problem of stock disturbance (e.g. by dogs) and the dangers posed by motorised vehicles can be of major consequence. The relationship between the biological value of commons and their management for agriculture is of course a close one; the two are intimately linked.

The biological survey has shown that the commons of England are unquestionably a major ecological resource. The summary review of vegetation patterns provided here confirms that this is the case, as does the strong association of commons with designated conservation areas (e.g. SSSIs, NNRs etc). The situation has been shown to vary from region to region, and from common to common, but the overall picture is of a natural resource that has largely maintained its unimproved status and biodiversity in the face of numerous anthropogenic pressures. In this latter context the demands being placed on commons by amenity interests can be significant locally. The access question has always been central to the debate relating to the future use

and management of commons. It is of importance not only for those commons where a *de jure* right of access applies but also to those other areas where the right may be *de facto.* In the context of the currently debated *Countryside and Rights of Way Bill* it is evident that opening up of land for wider access could be of considerable consequence for the management of certain commons.

The statistical information and maps presented in this report not only shed light on the nature, function and condition of commons in England, they also serve to confirm that a more comprehensive and strategic set of policies and guidelines are needed to ensure their long-term well-being. It is not within the remit of this study to consider such complex and contentious matters, but it would appear that existing land management schemes and initiatives, especially those developed under the EC agri-environment programme could be more effectively applied to collectively managed commons. As in the utilization of all 'common pool resources' (e.g. the global commons), the main challenge is one of facilitating the development of robust collaborative management systems. The notion of co-management regimes is now widely referenced in the international conservation-development literature, and is particularly relevant to the common land context where stewardship must be achieved through partnership. Special legislation for commons may no longer be deemed necessary, but their sustainable use and management is certainly a priority issue.

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## Technical Appendix 1

## Phase 1 Categories

This appendix sets out analyses of the detailed information collated in the biological survey of common land and includes statistical summaries of the various Phase 1 habitat types identified. In all, nearly 20000 separately identified habitats were recorded on the 3388 commons surveyed. It is to be appreciated that it is not possible here to consider the local detail that characterises and differentiates commons around England. For this the reader should refer to the county monographs that underpin this national overview, and in particular the site records for individual commons.

Table A1 shows the number and area of the ten main Phase 1 habitat types. Of these the most extensive is that of Grassland and Marsh (B). It accounts for nearly a third of the area surveyed and is found on 76% of commons. Heathland (D) claims just under a quarter of common land and is the second most dominant habitat encountered. However, this particular habitat was present on only a quarter of commons. Equally concentrated in distribution, and of third-ranking significance, is Mire (E) habitats. They cover 21% of the total area of common land. Although frequently present on commons (71% of all the commons surveyed) the 'Woodland and Scrub' category claims a relatively small proportion of the total area (8%). The remaining habitats are less significant in terms of areal coverage, but are found on quite large numbers of commons. This is especially true of 'Anthropogenic' (J) habitats.

Table A1

| Habitat Types | Number of Commons | Total Area of Habitats (Hectares) | Mean Area of Habitats (Hectares) | % Total Area |
|---|---|---|---|---|
| Woodland and Scrub (A) | 2415 | 28262 | 11.7 | 7.6 |
| Grassland and Marsh (B) | 2572 | 119356 | 46.4 | 32.1 |
| Tall Herb and Fern (C) | 1470 | 28787 | 19.6 | 7.7 |
| Heathland (D) | 843 | 188730 | 105.3 | 23.8 |
| Mire (E) | 608 | 79453 | 130.7 | 21.3 |
| Swamp, Marginal Habitats (F) | 162 | 236 | 1.5 | 0.1 |
| Open Water (G) | 671 | 1745 | 2.6 | 0.5 |
| Coastland (H) | 102 | 6591 | 64.6 | 1.8 |
| Rock Exposure and Waste (I) | 361 | 12993 | 36.0 | 3.5 |
| Anthropogenic Habitats (J) | 1742 | 5999 | 3.4 | 1.6 |

* *Individual commons can have habitats within one or more categories.*

**Woodland and Scrub (A)**

Various types of woodland and scrub (Category A) are to be found on 2415 commons - 71% of all the commons surveyed, and the most frequently encountered of the 10 main Phase 1 habitat types. However, since the areas concerned are generally rather small, this category accounts for only 7.6% of the total area of common land (28263 hectares). The mean area of woodland and scrub habitats on those commons where they are present is 11.7 hectares. Setting this figure alongside a mode and median of 0.1 and 2.2 hectares indicates that statistically, the overall distribution of Category A areas is positively skewed. There are however a number of commons with relatively large areas of woodland and scrub. Thus, areas in excess 250 hectares were recorded for nine commons – CL1West Sussex (880 hectares); CL27 Wiltshire (801 hectares); CL196 Surrey (550 hectares); CL10 Somerset (491 hectares); CL93 Devon (390 hectares); CL81 North Yorkshire (292 hectares), CL6 North Yorkshire (289 hectares); CL326 Surrey (264 hectares) and CL28 Berkshire (260 hectares).

The areas of registered commons with woodland and scrub by county are detailed in Table A2. The data show that Surrey accounts for 21% of all the woodland and scrub to be found on the commons of England. Only four other counties claim over 5%. These are Hampshire (8.2%), Devon (8.1%), West Sussex (6.5%) and North Yorkshire (5.8%).

A more detailed insight into the geographical distribution of commons with Category A habitats is displayed in Figure A1. The pattern confirms the high and widespread incidence of woodland and scrub on the commons surveyed. Particularly strong concentrations are to be seen in western parts of Surrey, northwestern parts of West Sussex, southern Buckinghamshire and western Hertfordshire. This habitat type is also to be found on large numbers of commons in western and northern counties of England. Commons with woodland and scrub habitats are noticeably absent from many parts of the Midlands.

Within this habitat category it can be noted that woodland of various types (broad-leaved, coniferous and mixed) extend over 20753 hectares and account for 72% of the total. Scrub claims nearly 6450 hectares (23%), with the remainder being parkland/scattered tress or recently-felled woodland (Table A3). Details of the main sub-categories of woodland and scrub are presented below.

Table A3

| Habitat Type | Number of Commons | Area (Hectares) | % Area |
|---|---|---|---|
| A111 Broad-leaved Semi-natural | 1490 | 15252.0 | 54.0 |
| A112 Broad-leaved Plantation | 123 | 245.3 | 0.9 |
| A121 Coniferous Semi-natural | 65 | 465.9 | 1.6 |
| A122 Coniferous Plantation | 150 | 2164.8 | 7.7 |
| A131 Mixed Semi-natural | 168 | 2256.3 | 8.0 |
| A132 Mixed Plantation | 69 | 367.7 | 1.3 |
| A21 Dense Scrub | 1302 | 4384.6 | 15.5 |
| A22 Scatttered Scrub | 839 | 2064.9 | 7.3 |
| A3 Parkland scattered trees | 653 | 983.8 | 3.5 |
| A4 Recently-felled | 21 | 77.1 | 0.3 |
| A Woodland and Scrub | 2415 | 28262.4 | 100.0 |

**Woodland: Broadleaved Semi-Natural (A111)**

Habitats of broadleaved semi-natural woodland were identified on 1470 commons (43% of the surveyed commons). In all they covered 15252 hectares, and accounted for 54% of category A habitats.

Statistically, the distribution of A111 areas is positively skewed, as is evident from the mode, median and quartile values: mode – 1.0 hectares, lower quartile – 0.9 hectares, median – 2.1 hectares, and upper quartile – 7.8 hectares

Table A2 confirms that the largest areas of category A111 are located in Surrey (3014 hectares), Hampshire and (1284 hectares) and West Sussex (1065hectares). Many counties are seen to have less than 100 hectares of common land with these habitats. Figure A2 confirms the heavy concentration of broad-leaved, semi-natural woodland on the commons of the Home Counties. Although A111 habitats are found on commons in most parts of England the distribution is clearly much more dispersed in form.

Five commons have over 200 hectares of broad-leaved semi-natural woodland: CL1 East Sussex (719 hectares), CL27 Wiltshire (350 hectares), CL10 Somerset (348 hectares), CL6 North Yorkshire (231 hectares) and CL28 Berkshire (218 hectares).

**Woodland: Broadleaved Plantation (A112)**

Broadleaved plantations were recorded on 123 commons. In total they covers just 245 hectares, with a mean area of 1.99 hectares. The skewed nature of the distribution is confirmed by associated measures of central tendency and dispersion: mode – 0.1 hectares, lower Quartile – 0.14 hectares, median – 0.35 hectares, and upper quartile – 1.6 hectares. In terms of total area, some 47% of this habitat is found in Dorset (83.9

hectares) and Avon (31.75 hectares). Significantly, nearly a third of this habitat category is accounted for by a plantation on one particular common – CL 212 Dorset.

**Woodland: Coniferous Semi-Natural (A121)**

Semi-natural coniferous woodland occurs on 65 commons, with a total cover of 466 hectares. Just over 50% of this habitat type is found on commons in Surrey (243 hectares). Together the counties of Surrey, West Sussex (88 hectares), East Sussex (52 hectares) and Devon (42 hectares) account for 91% of the semi-natural coniferous woodlands on the common of England.

For the 65 commons the mean area of this habitat type is 7.2 hectares. Only three commons have over 30 hectares under semi-natual coniferous woodland – CL1 East Sussex (52 hectares), CL95 Surrey (36 hectares) and CL100 Surrey (30 hectares). Most of the habitats are small in area, as the following descriptive statistics for the category show: mode – 2 hectares, lower quartile – 1.7 hectares, median – 3.2 hectares, and upper quartile – 9.25 hectares

**Woodland: Coniferous Plantation (A122)**

Coniferous woodlands grown as plantations were identified on 150 commons. The total area concerned is 2165 hectares, with a mean size of 14.4 hectares. Nearly 60% of this habitat is to be found on commons in Surrey (591 hectares), Wiltshire (399 hectares) and North Yorkshire (295 hectares). Three commons have over 200 hectares of land under coniferous plantations – CL27 Wiltshire (394 hectares), CL196 Surrey (300 hectares) and CL81 North Yorkshire (288 hectares).

Summary statistics for the category as a whole confirm that the majority of coniferous plantations are quite small: mode – 0.2 hectares, lower quartile – 0.6 hectares, median – 2.1 hectares, and upper quartile – 6.8 hectares

**Woodland: Mixed Semi-Natural (A131)**

Mixed semi-natural woodland occurs on 168 commons. The habitat type covers 2256 hectares, with a mean size of 13.4 hectares. Again the county of Surrey dominates the picture, accounting for some 46% of all the mixed semi-natural woodland on the commons of England (1045 hectares). Only two other counties have areas over 250 hectares – West Sussex (328 hectares) and Hampshire (306 hectares). Three commons have over 100 hectares of mixed semi-natural woodland – CL196 Surrey (150 hectares), CL48 Surrey (128 hectares), and CL101 Hampshire (114 hectares).

Statistically the distribution of habitat areas is positively skewed, with the following descriptive parameters: mode – 3 hectares, lower quartile – 1.27 hectares, median – 3.5 hectares, and upper quartile – 14.8 hectares.

**Woodland: Mixed Plantation (A132)**

Mixed woodland plantations were recorded on 69 commons. The areas of woodland concerned cover 368 hectares, 41% of which is to be found in the two counties of Surrey (79.5 hectares) and Hampshire (79.3 hectares). The mean size of this particular habitat type is 5.3 hectares. Three commons have over 50 hectares of mixed plantations – CL118 Hampshire (74.3 hectares), CL194 Surrey (72 hectares) and CL27 Wiltshire (50 hectares). For the majority of commons with this habitat type the areas concerned are very small, as is demonstrated by associated descriptive statistics: mode – 0.5 hectares, lower quartile – 0.35 hectares, median – 1.3 hectares, and upper quartile – 3.1 hectares

**Scrub: Dense/Continuous (A21)**

In total 1302 commons have habitats of dense/continuous scrub. In total they cover 4385 hectares and account for 15% of all category A habitats in terms of area (Table A3). Table A2 shows that four counties have over 400 hectares of land categorised as dense/continuous scrub. Together they claim nearly 50% of the habitat type – Devon (679 hectares), Cornwall (590 hectares), Hampshire (487 hectares) and Surrey (424 hectares). Figure A3 indicates that this habitat is heavily concentrated on commons to the south of a line from the Severn estuary to the Wash. Many small commons in Surrey and Hertfordshire have areas of dense scrub, as do commons in coastal and moorland regions of Cornwall and Devon.

The four largest areas of dense scrub are to be founded on CL24 Hampshire (194 hectares), CL93 Devon (162 hectares), CL10 Somerset (82 hectares) and CL193 Devon. For the majority of commons with this habitat type, however, the areas concerned are very small. This is evident from associated descriptive statistics: mean – 3.4 hectares, mode – 0.1 hectares, lower quartile – 0.3 hectares, median – 0.85 hectares, and upper quartile – 2.8 hectares

**Scrub: Scattered (A22)**

Scattered scrub was recorded on 839 commons. It covers 2065 hectares and accounts for 7.3% of habitat category A (Table A3). Half of the total area is located on commons in the counties of Devon (656 hectares) and Cumbria (384 hectares). Five commons have areas of 50 hectares or more – CL93 Devon (123 hectares), CL191 Devon (89 hectares), CL162 North Yorkshire (71 hectares), CL20 Gloucestershire (64 hectares) and CL33 Devon (50 hectares). The mean area of scattered scrub is 2.5 hectares, but for the majority of commons the areas concerned are much smaller. This is evident from associated descriptive statistics: mode – 0.1 hectares, lower quartile – 0.1 hectares, median – 0.4 hectares, and upper quartile – 1.6 hectares

**Parkland/Scattered Trees (A3)**

Measurable areas of parkland/scattered trees were identified on 653 commons. Together they cover 984 hectares. More than half of this area is associated with

commons in the county of Surrey (531 hectares). The mean size of this habitat type is 1.5 hectares, and only four commons have areas in excess of 25 hectares. These are CL326 Surrey (56 hectares), CL109 Surrey (42 hectares), CL1 Hampshire (36 hectares) and CL189 Surrey (35 hectares). The limited coverage of this habitat type is further underlined by the associated set of descriptive statistics - mode – 0.1 hectares, lower quartile – 0.1 hectares, median – 0.3 hectares, and upper quartile – 1 hectare.

**Recently-felled Woodland (A4)**

At the time they were surveyed, 21 commons included recently-felled woodland. However, the areas concerned covered only 77 hectares. Half of this was accounted for by one common where the area concerned was 39 hectares (CL57 Hereford/Worcester). In such a context descriptive statistics are of limited value, but can be cited for the sake of completeness: mode – 1 hectares, lower quartile – 0.16 hectares, median – 1 hectares, and upper quartile – 3.9 hectares.

## Grassland and Marsh (B)

Grasslands and marsh are the most extensive habitat types to be found on the commons of England. They feature on three-quarters of the commons surveyed (2572), and claim a total area of 119355 hectares. This amounts to nearly a third of all the common land included in the survey. It constitutes the largest of all the main habitat categories.

The county of Cumbria accounts for nearly 48% of the grassland and marsh on the commons of England, with a total area of 57214 hectares. Only two other counties have areas in excess of 10000 hectares – North Yorkshire (14927 hectares) and Devon (11909 hectares). Table A4 confirms that in terms of total size areas of grassland and marsh are of a much more limited order in lowland counties (but see below).

For the commons concerned the mean area of Category B habitats is 46.4 hectares but the statistical distribution is very strongly skewed, as is evident from associated descriptive measures: mode – 0.1 hectares, lower Quartile – 0.9 hectares, median – 3.2 hectares, and upper quartile – 16.4 hectares. Significantly, however, there are 21 commons that have areas of grassland and marsh that exceed 1000 hectares. The three largest areas are to be found on CL164 Devon (2911 hectares), CL29 Cumbria (2479 hectares) and CL39 Cumbria (2390 hectares).

Figure A4 shows the geographical distribution of commons with grassland and marsh habitats. The resultant pattern affirms the strong concentration of such habitats on commons in the main upland regions of the north (Cumbria and the Pennines) and the south-west (Dartmoor and Bodmin Moor). However, it also serves to show that while areas of grassland and marsh may be small in extent in lowland regions they are nevertheless present on large numbers of commons. In this regard the strong clusters around Greater London are worthy of particular note.

Table A5 details the numbers and associated areas of commons for various sub-categories of grassland and marsh. The distribution of these sub-categories is considered below.

Table A5

| Habitat Type | Number of Commons | Area (Hectares) | % Area |
|---|---|---|---|
| B11 Acidic Grassland : Unimproved | 851 | 86354.6 | 72.4 |
| B12 Acidic Grassland : Semi-improved | 356 | 2333.8 | 2.0 |
| B21 Neutral Grassland : Unimproved | 468 | 2150.8 | 1.8 |
| B22 Neutral Grassland : Semi-Improved | 938 | 5532.4 | 4.6 |
| B31 Calcareous Grassland Unimproved | 226 | 3279.1 | 2.7 |
| B32 Calcareous Grassland Semi-improved | 73 | 452.0 | 0.4 |
| B4 Improved Grassland | 514 | 4200.3 | 3.5 |
| B5 Marsh/Marshy Grassland | 635 | 13521.0 | 11.3 |
| B6 Poor Semi-Improved Grassland | 305 | 1531.7 | 1.3 |
| B Grassland and Marsh | 2572 | 119355.6 | |

**Acidic Grassland: Unimproved (B11)**

Unimproved acidic grassland habitats were identified on 851 commons. They cover a very extensive area – 86354 hectares. This amounts to 72% of the total area within Category B. Table A4 shows that by far the largest expanse of acidic grassland is associated with the commons of Cumbria. They claim 52297 hectares – nearly 61% of the total for the whole of England. The next two counties in terms of area are North Yorkshire and Devon, with 11637 hectares and 6764 hectares, respectively.

The six largest expanses of acidic grassland, each claiming more than 1500 hectares, are all located in Cumbria – CL39 (2300 hectares), CL22 (CL2290 hectares), CL20 (1840 hectares), CL85 (1830 hectares), CL42 (1765 hectares) and CL29 (1730 hectares). While these and other large areas lift the mean size of B11 habitats to 101 hectares, it is noteworthy that for the majority of commons such grasslands are less than 7 hectares. The skewed nature of the distribution is reflected in associated descriptive statistics: mode – 0.5 hectares, lower quartile – 1.0 hectares, median – 6.7 hectares, and upper quartile – 59.1 hectares.

The geographical distribution of commons with acidic grassland habitats is shown in Figure A5. While these habitats occur in many parts of England, the main concentrations are clearly seen to be located in Cumbria, the Pennines, Dartmoor and Bodmin Moor.

**Acidic Grassland: Semi-improved (B12)**

Semi-improved acidic grasslands occur on 356 commons and in total cover 2334 hectares. Table A4 shows that only four counties have over 200 hectares of common land under this habitat category – Durham (325 hectares), Lancashire (319 hectares), Hereford and Worcester (291 hectares) and Devon (227 hectares). For the majority of commons the areas of acidic grassland are quite small. This is evident from associated descriptive statistics - mode – 0.1 hectares, lower quartile – 0.4 hectares, median – 1.6

hectares, and upper quartile – 5.4 hectares. The two largest expanses of semi-improved acidic grassland are to be found on CL8 Durham (195 hectares) and CL18 Lancashire (183 hectares).

Figure A6 shows the distribution of commons with B12 habitats. Dominant clusters are to be seen in Surrey, the border regions of West Yorkshire and Greater Manchester, Lancashire, the Pennines and the South-West.

**Neutral Grassland : Unimproved (B21)**

Unimproved neutral grasslands were identified on 468 commons. This habitat type claims a total area of 2151 hectares. Seven counties have areas in excess of 100 hectares (Table 9). These are Avon (265 hectares), Oxford (219 hectares), Surrey (187 hectares), West Sussex (144 hectares), Essex (120 hectares) and Cambridgeshire (101 hectares). The mean area unimproved neutral grassland on the 468 commons is 4.6 hectares, but associated descriptive statistics indicate that for the majority of commons the areas concerned are smaller - mode – 0.1 hectares, lower quartile – 0.3 hectares, median – 1 hectare, and upper quartile – 3 hectares. Only three commons have areas in excess of 100 hectares – CL190 Avon (125.4 hectares), CL1 Oxfordshire (124.7 hectares) and CL38 Avon (110.4 hectares).

Figure A7 shows the geographical distribution of commons with B21 habitats. The pattern indicates that such grasslands are to be found in many parts of England, but with particular concentrations in the South-East, Avon and eastern Cumbria.

**Neutral Grassland: Semi-Improved (B22)**

Semi-improved neutral grasslands occur on 938 of the commons surveyed and cover a total area of 5532 hectares. Four counties (Table A4) have more than 300 hectares of this habitat type. They form two distinct regional clusters – Hereford/Worcestershire (788 hectares) and Gloucestershire (453 hectares), and Cambridgeshire (342 hectares) and Hertfordshire (339 hectares).

The mean size of the habitats for all of the commons is 5.9 hectares, but for the majority the areas concerned are less than 1.5 hectares. Descriptive statistics for the category are: mode – 0.1 hectares, lower quartile – 0.36 hectares, median – 1.2 hectares, and upper quartile – 4.2 hectares.

Figure A8 indicates that semi-improved neutral grasslands occur on commons in all parts of the country. However, the main concentrations are to be seen in Surrey, Hertfordshire, western and central parts of Hereford/Worcestershire. Perhaps surprisingly, the five largest areas of semi-improved neutral grassland are to be found outside of these particular core areas. They are CL1 Tyne and Wear (298 hectares), CL9 Devon (183 hectares), CL19 Bedfordshire (136 hectares), CL1 Nottinghamshire (114 hectares) and CL323 Gloucestershire (110 hectares).

**Calcareous Grassland Unimproved (B31)**

Unimproved calcareous grasslands were identified on 226 commons, and cover a total area of 3279 hectares. Nearly 65% of this area is associated with commons in three counties – North Yorkshire (1089 hectares), Gloucestershire (647 hectares) and Cumbria (586 hectares).

Figure A9 shows the distribution of commons with unimproved calcareous grasslands. The pattern highlights two strong clusters of commons; the first is centred in north-western parts of North Yorkshire, the second is based on the oolitic limestone of the Cotswolds and Mendips in Gloucestershire and Avon.

Four commons have areas in excess of 150 hectares – these are CL57 Hampshire (250 hectares), CL20 Gloucestershire, CL86 North Yorkshire (164 hectares) and CL58 Gloucestershire (155 hectares).

The mean habitat size is 14.5 hectares, but for the majority of commons the associated area is less than 3 hectares. Descriptive statistics for this habitat category are: mode – 0.3 hectares, lower quartile – 0.69 hectares, median – 3 hectares, and upper quartile – 13 hectares.

**Calcareous Grassland Semi-improved (B32)**

Semi-improved calcareous grasslands claim only 452 hectares and were identified on just 73 commons. The main areas are to be found in Hertfordshire (121 hectares), Gloucestershire (91 hectares) and East Sussex (82 hectares). Three commons account for more than half of the area of this habitat category. They are CL92 Hertfordshire, CL2 East Sussex (82 hectares) and CL20 Gloucestershire (55 hectares). For the majority of commons this type of grassland extends over less 1 hectare. Associated descriptive statistics are: mode – 0.1 hectares, lower quartile – 0.7 hectares, median – 0.8 hectares, and upper quartile – 5.7 hectares.

The distribution of the 72 commons with B32 habitats is shown in Figure A10. The cluster of commons in the Cotswolds region is the most notable feature of the pattern.

**Improved Grassland (B4)**

Improved grasslands occur on 514 commons and cover 4200 hectares. Three counties have over 300 hectares of this particular habitat type – Cumbria (569 hectares), Hereford and Worcester (378 hectares) and Cornwall (353 hectares). While the mean area of improved grasslands is 8.2 hectares, for the majority of commons they are than 2 hectares in size. Descriptive statistics for the category are: mode – 0.1 hectares, lower quartile – 0.6 hectares, median – 2.0 hectares, and upper quartile – 7.3 hectares.

Four commons have areas of improved grassland that exceed 100 hectares. These are CL70 Cumbria (158 hectares), CL14 Devon (150 hectares), CL28 Humberside (140 hectares) and CL138 Cornwall (106 hectares).

Figure A11 shows that the distribution of improved grasslands is quite widespread, but with quite strong local concentrations in northwestern parts of West Sussex and in Hertfordshire.

**Marsh/Marshy Grassland (B5)**

Marsh and marshy grasslands occur on 635 commons and cover an area of 13521 hectares. Some 11% of the Category B area is classed as marsh or marshy grassland Table A4). Four counties account for 78% of this area – Devon (4359 hectares), Cumbria (3332 hectares, West Yorkshire (1600 hectares) and North Yorkshire (1271 hectares).

Thirty-three commons have in excess 100 hectares of marsh/marshy grassland, but by far the most extensive is the 1884 hectares recorded for CL 164 Devon (Forest of Dartmoor). The mean size of category B5 habitats is 21.3 hectares. Descriptive statistics reveal however that the majority of commons actually have areas of less than 2 hectares: mode – 0.1 hectares, lower quartile – 0.5 hectares, median – 2.2 hectares, and upper quartile – 9.8 hectares.

Figure A12 shows that marsh and marshy grasslands are widely distributed but that the major concentrations are to be found on commons in the main upland regions. Particularly notable clusters are evident across the Pennines and in Devon and Cornwall.

**Poor Semi-Improved Grassland (B6)**

Poor semi-improved grasslands occur on 305 commons and extend over 1531 hectares. Three counties have over 200 hectares of common land associated with this particular type of habitat – Norfolk (257 hectares), Humberside (247 hectares) and Suffolk (201 hectares). The mean area of these grasslands is 5 hectares, but the majority of commons have less than 1.5 hectares. Descriptive statistics for the habitat category are: mode – 0.2 hectares, lower quartile – 0.4 hectares, median – 1.3 hectares, and upper quartile – 5 hectares.

Three commons have areas of poor semi-improved grassland in excess of 50 hectares. These are CL29 Humberside (119 hectares), CL30 Humberside (91 hectares) and CL173 Norfolk.

Figure A13 shows that category B6 commons have a strong presence in Norfolk, Suffolk, Surrey and Cumbria.

## Tall Herb and Fern (C)

Tall herb and fern habitats were identified on 1470 commons. They cover 28787 hectares and account for nearly 8% of the total area of common land. Table A6 indicates that by far the largest areas are to be found in the three counties of Cumbria (8813 hectares), Devon (6156 hectares) and North Yorkshire (4125 hectares). Together these counties claim two-thirds of the area of common land under this broad habitat category. The mean size per common is 19.6 hectares, but it is evident from other descriptive measures that for the great majority of commons the areas of tall herb and fern are quite small. Thus: mode – 0.1 hectares, lower quartile – 0.25 hectares, median – 1.1 hectares, and upper quartile – 8.8 hectares.

The five largest areas of category C habitats are on CL9 Shropshire (904 hectares), CL29 Cumbria (870 hectares), CL1 East Sussex (711 hectares), CL63 North Yorkshire (658 hectares) and Cl11 Cumbria (632 hectares).

Figure A14 shows the geographical distribution of commons with habitats of tall herb and fern. It indicates that commons with these habitats are dominantly located in the uplands of the north and south-west of England, in Hereford and Worcestershire, Surrey and Norfolk.

The distribution of the various sub-categories of tall herb and fern, together with associated statistics and maps, are considered below.

Table A7

| Habitat Type | Number of Commons | Area (Hectares) | % Area |
|---|---|---|---|
| C11 Bracken : Continuous | 925 | 26350.1 | 91.5 |
| C12 Bracken : Scattered | 292 | 2019.0 | 7.0 |
| C22 Upland Species-rich ledges | 2 | 56.3 | 0.2 |
| C31 Other : Tall Ruderal | 664 | 360.2 | 1.3 |
| C32 Other : Non-ruderal | 5 | 1.4 | 0.0 |
| C Tall Herb and Fern | 1470 | 28786.95 | 100.0 |

### Bracken: Continuous (C11)

Table A7 confirms that continuous expanses of bracken account for the vast majority of the tall herb and fern habitat type (91.5%). Commons in the three counties of Cumbria, Devon and North Yorkshire have large areas under continuous bracken – 18265 hectares, nearly 70% of the total. In England as a whole Category C11 occurs on 925 commons. While the overall mean area for these commons is 28.5 hectares, other descriptive statistics confirm that, for the majority of these commons, areas of continuous bracken are less than 3.5 hectares, and that the distribution is statistically

skewed: mode – 0.1 hectares, lower quartile – 0.7 hectares, median – 3.5 hectares, and upper quartile – 22.4 hectares.

As would be expected, Figure A15, depicting the distribution of continuous bracken is very similar to that described above for tall herb and fern as a whole.

**Bracken: Scattered (C12)**

Scattered bracken occurs on 292 commons. Such habitats cover 2019 hectares. Nearly 79% of this habitat type is to be found in the four counties of Shropshire (476 hectares), Somerset (463 hectares), Cumbria (369 hectares) and Devon (281 hectares). For the majority of commons the areas concerned are quite small – less 1 hectare, but the overall mean is 6.9 hectares. Summary statistics confirm the skewed distribution of habitat sizes: mode – 0.1 hectares, lower quartile – 0.25 hectares, median – 0.9 hectares, and upper quartile – 3.3 hectares. Two commons account for 42% of the area under scattered bracken – CL9 Shropshire (435 hectares) and CL10 Somerset (409 hectares).

Figure A16 confirms that, apart from a strong cluster in the county of Surrey, the majority of commons with scattered bracken are located in the more westerly counties of England.

**Upland Species-rich ledges (C22)**

This habitat type was recorded on just two commons: CL76 (50 hectares) and CL137 (6.3 hectares), each in North Yorkshire.

**Other: Tall Ruderal (C31)**

Although 664 commons have areas of herb and fern classified as tall ruderal the areas concerned are very small. The total coverage is just 360 hectares, with the largest areas being found in Norfolk (56 hectares), Surrey (39 hectares) and Humberside (30 hectares. Descriptive statistics for commons with tall ruderal habitats are: mode – 0.1 hectares, lower quartile – 0.1 hectares, median – 0.2 hectares, and upper quartile – 0.5 hectares.

Figure A17 shows that commons with habitats of this type are widely distributed, but with notable clusters in Surrey, Norfolk, Hereford and Worcestershire.

**Other: Non-ruderal (C32)**

This habitat category was identified on just five commons, with a total area of non-ruderal vegetation of 1.36 hectares. The commons concerned are located in Avon and Somerset and Cumbria.

## Heathland (D)

Heathland habitats occur on 843 commons. They cover 88730 hectares and account for 24% of the total surveyed area common land. Table A8 indicates that the largest expanses of heathland are to be found in the counties North Yorkshire (31450 hectares), Cumbria (13179 hectares), Devon (12812 hectares) and Durham (12086 hectares). Together these counties claim 78% of the total area of heathland in England.

While for the majority of commons the area of heathland is less than 11 hectares, the overall mean area is much higher at 105.3 hectares. This high average reflects the very extensive areas of heathland that are found on a number of registered commons. Four such commons, all in North Yorkshire, have over 2500 hectares – CL63 (3792 hectares), CL4 (2769 hectares), and CL76 (2703 hectares). The skewed nature of the distribution in terms of areas of heathland is evident from the associated set of descriptive measures: mode – 0.2 hectares, lower quartile – 2.0 hectares, median – 10.45 hectares, and upper quartile – 68.0 hectares.

Figure A18 shows the distribution of commons with areas of heathland. Dominant clusters are to be seen in Cumbria, the Pennines, North York Moors, the moors of Devon and Cornwall, and in parts of Surrey, Hampshire and Dorset.

The distribution of the various sub-categories of heathland, together with associated statistics and maps, are considered below.

Table A9

| Habitat Type | Number of Commons | Area (Hectares) | % Area |
|---|---|---|---|
| D11 Dry Dwarf Shrub Heath : Acidic | 627 | 62821.0 | 70.8 |
| D12 Dry Dwarf Shrub Heath : Basic | 5 | 46.8 | 0.1 |
| D2 Wet Dwarf Shrub Heath | 335 | 12591.6 | 14.2 |
| D3 Lichen/Bryophyte Heath | 11 | 397.9 | 0.4 |
| D5 Dry Heath Acidic Mosaic | 332 | 11192.2 | 12.6 |
| D6 Wet heath/acidic grassland mosaic | 73 | 1680.0 | 1.9 |
| D Heathland | 843 | 188729.5 | |

### Dry Dwarf Shrub Heath: Acidic (D11)

This habitat type accounts for 71% of the total heathland area (Table A9), and covers 62821 hectares on 627 commons. Of this total area nearly 82% is to be found in the counties of North Yorkshire (24589 hectares), Devon (9915 hectares), Durham (9808 hectares) and Cumbria (7109 hectares). For the majority of commons the area of dry, acidic dwarf shrub heath is relatively small (less than 10 hectares), but the overall mean size is 100 hectares. The largest tracts of acidic heath (over 1500 hectares) are to be found on four commons in North Yorkshire – CL63 (2782 hectares), CL162

(1625 hectares), CL53 (1607 hectares) and CL81 (1521 hectares) – and CL75 in Durham (1913 hectares). Descriptive statistics for the category are: mode – 0.1 hectares, lower quartile – 1.3 hectares, median – 8.17 hectares, and upper quartile – 63 hectares.

Figure A19 shows the distribution of commons with dry dwarf shrub heath. As is to be expected the spatial pattern is broadly the same as that described above for the total heathland category.

**Dry Dwarf Shrub Heath: Basic (D12)**

Dry dwarf shrub heath occurs on just five commons. They cover just 46.8 hectares; of which 40 hectares are associated with CL23 Somerset.

**Wet Dwarf Shrub Heath (D2)**

Wet dwarf shrub heath occurs on 335 commons. The total area covered by this particular type of habitat is 12592 hectares, of which 85% is to be found in four counties - North Yorkshire (5993 hectares), Cornwall (1945 hectares), Devon (1419 hectares) and Cumbria (1353 hectares). The majority of commons have less than 5.5 hectares, but the existence of some very large tracts lifts the overall mean area to 37.6 hectares. The skewed nature of the distribution is evident from the basic descriptive statistics for this habitat type: mode – 0.2 hectares, lower quartile – 1.6 hectares, median – 5.5 hectares, and upper quartile – 20.1 hectares.

Three commons in North Yorkshire have areas of wet dwarf shrub heath that are more than 1000 hectares in size. These are CL4 (1612 hectares), CL76 (1478 hectares) and CL63 (1009 hectares).

The geographical distribution of D2 commons is shown in Figure A20. The pattern highlights the main concentrations in the uplands of the north and south-west of England, and in selected lowland areas (e.g. Surrey, Hampshire and Dorest).

**Lichen/Bryophyte Heath (D3)**

Lichen/bryophyte heath occurs on just 11 commons. This category covers 398 hectares, with a mean area of 36.2 hectares. The largest areas are found on five commons in Cumbria – CL11 (103 hectares), CL413 (56 hectares), CL123 (54 hectares), CL59 (50 hectares) and CL101 (49.5 hectares).

**Dry Heath Acidic Mosaic (D5)**

Dry acidic heath mosaic occurs on 332 commons, and covers an area of 11192 hectares. Just over half of this area is to be found in the counties of Cumbria (3601 hectares) and Durham (2133 hectares). While the mean area of this habitat type is 33.7 hectares, the majority of commons have areas of less than 8 hectares. Eight

commons have more than 200 hectares of dry acidic heath mosaics. The four largest areas are CL1 Northumberland (795 hectares), CL22 Durham (660 hectares), CL26 Cumbria (520 hectares) and CL38 Durham (430 hectares). Associated descriptive statistics are: mode – 0.2 hectares, lower quartile – 1.5 hectares, median – 8.05 hectares, and upper quartile – 33.4 hectares.

Figure A21 shows the distribution of commons with dry acidic heath mosaic. It highlights concentrations of commons in Cumbria and the Pennines, Dartmoor and Surrey.

**Wet heath/acidic grassland mosaic (D6)**

Wet heath/acidic grassland mosaic is to be found on 73 commons. This habitat type covers a total area of 1680 hectares. Table A8 confirms that this particular habitat is highly localised in distribution, with 78% of the total area being recorded in three counties – Cumbria (726 hectares), Cornwall (370 hectares) and Somerset (220 hectares).

The majority of commons have areas less than five hectares, but the overall mean is 23 hectares. Summary descriptive statistics for the category are: mode – 5 hectares, Lower Quartile – 2.0 hectares, Median – 10.45 hectares, and upper quartile – 68.0 hectares. Three commons have areas of wet heath/acidic grassland mosaic in excess of 125 hectares – CL28 Cumbria (173 hectares), CL10 Somerset (161 hectares) and CL110 Cumbria (139 hectares).

Figure A22 shows the geographical distribution of D6 commons. They are seen to be mainly located in the uplands of the north, mainly in Cumbria, and in the South-West.

## Mire (E)

The survey identified 608 commons with one or more mire habitats. In total the various sub-categories of this habitat type cover 79452 hectares and account for 21% of the common land area. Table A10 indicates that mire habitats are particularly prominent on commons in the counties of North Yorkshire (24605 hectares), Cumbria (22042 hectares) and Durham (10474 hectares). These areas account for 72% of the total area of mire habitats in England. Five very large areas, all with over 3000 hectares classed as mire are: CL164 Devon (6300 hectares), CL1 Northumberland (4064 hectares), CL81 Cumbria (3775 hectares), CL1001 Durham (3345 hectares) and CL43 North Yorkshire (3173 hectares). The 608 commons with mire habitats have an overall mean area of 130.7 hectares. However the distribution of habitat sizes is strongly skewed and the majority of commons have areas of less than 15 hectares. This is evident from associated descriptive statistics: mode – 0.1 hectares, lower quartile – 2.1 hectares, median – 14.9 hectares, and upper quartile – 74.3 hectares.

Figure A23 shows the distribution of category E commons. The clusters of commons in central Cumbria, the Pennines, Dartmoor and Bodmin Moor are strongly highlighted. Throughout the rest of England the habitat type is singularly absent.

Table A11 indicates that of the various sub-categories within the broad mire habitat type, the two most prominent are blanket and dry modified bogs. These account for nearly 80% of category E.

The distribution of the various sub-categories of mire habitats, together with associated statistics and maps, are described below.

Table A11

| Habitat Type | Number of Commons | Area (Hectares) | % Area |
|---|---|---|---|
| E161 Blanket Bog | 151 | 39343.3 | 49.5 |
| E162 Raised Bog | 24 | 1964.6 | 2.5 |
| E17 Bog : Wet Modified | 55 | 1610.9 | 2.0 |
| E18 Bog : Dry Modified | 221 | 23973.5 | 30.2 |
| E21 Flush/Spring : Acid/Neutral | 397 | 7517.0 | 9.5 |
| E22 Flush/Spring : Basic | 32 | 70.5 | 0.1 |
| E23 Flush/Spring Bryophyte Dominant | 4 | 3.4 | 0.0 |
| E31 Fen : Valley Mire | 165 | 4055.0 | 5.1 |
| E32 Fen : Basin Mire | 39 | 225.3 | 0.3 |
| E33 Fen-flood plain | 1 | 3.4 | 0.0 |
| E4 Bare Peat | 56 | 685.8 | 0.9 |
| E Mire | 608 | 79452.5 | |

**Blanket Bog (E161)**

Blanket bog is the most extensive of the mire types. It covers 39343 hectares and is found on 151 commons. Table A10 and Figure A24 confirm the strong presence of such habitats on numerous commons in the north of England, most notably in central Cumbria, and western parts of North Yorkshire and Durham. Here there are some extremely large expanses of blanket bog, in excess of 2500 hectares. Descriptive statistics indicate that although more than half of the commons have less than 50 hectares of blanket bog, a quarter have areas greater than 223 hectares - mode – 0.5 hectares, lower quartile – 8.9 hectares, median – 49.0 hectares, and upper quartile – 223.3 hectares.

**Raised Bog (E162)**

Raised bog habitats were identified on just 24 commons and have a total area of 1964 hectares. Significantly, over half of this area is accounted for by CL386 South Yorkshire (1004 hectares). Two other large areas are to be found on CL313 (592 hectares) and CL27 (136 hectares) in Cumbria. Descriptive statistics for the category are : mode – 0.02 hectares, lower quartile – 2.6 hectares, median – 10.9 hectares, and upper quartile – 26.2 hectares. Figure A25 shows the distribution of the 24 category E162 commons.

**Bog : Wet Modified (E17)**

Wet modified bog occurs on 55 commons and covers 1610 hectares. Half of this area is to be found in Devon (809 hectares), with a further 366 hectares being recorded for commons in West Yorkshire. The mean area for this habitat is 29.3 hectares. Associated descriptive statistics are: mode – 4.0 hectares, Lower Quartile – 1.8 hectares, median – 6.3 hectares, and upper quartile – 32.5 hectares. Five commons have over 100 hectares of wet modified bog – CL161 Devon (244 hectares), CL674 Greater Manchester (155 hectares), CL112 Devon (140 hectares), CL427 West Yorkshire (125 hectares) and CL164 Devon (108 hectares).

Figure A26 shows the geographical distribution of E17 commons. Two distinctive clusters are highlighted; the one focussing on the border between West Yorkshire and Greater Manchester (including south-eastern parts of Lancashire), and the other centred on Dartmoor.

**Bog : Dry Modified (E18)**

Dry modified bog occurs on 221 commons and covers an area of 23973 hectares. Five counties record significant expanses of this particular habitat type – North Yorkshire (12660 hectares), West Yorkshire (3162 hectares), Cumbria (2765 hectares) and Durham (2405 hectares). Four commons, all located in North Yorkshire, have over 900 hectares of dry modified bog are: CL17 (1800 hectares), CL149 (1373 hectares), CL118 (930 hectares) and CL152 (918 hectares). The mean area for all commons is 108 hectares, with the following associated descriptive statistics: mode – 25 hectares,

lower quartile – 6.8 hectares, median – 22.8 hectares, and upper quartile – 117.5 hectares.

Figure A27 shows the geographical distribution of E18 commons. The pattern is highly distinctive, with virtually all commons being concentrated along the main axis of the Pennines.

**Flush/Spring : Acid/Neutral (E21)**

This habitat is encountered on 397 commons and covers a total area of 7517 hectares. Commons with this habitat type are mainly to be found in the counties of Cumbria (2704 hectares), North Yorkshire (1570 hectares), Durham (1537 hectares) and Northumberland (867 hectares). These counties alone claim 89% of the total area of acid/neutral fulshes/springs (Table A10). Figure A28 shows that the great majority of commons are located in central Cumbria and across the whole of the Pennines. Although notable clusters are to be seen in eastern parts of Lancashire and in Devon the areas concerned are relatively small in size. Four commons have over 200 hectares under this particular habitat type – CL1 Northumberland (640 hectares), CL38 Durham (600 hectares), CL6 Durham (250 hectares) and CL29 Cumbria (204 hectares). The range of habitat sizes is summarised in associated descriptive statistics: mode – 0.1 hectares, lower quartile – 0.7 hectares, median – 3.4 hectares, and upper quartile – 15.0 hectares. The mean area is 18.9 hectares.

**Flush/Spring : Basic (E22)**

This habitat type occurs on just 32 commons and covers a very small area – 77 hectares. Most of this is to be found in Cumbria (49 hectares). The geographical distribution of these commons is displayed in Figure A29. Descriptive statistics for the category are: mode – 2 hectares, lower quartile – 0.3 hectares, median – 1.9 hectares, and upper quartile – 3.6 hectares. The overall mean is 2.2 hectares.

**Flush/Spring : Bryophyte Dominant (E23)**

This habitat type was identified on only 4 commons – CL7 Somerset (1.9 hectares), CL98 Cumbria (1.12 hectares), CL14 Humberside (0.20 hectares) and CL105 Cumbria (0.1 hectares).

**Fen : Valley Mire (E31)**

Fen (Valley Mire) occurs on 165 commons and covers 4054 hectares. The major part of this area is to be found Devon (1518 hectares) and Cumbria (1187 hectares). Figure A30 indicates that the commons concerned are in central Cumbria and on Dartmoor and Bodmin Moor. Commons with the four largest expanses of fen (valley mire) are CL164 Devon (629 hectares), CL134 Devon (264 hectares), CL69 Cumbria (175 hectares) and CL172 Cumbria (172 hectares). The mean area for the category is 24.6 hectares, with associated descriptive statistics as follows: mode – 1.2 hectares,

lower quartile – 1.9 hectares, median – 8.6 hectares, and upper quartile – 26.25 hectares.

**Fen : Basin Mire (E32)**

Fen (basin mire) habitats were recorded on 39 commons and cover just 225 hectares. The geographical distribution is highly localised with nearly 87% of the area being found in Cumbria (195 hectares). The mean size of fen (basin mire) habitats is 5.8 hectares. Associated descriptive statistics are: mode – 0.3 hectares, lower quartile – 1.2 hectares, median – 2.5 hectares, and upper quartile – 8.6 hectares.

**Fen-flood plain (E33)**

Only one common was identified with this particular habitat – CL53 Somerset (3.38 hectares).

**Bare Peat (E4)**

Bare peat occurs on 56 commons and covers 686 hectares. Three counties account for 76% of this area – South Yorkshire (197 hectares), West Yorkshire (137 hectares) and Greater Manchester (137 hectares). The highly localised nature of the distribution is displayed in Figure A31. The mean size of these bare peat habitats is 12 hectares, with associated descriptive measures being : mode – 1.0 hectares, lower quartile – 1.0 hectares, median – 2.1 hectares, and upper quartile – 7.4 hectares. The three largest areas are CL386 South Yorkshire, CL674 Greater Manchester (105 hectares) and CL39 West Yorkshire.

## Swamp, Marginal and Inundation Habitats (F)

This broad habitat type is found on 162 commons and covers a total of 235 hectares. Table A12 indicates that the greatest proportion of this area is located in Norfolk (110 hectares) and Suffolk (31 hectares). Figure A32 shows that commons with this habitat are quite dispersed in distribution, but with a clear concentration in the county of Norfolk. The average size of habitats on associated commons is 1.5 hectares with a median of 0.4 hectares.

The distribution of the various sub-categories of swamp, marginal and inundation habitats, together with associated statistics and maps, are described below.

Table A13

| Habitat Type | Number of Commons | Area (Hectares) | % Area |
|---|---|---|---|
| F1 Swamp | 124 | 206.3 | 87.5 |
| F21 Marginal | 39 | 20.4 | 8.6 |
| F22 Inundation | 15 | 9.2 | 3.9 |
| F Swamp etc. | 162 | 235.9 | |

### Swamp (F1)

Swamp accounts for 87% of the total area in this broad habitat category (Table A13) and in distribution inevitably mirrors that described above for all F type commons. The average area of swamp on the 124 commons concerned is 1.7 hectares, with a median of 0.5 hectares.

### Marginal (F21)

The 39 commons with habitats described as ‘marginal’ cover just 20.4 hectares. Table A12 shows that small areas are found in a number of counties, with highest figures being returned for North Yorkshire and Hampshire. The mean area is 0.5 hectares and the median 0.2 hectares.

### Inundation (F22)

Just 15 commons have habitats classed as ‘inundation’. They cover just 9 hectares and are dispersed across a number of counties (Table A12).

## Open Water (G)

Open water habitats were identified on 671 commons. The areas concerned cover over 1744 hectares (Tables A12 and A14). Such habitats are found in most counties, but by far the most extensive areas are in Cumbria (852 hectares). While the habitats concerned are generally very small, with a mean of 2.6 hectares and a median of 0.2 hectares, it is noteworthy that three commons have relatively extensive areas – CL157 Cumbria (437 hectares), CL153 West Sussex (283 hectares) and CL81 Cumbria (115 hectares). Figure A33 shows the very widespread geographical distribution of commons with open water habitats. Particularly dense concentrations of commons are evident in Surrey, Buckinghamshire and Hertfordshire.

The distribution of the various sub-categories of open water, together with associated statistics, are described below.

Table A14

| Habitat Type | Number of Commons | Area (Hectares) | % Area |
|---|---|---|---|
| G1 Standing Water | 575 | 1256.8 | 72.1 |
| G2 Running Water | 112 | 487.8 | 28.0 |
| G Open water | 671 | 1744.6 | |

### Standing Water (G1)

Habitats of standing water occur on 575 commons and cover 1257 hectares. Table 19 indicates that some two-thirds of this area is located in the county of Cumbria (831 hectares). The main areas here are the part of Lake Ullswater that lies within CL157, and the various tarns to be found across the Appleby Fells (CL81). Most areas of standing water are very small, half being less than 0.15 hectares.

### Running Water (G2)

Habitats with running water occur on 112 commons. Together they cover 487 hectares. The mean area for such habitats is 4.3, but this figure is significantly inflated by the 283 hectares recorded for areas of running water within Chichester Harbour (283 hectares).

## Coastland (H)

This habitat category characterises 102 commons with coastal locations, and claims a total area of 6591 hectares. Table A15 indicates that three counties have the largest areas of coastland habitats – Norfolk (2036 hectares), Lancashire (1718 hectares) and Cumbria (1418 hectares). They claim 78% of the total coastland area.

Within the coastland category a wide range of sub-categories are identified but the majority involve only small numbers of commons (Table A16). Of the various sub-categories two have associated areas in excess of 2000 hectares. These are H11 (Intertidal, mud/sand) with 44 commons and an area of 2819 hectares, and H26 (Saltmarsh, dense/continuous) with 54 commons and an area of 2541 hectares. Together they account for 81% of the coastland category.

The four largest areas of intertidal mud/sand (H11) are CL65 Norfolk (810 hectares), CL160 Lancashire (605 hectares), CL153 West Sussex (464 hectares) and CL264 Lancashire (233 hectares). As far as saltmarsh habitats are concerned the three largest areas are CL26 Cumbria (446 hectares), CL65 Norfolk (336 hectares) and CL45 Lancashire (306 hectares).

Of the remaining coastland habitat types all but one (H68) have areas of less than 200 hectares (Table A16).

Table A16

| Habitat Type | Number of Commons | Area (Hectares) | % Area |
|---|---|---|---|
| H11 Intertidal Mud/Sand | 44 | 2818.6 | 42.8 |
| H12 Intertidal Shingle | 8 | 44.7 | 0.7 |
| H13 Intertidal Rocks | 6 | 32.6 | 0.5 |
| H23 Saltmarsh /Dunes | 4 | 5.7 | 0.1 |
| H24 Saltmarsh/Plants | 11 | 35.4 | 0.5 |
| H26 Saltmarsh/Continuous | 54 | 2540.9 | 38.6 |
| H3 Shingle | 15 | 128.1 | 1.9 |
| H4 Rock/Boulders | 8 | 26.9 | 0.4 |
| H5Strandline Vegetation | 7 | 2.9 | 0.0 |
| H64 Sand Dune/Slack | 5 | 59.3 | 0.9 |
| H65 Sand Dune/grassland | 14 | 174.1 | 2.6 |
| H66 Dune Heath | 4 | 49.6 | 0.8 |
| H67 Dune Scrub | 2 | 0.8 | 0.0 |
| H68 Dune Open | 24 | 386.6 | 5.9 |
| H81 Maritime Cliff Hard | 11 | 84.6 | 1.3 |
| H82 Maritime Cliff Soft | 2 | 14.4 | 0.2 |
| H83 Crevice/ledge vegetation | 2 | 0.4 | 0.0 |
| H84 Coastal/maritime grassland | 32 | 171.3 | 2.6 |
| H85 Coastal heathland | 3 | 14.0 | 0.2 |
| H Coastland | 102 | 6591 | |

Figure A34 shows the distribution of commons with coastland habitats. The pattern highlights the clusters of commons along the coast of Cumbria, around the Wash in Norfolk, and along the coast of Cornwall.

## Rock Exposure and Waste (I)

Habitats classed as rock exposure and waste occur on 361 commons and cover 12993 hectares. They account for approximately 3% of the total area of common land in England. Table A17 indicates that commons in Cumbria have by far the largest area within this broad habitat category (10439 hectares). Figure A35 shows the distribution of commons with category I habitats and highlights distinct concentrations in central parts of Cumbria, in the Pennines and on Dartmoor. Seven commons have areas of rock exposure and waste of 500 hectares or more – CL29 (1460 hectares), CL11 (900 hectares), CL58 (600 hectares), CL75 (575 hectares), CL26 (504 hectares) and CL78 (500 hectares) in Cumbria, and CL190 (673 hectares) in Devon. For the set of commons as a whole the mean aggregated area of the various habitats within this category is 36 hectares. The very skewed nature of the distribution is however evident from associated descriptive statistics: mode – 0.1 hectares, lower quartile – 0.43 hectares, median – 2.76 hectares, and upper quartile – 13.8 hectares.

Table A18 indicates that habitat type I141 (Natural Rock Exposure –Acidic/Neutral) accounts for 57% of the category, with a total area of 7409 hectares on 181 commons. Some 85% of this area is associated with commons in Cumbria (7060 hectares). The next largest area is that classified as 'acid/neutral scree' (I121). This habitat type covers 2691 hectares and is again largely to be found on commons in Cumbria. In total there are 119 commons with what are termed 'artifical' exposures and wastes – these include quarries (I21), spoil (I22), mines (I23) and refuse tips (I24). The majority of these commons are to be found in more northern, western and upland locations.

Thirty commons were recorded as having 'limestone pavements' (I13). As Figure A36 and Table A17 reveal the areas concerned (747 hectares) are wholly in Cumbria and North Yorkshire.

Table A18

| Habitat Type | Number of Commons | Area (Hectares) | % Area |
|---|---|---|---|
| I111 Inland Cliff - Acid/Neutral | 8 | 2.7 | 0.0 |
| I112 Inland Cliff - Basic | 6 | 3.2 | 0.0 |
| I121 Scree – Acid/Neutral | 70 | 2691.5 | 20.7 |
| I122 Scree – Basic | 15 | 83.7 | 0.6 |
| I13 Limestone pavement | 30 | 746.9 | 5.8 |
| I141 Other Exposure - Acidic/Neutral | 181 | 7408.6 | 57.0 |
| I142 Other Exposure - Basic | 49 | 408.3 | 3.1 |
| I21 Artificial - Quarry | 75 | 433.0 | 3.3 |
| I22 Artificial - Spoil | 46 | 1192.1 | 9.2 |
| I23 Artificial - Mine | 1 | 1.5 | 0.0 |
| I24 Artifical – refuse tip | 9 | 21.6 | 0.2 |
| I Rock Exposure and Waste | 361 | 12993.1 | |

## Anthropogenic (J)

While a significant number of the commons surveyed (1742) have what might be termed 'anthropogenic' habitats, the areas concerned are relatively small. The category as a whole covers nearly 6000 hectares. Table A19 confirms that the largest areas of such habitats are to be found in the counties of Surrey and Greater London. However, as is evident from Figure A37, commons with anthropogenic habitats are actually very widespread in their distribution. That said, strong concentrations of commons are to be seen in south-eastern Oxfordshire, Buckinghamshire, Hertfordshire, Greater London, Surrey and north-western parts of West Sussex.

Within the broad category of anthropogenic habitats three types claim 87% of the total area (Table A20). These are amenity grasslands (J12) – 1901 hectares, miscellaneous habitats (J5) – 1758 hectares, and arable lands (J11) – 1558 hectares. Table A19 indicates that the main areas of amenity grasslands are in Greater London and Surrey, while arable lands figure most prominently on commons in Essex, Cheshire and Hertfordshire. Bare ground (J4) features on 581 commons.

Table A20

| Habitat Type | Number of Commons | Area (Hectares) | % Area |
|---|---|---|---|
| J11 Arable | 121 | 1558.5 | 26.0 |
| J12 Amenity grassland | 457 | 1901.8 | 31.7 |
| J13 Cultivated - ephemeral | 28 | 52.1 | 0.9 |
| J14 Introduced Shrub | 13 | 5.7 | 0.1 |
| J21 Hedges - Intact | 51 | 15.2 | 0.3 |
| J22 Hedges - Defunct | 10 | 2.9 | 0.1 |
| J23 Hedges – With trees | 16 | 7.8 | 0.1 |
| J26 Dry Ditch | 3 | 0.5 | 0.0 |
| J31 Industrial estate | 1 | 2.5 | 0.0 |
| J32 Military building | 2 | 18.2 | 0.3 |
| J33 Domestic building | 20 | 20.9 | 0.4 |
| J34 Caravan Site | 5 | 15.2 | 0.3 |
| J35 Seawall | 3 | 4.1 | 0.1 |
| J36 Buildings | 118 | 88.7 | 1.5 |
| J4 Bare Ground | 581 | 547.3 | 9.1 |
| J5 Other Habitats | 1165 | 1757.7 | 29.3 |
| J Anthropogenic | 1742 | 5999.3 | |

**Habitat Types : A Synthesis**

Having summarised the defining features of each of the main Phase 1 habitat types identified in the biological survey of commons – numbers, areas and geographical distributions – it is appropriate at this point to bring the diffuse set of data together and to attempt a synthesis of the principal findings.

To this end, Tables A21 and A22 list the various habitats in descending order according to total area covered and according to the numbers of commons on which the habitat concerned are present. As is to be expected the two offer different rankings. Figure A38 and Figure A39 chart the relative significance of the first ten most dominant habitats for each of these tabulations.

In terms of area three habitat types account for just over half of all common land. These are unimproved acid grasslands (B11), acid dry dwarf shrub heath (D11) and blanket bog (E161). Bracken (C11) and dry modified bog (E18) also figure quite prominently. As has been demonstrated these habitats cover large expanses, mainly in upland regions. If reference is made to numbers of commons then the dominant categories are broadleaved woodlands (A111) and dense scrub (A21).

Table A21

Habitats Types : Ranked According to Area

| Habitat Types | Area (Hectares) | % Area |
|---|---|---|
| B11 Acidic Grassland : Unimproved | 86354.6 | 23.2 |
| D11 Dry Dwarf Shrub Heath : Acidic | 62821.0 | 16.9 |
| E161 Blanket Bog | 39343.3 | 10.6 |
| C11 Bracken : Continuous | 26350.1 | 7.1 |
| E18 Bog : Dry Modified | 23973.5 | 6.4 |
| A111 Broad-leaved Semi-natural Woodland | 15252.0 | 4.1 |
| B5 Marsh/Marshy Grassland | 13521.0 | 3.6 |
| D2 Wet Dwarf Shrub Heath | 12591.6 | 3.4 |
| D5 Dry Heath Acidic Mosaic | 11192.2 | 3.0 |
| E21 Flush/Spring : Acid/Neutral | 7517.0 | 2.0 |
| I141 Other Exposure - Acidic/Neutral | 7408.6 | 2.0 |
| B22 Neutral Grassland : Semi-Improved | 5532.4 | 1.5 |
| A21 Dense Scrub | 4384.6 | 1.2 |
| B4 Improved Grassland | 4200.3 | 1.1 |
| E31 Fen : Valley Mire | 4055.0 | 1.1 |
| B31 Calcareous Grassland Unimproved | 3279.1 | 0.9 |
| H11 Intertidal Mud/Sand | 2818.6 | 0.8 |
| I121 Scree – Acid/Neutral | 2691.5 | 0.7 |
| H26 Saltmarsh/Continuous | 2540.9 | 0.7 |
| B12 Acidic Grassland : Semi-improved | 2333.8 | 0.6 |
| A131 Mixed Semi-natural | 2256.3 | 0.6 |
| A122 Coniferous Plantation | 2164.8 | 0.6 |

| | | |
|---|---|---|
| B21 Neutral Grassland : Unimproved | 2150.8 | 0.6 |
| A22 Scatttered Scrub | 2064.9 | 0.6 |
| C12 Bracken : Scattered | 2019.0 | 0.5 |
| E162 Raised Bog | 1964.6 | 0.5 |
| J12 Amenity grassland | 1901.8 | 0.5 |
| J5 Other Habitats | 1757.7 | 0.5 |
| D6 Wet heath/acidic grassland mosaic | 1680.0 | 0.5 |
| E17 Bog : Wet Modified | 1610.9 | 0.4 |
| J11 Arable | 1558.5 | 0.4 |
| B6 Poor Semi-Improved Grassland | 1531.7 | 0.4 |
| G1 Standing Water | 1256.8 | 0.3 |
| I22 Artificial - Spoil | 1192.1 | 0.3 |
| A3 Parkland scattered trees | 983.8 | 0.3 |
| I13 Limestone pavement | 746.9 | 0.2 |
| E4 Bare Peat | 685.8 | 0.2 |
| J4 Bare Ground | 547.3 | 0.1 |
| G2 Running Water | 487.8 | 0.1 |
| A121 Coniferous Semi-natural | 465.9 | 0.1 |
| B32 Calcareous Grassland Semi-improved | 452.0 | 0.1 |
| I21 Artificial - Quarry | 433.0 | 0.1 |
| I142 Other Exposure - Basic | 408.3 | 0.1 |
| D3 Lichen/Bryophyte Heath | 397.9 | 0.1 |
| H68 Dune Open | 386.6 | 0.1 |
| A132 Mixed Plantation | 367.7 | 0.1 |
| C31 Other : Tall Ruderal | 360.2 | 0.1 |
| A112 Broad-leaved Plantation | 245.3 | 0.1 |
| E32 Fen : Basin Mire | 225.3 | 0.1 |
| F1 Swamp | 206.3 | 0.1 |
| H65 Sand Dune/grassland | 174.1 | 0.0 |
| H84 Coastal/maritime grassland | 171.3 | 0.0 |
| H3 Shingle | 128.1 | 0.0 |
| J36 Buildings | 88.7 | 0.0 |
| H81 Maritime Cliff Hard | 84.6 | 0.0 |
| I122 Scree – Basic | 83.7 | 0.0 |
| A4 Recently-felled | 77.1 | 0.0 |
| E22 Flush/Spring : Basic | 70.5 | 0.0 |
| H64 Sand Dune/Slack | 59.3 | 0.0 |
| C22 Upland Species-rich ledges | 56.3 | 0.0 |
| J13 Cultivated - ephemeral | 52.1 | 0.0 |
| H66 Dune Heath | 49.6 | 0.0 |
| D12 Dry Dwarf Shrub Heath : Basic | 46.8 | 0.0 |
| H12 Intertidal Shingle | 44.7 | 0.0 |
| H24 Saltmarsh/Plants | 35.4 | 0.0 |
| H13 Intertidal Rocks | 32.6 | 0.0 |
| H4 Rock/Boulders | 26.9 | 0.0 |
| I24 Artifical – refuse tip | 21.6 | 0.0 |
| J33 Domestic building | 20.9 | 0.0 |
| F21 Marginal | 20.4 | 0.0 |
| J32 Military building | 18.2 | 0.0 |
| J21 Hedges - Intact | 15.2 | 0.0 |
| J34 Caravan Site | 15.2 | 0.0 |
| H82 Maritime Cliff Soft | 14.4 | 0.0 |
| H85 Coastal heathland | 14.0 | 0.0 |
| F22 Inundation | 9.2 | 0.0 |
| J23 Hedges – With trees | 7.8 | 0.0 |

| | | |
|---|---|---|
| H23 Saltmarsh /Dunes | 5.7 | 0.0 |
| J14 Introduced Shrub | 5.7 | 0.0 |
| J35 Seawall | 4.1 | 0.0 |
| E33 Fen-flood plain | 3.4 | 0.0 |
| E23 Flush/Spring Bryophyte Dominant | 3.4 | 0.0 |
| I112 Inland Cliff - Basic | 3.2 | 0.0 |
| J22 Hedges - Defunct | 2.9 | 0.0 |
| H5 Strandline Vegetation | 2.9 | 0.0 |
| I111 Inland Cliff - Acid/Neutral | 2.7 | 0.0 |
| J31 Industrial estate | 2.5 | 0.0 |
| I23 Artificial - Mine | 1.5 | 0.0 |
| C32 Other : Non-ruderal | 1.4 | 0.0 |
| H67 Dune Scrub | 0.8 | 0.0 |
| J26 Dry Ditch | 0.5 | 0.0 |
| H83 Crevice/ledge vegetation | 0.4 | 0.0 |

Table A21

Habitat Types Ranked According to Numbers of Commons with Specified Habitat Types

| Habitat Types | Area (Hectares) | % Commons Surveyed |
|---|---|---|
| A111 Broad-leaved Semi-natural Woodland | 1490 | 44.0 |
| A21 Dense Scrub | 1302 | 38.4 |
| J5 Other Habitats | 1165 | 34.4 |
| B22 Neutral Grassland : Semi-Improved | 938 | 27.7 |
| C11 Bracken : Continuous | 925 | 27.3 |
| B11 Acidic Grassland : Unimproved | 851 | 25.1 |
| A22 Scatttered Scrub | 839 | 24.8 |
| C31 Other : Tall Ruderal | 664 | 19.6 |
| A3 Parkland scattered trees | 653 | 19.3 |
| B5 Marsh/Marshy Grassland | 635 | 18.7 |
| D11 Dry Dwarf Shrub Heath : Acidic | 627 | 18.5 |
| J4 Bare Ground | 581 | 17.1 |
| G1 Standing Water | 575 | 17.0 |
| B4 Improved Grassland | 514 | 15.2 |
| B21 Neutral Grassland : Unimproved | 468 | 13.8 |
| J12 Amenity grassland | 457 | 13.5 |
| E21 Flush/Spring : Acid/Neutral | 397 | 11.7 |
| B12 Acidic Grassland : Semi-improved | 356 | 10.5 |
| D2 Wet Dwarf Shrub Heath | 335 | 9.9 |
| D5 Dry Heath Acidic Mosaic | 332 | 9.8 |
| B6 Poor Semi-Improved Grassland | 305 | 9.0 |
| C12 Bracken : Scattered | 292 | 8.6 |
| B31 Calcareous Grassland Unimproved | 226 | 6.7 |
| E18 Bog : Dry Modified | 221 | 6.5 |
| I141 Other Exposure - Acidic/Neutral | 181 | 5.3 |
| A131 Mixed Semi-natural | 168 | 5.0 |
| E31 Fen : Valley Mire | 165 | 4.9 |
| E161 Blanket Bog | 151 | 4.5 |
| A122 Coniferous Plantation | 150 | 4.4 |
| F1 Swamp | 124 | 3.7 |
| A112 Broad-leaved Plantation | 123 | 3.6 |
| J11 Arable | 121 | 3.6 |
| J36 Buildings | 118 | 3.5 |
| G2 Running Water | 112 | 3.3 |
| I21 Artificial - Quarry | 75 | 2.2 |
| D6 Wet heath/acidic grassland mosaic | 73 | 2.2 |
| B32 Calcareous Grassland Semi-improved | 73 | 2.2 |
| I121 Scree – Acid/Neutral | 70 | 2.1 |
| A132 Mixed Plantation | 69 | 2.0 |
| A121 Coniferous Semi-natural | 65 | 1.9 |
| E4 Bare Peat | 56 | 1.7 |
| E17 Bog : Wet Modified | 55 | 1.6 |
| H26 Saltmarsh/Continuous | 54 | 1.6 |
| J21 Hedges - Intact | 51 | 1.5 |
| I142 Other Exposure - Basic | 49 | 1.4 |

| | | |
|---|---|---|
| I22 Artificial - Spoil | 46 | 1.4 |
| H11 Intertidal Mud/Sand | 44 | 1.3 |
| E32 Fen : Basin Mire | 39 | 1.2 |
| F21 Marginal | 39 | 1.2 |
| H84 Coastal/maritime grassland | 32 | 0.9 |
| E22 Flush/Spring : Basic | 32 | 0.9 |
| I13 Limestone pavement | 30 | 0.9 |
| J13 Cultivated - ephemeral | 28 | 0.8 |
| E162 Raised Bog | 24 | 0.7 |
| H68 Dune Open | 24 | 0.7 |
| A4 Recently-felled | 21 | 0.6 |
| J33 Domestic building | 20 | 0.6 |
| J23 Hedges – With trees | 16 | 0.5 |
| H3 Shingle | 15 | 0.4 |
| I122 Scree – Basic | 15 | 0.4 |
| F22 Inundation | 15 | 0.4 |
| H65 Sand Dune/grassland | 14 | 0.4 |
| J14 Introduced Shrub | 13 | 0.4 |
| D3 Lichen/Bryophyte Heath | 11 | 0.3 |
| H81 Maritime Cliff Hard | 11 | 0.3 |
| H24 Saltmarsh/Plants | 11 | 0.3 |
| J22 Hedges - Defunct | 10 | 0.3 |
| I24 Artifical – refuse tip | 9 | 0.3 |
| H12 Intertidal Shingle | 8 | 0.2 |
| H4 Rock/Boulders | 8 | 0.2 |
| I111 Inland Cliff - Acid/Neutral | 8 | 0.2 |
| H5Strandline Vegetation | 7 | 0.2 |
| H13 Intertidal Rocks | 6 | 0.2 |
| I112 Inland Cliff - Basic | 6 | 0.2 |
| H64 Sand Dune/Slack | 5 | 0.1 |
| D12 Dry Dwarf Shrub Heath : Basic | 5 | 0.1 |
| J34 Caravan Site | 5 | 0.1 |
| C32 Other : Non-ruderal | 5 | 0.1 |
| H66 Dune Heath | 4 | 0.1 |
| H23 Saltmarsh /Dunes | 4 | 0.1 |
| E23 Flush/Spring Bryophyte Dominant | 4 | 0.1 |
| H85 Coastal heathland | 3 | 0.1 |
| J35 Seawall | 3 | 0.1 |
| J26 Dry Ditch | 3 | 0.1 |
| C22 Upland Species-rich ledges | 2 | 0.1 |
| J32 Military building | 2 | 0.1 |
| H82 Maritime Cliff Soft | 2 | 0.1 |
| H67 Dune Scrub | 2 | 0.1 |
| H83 Crevice/ledge vegetation | 2 | 0.1 |
| E33 Fen-flood plain | 1 | 0.0 |
| J31 Industrial estate | 1 | 0.0 |
| I23 Artificial - Mine | 1 | 0.0 |

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