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An inventory of lowland raised bogs in Great Britain

Richard Lindsay & Philip Immirzi

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FOREWORD

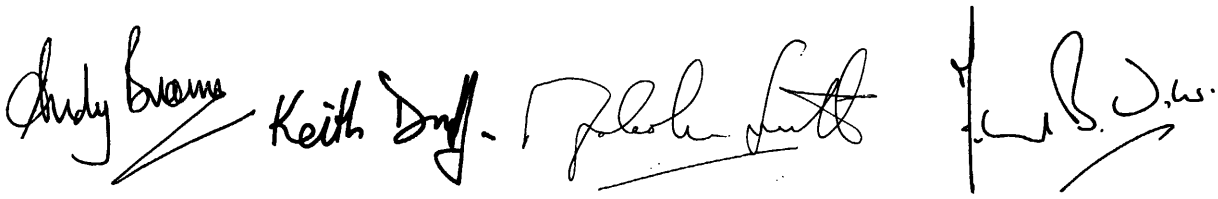
Lowland raised bogs are amongst the most threatened and uncommon habitats in Great Britain. During the 1980s there was considerable uncertainty over the precise extent and condition of these habitats and this made it difficult to ensure the conservation and wise use of raised bogs.

This report provides an inventory of lowland raised bogs in Great Britain. It gives a synthesis of information on the condition and conservation status of known lowland raised bogs by providing a general assessment of land cover. It also records whether the bogs are Sites of Special Scientific Interest (SSSI) or National Nature Reserves (NNR). The report quantifies the extent of peatlands of all types in Britain in order to set the raised bog resource into its broader peatland context.

The inventory was begun as the National Peatland Resource Inventory (NPRI) by the former Nature Conservancy Council (NCC). Its aim was to enable the NCC to execute its statutory duties in relation to the conservation of peatland ecosystems. The functions of the NCC have now been passed to Scottish Natural Heritage (SNH), English Nature (EN), and the Countryside Council for Wales (CCW). SNH assumed responsibility for the continued development of the lowland raised bogs inventory.

The inventory is currently housed within the Research and Advisory Services Directorate of SNH. As further work is carried out in each country, their conservation agencies will add information to this inventory in order that it can be used to conserve and manage lowland raised bogs, throughout Great Britain. These data will be essential so that the United Kingdom can achieve the targets set out in the UK's Biodiversity Action Plan, as well as for managing peatland sites of European importance designated in response to the EC Habitats Directive.

We therefore commend this inventory as an important contribution to biodiversity conservation, not only in the United Kingdom but also within the European Union.



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The Geographical Information System (GIS) database was set up by Terry Rowell (formerly NCC) and subsequently managed first by Ylva Fanden-Lilja with Ros Nicholls (formerly NCC) and later by Eliane Reid (SNH). The GIS data were transferred to, and established on, the workstation GIS system by Stuart Gillies (SNH). Field work was carried out by Fiona Everingham, Penny Mayer and Sarah Ross (SNH).

The first consultation draft was very widely circulated and attracted many useful comments and additions. Too many people responded to make it possible to thank them all by name; suffice to say that their contributions eased enormously the task of preparing this final document. We are indebted to them all and hope we have been able to do justice to their criticisms. Consultees have included:

Countryside Council for Wales
Department of Environment (Minerals)
English Nature
Peat Producers Association
Plantlife
Royal Society for the Protection of Birds
Royal Society for Nature Conservation
Scottish Office - Rural Affairs Division (now Scottish Office Agriculture, Environment and Fisheries Department)
Scottish Wildlife Trust

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Richard Lindsay and Philip Immirzi
May 1996

1. SUMMARY

1. Lowland raised bogs are the focus of this report, which brings to a close the National Peatland Resource Inventory (NPRI) lowland raised bog survey of Great Britain. New sites will continue to be discovered, and individual sites change under management, so that the database will change. However, the information given in this report is based on raw data supplied to the NPRI up to December 1994 and comments received up to January 1996.

2. The lowland raised bog biotopes described in this report are defined as peat-forming systems which develop one or more distinct domes, or lenses of peat, with depths as much as 10 metres above the mineral substratum. Despite being perched many metres above the surrounding landscape these domes of peat remain completely waterlogged. Their water and nutrient supplies are derived solely from precipitation, mainly rainfall, onto the dome. Consequently, these are acidic and extremely nutrient-poor environments. Raised bogs are typically surrounded by farmed or forested environments (mainly intensive arable, grassland or plantation woodlands).

3. The Inventory lists all known existing or former lowland raised bog sites (*i.e.* sites bearing raised bog soils) and provides an estimate of their presumed former extent as recorded by the British Geological Survey. It lists 807 existing and former raised bog sites in Scotland, 218 in England, and 20 in Wales. The total area of land in Great Britain which currently holds, or can be identified as once having held, raised bog habitat is c.69,700ha. This represents just over 4% of the total of all types of peat deposit identified in GB.

4. By comparing raised bog peat deposit and soils information with areas which still support raised bog vegetation, a measure of habitat change can be determined. All raised bogs in Great Britain have changed in some way under human activity. Nevertheless, 141 sites are known to contain some areas of "near-natural" vegetation growing on a "primary" bog surface, and about 3,800 ha of this habitat has been estimated to exist today. Primary near-natural bog vegetation has been recorded as the major land-cover on 56 sites.

5. At the time of this assessment, "near-natural" raised bog represents 5.5% of the former lowland raised bog resource by area, occurring on 13% of known sites. Most of the surviving near-natural vegetation occurs as fragments within raised bog sites which have been degraded to some degree by various land use activities, notably drainage for afforestation or agricultural reclamation, or peat extraction.

6. Agricultural land-claim in England, and afforestation in Scotland, are the major land-uses which have affected the extent and condition of the raised bog. In recent years the scale of impact of these activities has declined considerably, although some sites continue to deteriorate post-development.

7. Sites of Special Scientific Interest (SSSI) embrace 10% of recorded sites (by number). There are 14 National Nature Reserves (NNR) on raised bog sites.

8. This inventory includes known planning permissions for peat extraction on lowland raised bogs current up to December 1994. At least 60 permissions (some consisting of many small permissions have been amalgamated) cover a total of c. 7,000 ha on 45 sites. Not all of these permissions are now active workings, and a number are benefiting from active conservation management.

Summary table of lowland raised bog data for Great Britain

	Former area (ha)	No. of sites	Measured primary natural bog (ha)	No. of sites with primary natural bog	No. of sites with SSSI	No. of sites with planning consent
England	37,694	218	503	16	48	20
Scotland	27,892	807	2,515	116	54	21
Wales	4,078	20	818	8	12	1
Total	69,664	1,045	3,836	140	114	42

2 INTRODUCTION

Peat is formed by the *in-situ* accumulation of undecayed plant material. The term *peatland* refers to any wetland which contains peat, whether or not the natural vegetation and hence the processes of a peat-forming system still survive on the site. A **mire** is a wetland which supports at least some vegetation that is normally peat-forming. In some cases, the terms mire and peatland are synonymous, but when all trace of peat-forming vegetation has been lost, a peatland is no longer a mire. Equally, there are some mires where, despite the presence of species which are normally peat-forming, special circumstances have prevented the accumulation of peat.

In their natural state, peatlands, or more accurately mires, support distinctive assemblages of plants and other wildlife, including many species which depend on mire ecosystems for the major part of their natural distribution. Much of the natural heritage interest is derived from systems which are capable of accumulating peat. Peat accumulates largely because the decay of plant material is inhibited by waterlogging. Conditions which favour the development of a vegetation which is normally peat-forming vary widely in Britain, thereby giving rise to different kinds of mire. Here, a distinction between *fens* and *bogs* is important.

Fen systems are fed by direct precipitation and by water passing through the underlying mineral subsoil, sediments and rock, or by water which drains from the surrounding catchment as surface runoff or as lateral seepage. Thus, for example, fens may occur at the margins of lakes, on river flood plains and where there are springs or seepages. Fen systems may vary from base-rich to base-poor depending upon the soluble cations available from the surrounding and underlying geology, particularly calcium and magnesium. They may also vary from nutrient-rich to nutrient-poor depending on the levels of phosphorus and nitrogen available in solution. Not all fens are peat-forming, particularly where rates of water flow and/or high solute concentrations result in rapid breakdown of organic matter. Some fens may also be the ecological precursors of bog systems.

Under appropriate management, usually involving intensive drainage, fen soils can support productive agricultural systems. Extensive tracts of fenland in Britain, indeed throughout Europe, have been drained for this purpose.

Bog systems are peat-forming mires which are fed by atmospheric precipitation - rainfall, snow, mist and dust alone. During otherwise dry periods (*i.e.* no rainfall), occult precipitation from mist, cloud or low-lying fog may influence the surface water-balance or, alternatively, prevent drought-stress in the main peat-forming species. Analyses of bog-pool waters show solute concentrations reflecting closely the inputs derived from rainfall. Bogs are, by definition, nutrient-poor and acidic, but are differentiated from fens with similar ion balances on the basis of their solute and water sources.

Two main types of bog have been described in Britain - **blanket bog** and **raised bog**. Their geographical distribution reflects regional differences in climate. Lindsay (1995) provided a summary of these two types, and two more restricted forms, together with a synthesis of their ecological characteristics.

In Britain, **lowland raised bogs** typically occur as isolated and slightly elevated features in the landscape, sometimes forming complexes of several "raised" domes of peat, which are hydrologically distinct. They are typically surrounded by highly managed farmed or forested

environments, characteristically intensive arable or grassland farming systems or plantation woodlands. With increasing altitude, latitude and oceanicity, the climate becomes wetter and harsher and conditions become conducive to climatic "paludification" and thus to the widespread development of blanket bog where topography permits. In Dumfries and Galloway, for example, sites above a mere 30m above sea level begin to display many of the characteristics of blanket mire, whereas in more easterly Berwickshire or more southerly North Yorkshire it is possible to identify distinct raised bogs which have formed at altitudes of several hundred metres above sea level. In the far north and west of Britain it is possible to find continuous peat formation down to sea-level. Under such conditions, and similar conditions which are found in the uplands generally, classification becomes extremely complex and the process of site delineation increases in scale (Usher and Thompson 1988; JNCC, 1994; Lindsay 1995; Thompson *et al* 1995). Lowland raised bogs are thus biogeographically and climatically circumscribed.

Several proposals have been made in relation to the classification of domed mires within blanket bog regions. Some authorities assign all areas within a continuous peat mantle to various forms of blanket mire, whereas others recognise "upland" raised bogs within the general mantle of blanket mire. For example, Moen (1985) describes such sites as "Atlantic" raised bogs, while Hulme (1980) has introduced the concept of "confined" and "unconfined" mires[1]. Both authorities agree that it is valuable to identify by coring, whether a site is convex because of the underlying geomorphology or from peat accumulation alone. It is also recognised, however, that for national inventories such determinations will inevitably be restricted to only a few sites, largely those where previous work has been carried out and usually for rather different purposes. The scale of operation required to provide comprehensive surface and bottom profiles for every bog dome within blanket mire landscapes is not feasible. In the absence of such widespread profiling, a pragmatic approach is proposed - that components of a continuous peat mantle be referred to as parts of blanket mire.

Lowland raised bogs can be identified with some certainty. From a nature conservation standpoint, the rationale to treat "confined" raised bogs in the lowlands as distinct from "unconfined" raised bogs in upland blanket mire is strengthened because they differ in a wide range of factors including fauna, flora, biogeographic region, geomorphology, the historical record (or peat "archive") and wider conservation and landscape considerations. From a protection policy perspective there are also important differences in the management and in the nature of the pressures and threats. Consequently the responses by conservation agencies and the management interventions that are necessary to support their conservation differ also.

This report therefore follows the approach adopted by Burton and Hodgson (1987) for England and Wales by considering only lowland "confined" raised bogs[2]. One of the objectives behind the report produced by Burton and Hodgson was the evaluation of agricultural potential for the various peatland units examined. Part of their reasoning for not examining "upland" peats was that agricultural systems in the uplands contrast significantly with those in the lowlands because the environment, particularly the climate, differ so markedly. The definition of "lowland" for the present report is thus not based on altitude alone, but instead acknowledges the traditional definition of "upland" as being land which lies beyond/above the enclosed land (Usher and Thompson 1988).

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[1] For an extended treatment of classification problems and definitions of the terms used, readers may refer to Lindsay 1995.

[2] Largely peat below 200 metres.

A fuller review of these issues can be found in Lindsay (1995).

3 LOWLAND RAISED BOG INVENTORY METHODOLOGY

3.1 Summary

* Mires are natural peatland habitats. A mire ecosystem must exist for peat development to occur. The presence of peat soils can indicate the presence of current or former mire ecosystems. The first stage of the inventory therefore identified as far as possible all areas in Britain which supported peat soils, irrespective of the origin of the peat soil or the present status or condition of vegetation growing on its surface. A wide range of potential data sources was evaluated.

* The British Geological Survey Drift Map series provided the most complete coverage available, with gaps being mainly in the uplands where raised bog as defined by the inventory does not occur. Gaps in coverage were filled from Soil Survey of Scotland maps and other sources.

* Boundaries of all deep peat areas greater than 1m in depth, whether bog or fen, were digitised for computer storage. A high level of accuracy and resolution at 1:50,000 scale was achieved for a large proportion of the land area of Great Britain.

* As far as possible mire types were identified, though data for non-raised bog types was restricted to identification of the broad peat type only (*e.g.* fen or blanket bog).

* For the assessment of lowland raised bogs, in England and Wales the data were checked against soil series information for lowland peats (an analogous comprehensive data set was not available for Scotland) and, for Britain as a whole, against the general geomorphological and physical attributes of lowland raised bog.

* Three classes of lowland raised bog were distinguished based on the condition of the surface:- Primary, Secondary and Archaic.

* A simple classification of the three major surface types was devised. The prevailing condition (the Major Land Cover) and the presumed most important nature conservation condition (the Best Land Cover) were determined for individual sites. The extent of natural and degraded areas was calculated.

* Data on SSSI coverage, NNR status and current planning consents were recorded.

3.2 Mapping of peat soils

A natural peatland ecosystem, or mire, must exist for peat accumulation to take place. The presence of a peat soil is thus associated either with existing mire systems or with areas which, in former times, were peat-forming mires. Given the extent of historical alteration of natural ecosystems many such areas display few, and sometimes no features of an actively peat-forming ecosystem. Thus, arable land on peat soils in the East Anglian Fens, reveals that prior to agricultural land-claim, the area supported an extensive peat-forming ecosystem. Peat soils therefore provide a proxy means by which an assessment of the existing resource and an estimate of the historical mire extent can be made.

3.3 Sources of information

The first stage in the preparation of the NPRI inventory thus consisted of identifying and then evaluating all existing sources which map a minimum depth of 30cm of peat. This minimum was chosen as a pragmatic threshold and corresponds to depth minima employed by soil taxonomists.

Other sources of information relevant to the identification of peatland were also assessed. These included published and unpublished articles, vegetation surveys and air photographs. The review identified and evaluated seventeen data sets with potential to contribute to the database (Rowell 1990). Brief descriptions of these are provided in Appendix 1.

Following this review, the British Geological Survey (BGS) one inch maps and 1:50,000 Drift Edition Map Series were selected as the most consistent baseline data set for the inventory. The BGS maps indicate peat deposits irrespective of its origin (*i.e.* bog or fen), provided there is a thickness of at least 1m. Other reviewed map sources gave information for peat less than 1m in depth (30 - 50cm), but could not give consistent Great Britain-wide coverage. National and country maps tended to be published at a scale which provided inadequate detail for individual areas of peat and presented unresolvable boundary problems for the level of detail expected of the inventory. The Scottish Peat Surveys (Scottish Peat Committee, Moss Survey Group) give detailed accounts of individual sites but provide, in total, information for a very small proportion of sites, and only for Scotland.

The BGS Series has been published over a long period of time, with some of the earliest maps dating to the turn of the century. Differences between the mapped area and the present area of peat will exist in the case of disturbed sites where oxidative wastage will have reduced the extent of peat since the original mapping exercise. Such wastage will also have occurred prior to the BGS mapping programme. The BGS dataset on the one hand thus represents the minimum total extent of existing or former peat habitat because much was lost prior to the BGS surveys. On the other hand, the BGS maps indicate the maximum extent of deep peat deposits which have existed since publication of the BGS Drift Series. It is thus possible to assess the areal contraction of peat soil resources as a result of oxidative losses since their publication.

The quality of mapping is also a factor in judging the limitations of the BGS maps. Although the map series was compiled over many decades, the style and quality of mapping has remained generally consistent since the turn of the century. Only a few maps dating from the late 1800s, for example those of the North York Moors, revealed a significantly different approach to the mapping of peat. Quality of mapping and recent changes attributable to oxidation and peat

extraction can result in inconsistencies in the precise location of peat soil boundaries. In such cases the boundaries must be viewed as indicative.

Whereas the BGS drift map coverage extends to most of Great Britain, a number of gaps occur, mainly in upland areas, some of which contain blanket bog. A compilation of the the Soil Survey of Scotland (SSS) 1:50,000 Series was used to redress the poor coverage in northern Scotland and the Western Isles. Gaps in the coverage of upland peats in Wales could not be met from map sources, so a single figure for the missing peatland was obtained (see below).

3.4 Peat boundaries

The boundaries of areas of peat shown on individual BGS and SSS maps were digitised for computer storage and the data validated before being added to the ARC/INFO geographical information system (GIS) coverage. Registration points for the digitising process were based on Ordnance Survey grid intersections with eight-figure definition.

Transformation error in setting up the map registration points within the OS grid coordinate space was trivial, even in cases where the paper maps had distorted slightly during storage. The impact on the overall area figures was thus insignificant.

For known sites where BGS boundaries have not yet been obtained, a central grid reference was recorded and site details attached to this. Where available information included the area of the site, a circle of the appropriate area was created in the ARC/INFO coverage and positioned over the central grid reference for the site.

At the completion of this first stage, the inventory contained a relatively complete distribution map for deep peats in Britain, albeit with gaps in certain, mainly upland, areas where blanket bogs may occur. For the lowlands, at least, and for peat deposits greater than 1 metre in depth, the data held reflect reasonably accurately the extent of peat soils with one or two particular exceptions. These occur where individual 1:50,000 scale maps were not available. In such cases, information was obtained from other BGS maps published at a coarser scale.

3.5 Refinements to baseline coverage

The baseline data of the inventory are regularly under review as new information becomes available. They are intended as a means of focusing on the conservation and science aspects of the peatland resource. Alterations of many peatland margins, particularly in the lowlands, means that the baseline data cannot usually be used to identify the exact original areal extent of mire systems together with their natural organic/mineral transition zones. Nevertheless, on an individual site basis, the data is believed to be a meaningful representation of natural extent.

3.6 Identification of peatland types

This report is concerned only with lowland "confined" raised bogs. Consequently the site tables and descriptions provided here focus particularly on this part of the bog resource. Although "semi-confined" bogs are also listed within the present report and termed "intermediate", a detailed analysis of their status and condition is not provided. Cutover peatland is generally assumed to have been derived from raised bog unless evidence indicates otherwise.

3.6.1 *Identification of raised bog soils (derived from former or existing raised bog habitat)*

Raised bogs and blanket bogs produce peat soil types which are quite distinct from those derived from fens. In England and Wales soils of the Longmoss series are described as characteristic of raised bogs, while those of the Floriston series are found in both raised and blanket bogs. The Winter Hill soil series are particularly characteristic of blanket peats (Burton and Hodgson 1987). A number of other soil types which today support agricultural enterprises can be identified as being of raised bog origin. The Survey of Lowland Peatlands in England and Wales (Burton and Hodgson 1987) identified the majority of raised bogs and other mire types lying below 200m OD. on this basis. This survey lists all sites over 100ha and many smaller ones too. It identifies 83 sites or groups of sites which carry a component of raised bog-derived peat soil. All 83 sites were also recorded within the inventory. These sites were examined against the attributes of raised bogs employed in this assessment (see Lindsay 1995 for details), by reference to aerial photographic surveys and published or unpublished survey information, including the database of SSSIs. Of all 83 sites identified as raised bog by Burton and Hodgson (1987) only Walton Moss, in Cumbria, was subsequently considered to show the attributes of both raised and blanket bog and was therefore identified as "semi-confined" or intermediate.

About 150 lowland peat sites having the attributes of raised bogs are shown on the BGS maps for England and Wales in addition to those recorded by Burton and Hodgson (1987). Most of these lie outside the size or altitude criteria of their study; others may simply have been omitted due to the time and resource constraints of their survey.

In Scotland, aerial photography coupled with data drawn from previous surveys (described in **Section 3.8**) provided the basis for identification of lowland raised bog sites within geographically constrained areas defined by altititude and bioclimatic region.

3.7 Identification of other mire types

Other bog peatland was assessed using soil criteria and physical attributes derived from aerial and/or ground survey, and in this way allotted to a particular mire category.

Almost all the areas mapped as peat in Scotland fitted the criteria for one or other type of bog. Almost no fen sites were identified. Fens occur widely in Scotland and the reason for their under-representation in the BGS is not clear though the mixture of organic and mineral soil types associated with fens is undoubtedly a factor. In the case of raised bogs, in particular, the peat deposit is usually very obvious making identification and mapping much simpler than is possible for fens.

The extent and type of peatland in upland Wales, for which BGS mapping coverage was inadequate, remains to be quantified accurately and entered into the spatially referenced database. The total area given by Robertson and Jowsey (1968) for "exploitable", and thus presumably "deep" peat in Wales is 158,770ha. This same figure is quoted by Taylor (1977) who published a single map of Wales showing all areas of shallow (less than 0.5m) and deep (more than 0.5m) peat. In establishing this inventory, two assumptions were made. First, that all those sites identified by The Survey of Lowland Peat in England and Wales (Burton and Hodgson 1987) would form part of this total. Second, as Burton and Hodgson had identified all large raised bogs and many small ones, that all additional deep peat was probably blanket bog. This assumption was corroborated by Taylor's published distribution map which showed the area

of peat to be located almost entirely in the uplands of Wales (Taylor, 1977). These figures were thus incorporated in the summary totals of peat types (see **Section 4**).

On this basis, an estimate of the area of peatland greater than 1 metre in depth could then be calculated.

3.8 Classification of raised bog condition and land uses (*i.e.* identification of existing raised bog condition and the fate of former raised bog sites)

To assess the condition of raised bog peatlands, the following information sources were used:-

1. The Survey of Lowland Peat in England and Wales (Burton and Hodgson 1987) which includes summaries of information on land use on all sites over 100ha and many smaller ones too.
2. A Peatland Survey of Mid-Strathclyde (McTeague and Watson 1991) which, *inter alia*, maps areas of raised bog and their land cover in 1988/9.
3. Published surveys of the major raised bogs of the south Solway (Greig, 1975) and the Grampian lowlands (Ferreira 1977, 1982).
4. SSSI citations and supporting data.
5. Unpublished NCC surveys of raised bogs, including sites visited by country conservation agency staff.
6. Information on planning consents for peat extraction.
7. 1988/89 complete aerial photo coverage of Scotland (1:24,000).

These sources are described in greater detail in **Appendix 1**.

For each site, data from different sources were examined and, so far as they were known to be independently derived, checked for agreement. Where different sources did not contradict, the data were taken to be definitive; where there was a discrepancy, the most recent information was usually taken. The data reported for each site in this account were rarely more than five years old. An appreciable number of sites in Scotland were identified by a variety of sources as fitting the criteria for lowland raised bog but no further information about their condition was available at the time of writing.

Three classes of lowland raised bog were distinguished based on the intactness of the surface:- Primary, Secondary and Archaic. These fundamental divisions are usually recognisable from air photographs. The **Primary** class is restricted to areas which occur on a dome, or part of a dome, which has formed more or less in an unbroken sequence since the original development of the mire. The area would not therefore have been cut for fuel or horticultural usage, nor been tilled for agriculture. In taxanomical terms, the soils derived are considered "raw" peat soils, largely unaltered by physical, chemical or biological processes which give rise "ripened" or "earthy" peat soils described for areas claimed by agricultural improvement - the archaic class (Burton and Hodgson 1987). Few raised bogs were planted for commercial forestry prior to the mid 1940s. The primary nature of forested bogs can usually be established by examination of post-war aerial photography, written records or direct knowledge of a site. Primary sites were apparently preferred because ground preparation was relatively unconstrained by the pattern of peat cuttings. Secondary areas (those which have had the peat deposit truncated) presented a more variable terrain which posed significant silvicultural problems and appear generally to have been excluded in large-scale planting programmes. In a primary area the vertical layered peat

deposit or the peat "archive" remains by and large intact, provided conditions of waterlogging are maintained. The peat "archive" consists of the undisturbed stratigraphical and hence chronological sequence of peat layers which recorded events on and around the bog throughout its developmental history. The significance of this archive for the natural heritage and science is described in **Appendix 3**.

Secondary bog areas are those which have been subject to partial peat removal, usually through peat cutting, both by hand or by industrial process. In fact, most bogs exhibit some marginal cutting and some cuttings may be regenerating (*i.e.* laying down new peat) or revegetating. Others are still cut, domestically and / or commercially. Soils can be either "raw" or "earthy" dependent upon the degree of cutting and the history of use. The peat "archive" is truncated to varying degrees.

The **Archaic** class includes land which has been claimed for agricultural cropping, it may have been subjected to historical peat cutting, but consists largely of "ripened" or "earthy" peat soils. A substantial part of the peat deposit will have been removed either by cutting or oxidation promoted by drainage and cultivations. Only vestiges of the peat "archive" remain. Peatland which has been built upon or otherwise developed has been included in the archaic class.

A number of sub categories based on land cover, discernible from air photographs, were used to establish a classification of the condition of raised bog. Areas bearing classes P1 - P3 and S1 are considered to be "active raised bog" as defined for the purposes of the EC Habitats Directive (51.1 *Active raised bogs*). Summary details are shown below.

	Primary (P)		**Secondary (S)**		**Archaic (A)**
P1*	*Natural or near-natural vegetation*	**S1***	*Revegetated or regenerating cutover*	**A1**	*Bog soils in agricultural use*
P2*	*Degraded vegetation (usually burnt or dry)*	**S2**	*Commercial or domestic workings*	**A2**	*Built development*
P3*	*Drained*				
P4	*Open-canopy scrub or woodland*				
P5	*Closed-canopy woodland*			**U**	*Condition not yet determined*

*Classes of raised bog considered to be "active" under Annex 1 of the EC Habitats Directive

Using the above classification, the prevailing condition (the Major Land Cover) and the presumed most important nature conservation condition (the Best Land Cover) were determined for individual sites. The extent of natural and degraded and drained[3] areas was calculated. Resources did not permit the measurement of actual areas for other condition classes at this stage of the inventory. Nonetheless, this assessment provides four indicators of condition which help to identify the area in a "natural" and degraded condition and which categories the best land

[3] The two categories were amalgamated to simplify area calculations and in a number of cases do not differ in the vegetation they support.

cover (BLC) was subordinate to *i.e.* the major land cover[4] (MLC). BLC refers to the class closest to the presumed natural condition. The term implies a judgement of nature conservation importance, though in effect it is used as a convenience because in many cases nature conservation interest will be driven by multiple objectives, not naturalness alone (Lindsay 1995). Nevertheless as this report identifies, the near-natural vegetation category is considerably reduced in extent and frequently underpins the conservation rationale.

The existence of the Site of Special Scientific Interest (SSSI) designation or National Nature Reserve (NNR) status, and the size of planning consents for peat extraction, were also recorded against each site entry.

4 THE EXTENT AND DISTRIBUTION OF PEATLANDS IN BRITAIN

4.1 Summary

* The inventory to date holds information on a total of more than 1.6 million hectares of peatlands in Britain, 67% in Scotland, 23% in England and 10% in Wales.

* Blanket bogs comprise 87% of the total, intermediate bogs less than 1%, and fens 8%.

* The area of land which formerly supported lowland raised bog is estimated to have extended to 69,664ha, 4% of the total peatland area recorded by the inventory.

* The inventory has records of 1,045 raised bog sites in Britain, of which 807 are in Scotland, 218 in England and 20 in Wales. By area this is distributed 54% in England, 40% in Scotland, and 6% Wales.

* Most raised bog sites are smaller than 30ha.

4.2 Extent and distribution of deep peat

The inventory baseline data set for Great Britain gives a total area of peatlands of just over 1.6 million hectares (Table 1) which includes all peat over 1 metre deep and some shallower deposits too. It is estimated that blanket bog peat amounts to 87% of the total, fen peat to 8%, raised bog to 4% and intermediate bog to less than 1%.

The geographical distribution of the known total peat area is shown in Figure 1: Scotland contains 67%, England 23% and Wales 10%. The classified area of peatlands by English and Welsh county and Scottish district is shown in Table 2. The detailed area figures for Wales held by the inventory are incomplete, but include an additional area of blanket bog whose precise location has not yet been established, referred to as, Taylor's peat, (Taylor 1977).

[4] The history and pattern of land use on raised bog sites means that most consist of more than one condition class. Thus a site might bear peat soils which are now in agricultural usage as its most extensive condition (MLC), but also contain a small area of revegetating peat cuttings as its "highest quality" condition in nature conservation terms (BLC). A summary impression of the overall nature conservation potential of each site can thus be derived.

Table 1 Summary area of peat soils in Great Britain greater than 1 metre in depth (ha)

Country	Fen*	Raised bog	Blanket bog	Intermediate bog	Total area
England	132,469	37,694	214,077	981	385,221
Scotland	1,215	27,892	1,056,198	10,653	1,095,958
Wales	2,867	4,078	158,770	85	165,799
Total recorded peat	***136,551***	***69,663***	***1,429,045***	***11,719***	***1,646,979***
Total bog peat				1,508,609	

Notes

*Fen peat soils poorly recorded by the BGS Drift Maps, particularly in Scotland; data therefore incomplete
Totals include some peat which is 0.3-0.5 m deep

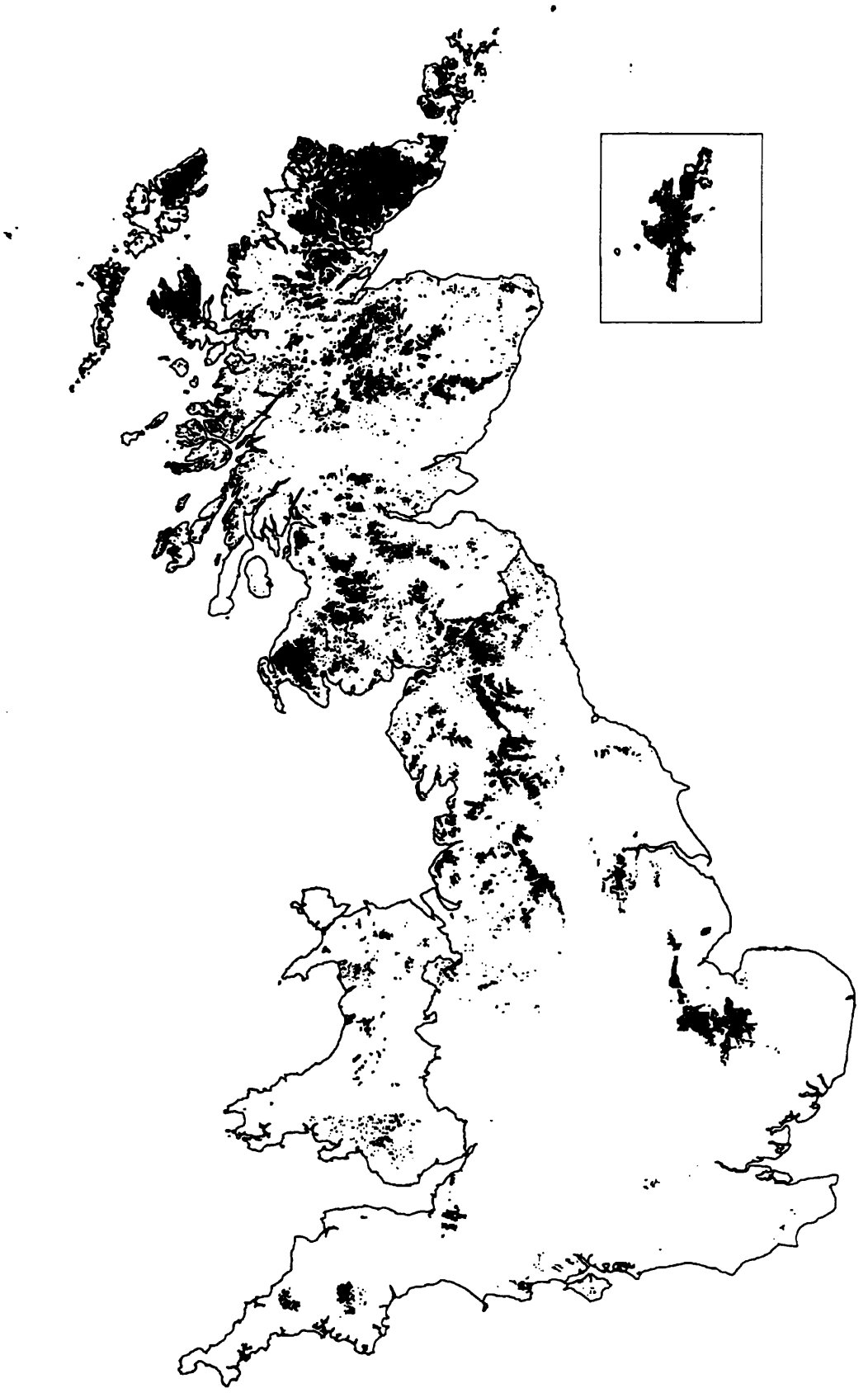

Figure 1

Total area of deep peat soils for Great Britain. The areas shown were digitised by the NPRI from the British Geological Survey Drift Edition 1:50,000-scale sheets, plus additional sources where necessary, which indicate peat deposits greater than 1 m deep. This excludes 'Taylor's peat'.

Table 2 Summary areas of deep peat (> 1m) by English or Welsh county, or Scottish district (ha)

Country	County/District	Fen*	Raised bog	Blanket bog	Inter-mediate	Total area
England						
	Avon	1,099	-	-	-	1,099
	Bedfordshire	-	-	-	-	0
	Berkshire	48	-	-	-	48
	Buckinghamshire	-	-	-	-	0
	Cambridgeshire	60,136	1,151	-	-	61,287
	Cheshire	1,027	1,532	1,119	-	3,678
	Cleveland	-	-	-	-	0
	Cornwall	3,315	-	-	-	3,315
	Cumbria	1,833	5,480	49,229	818	57,360
	Derbyshire	21	-	12,405	-	12,426
	Devon	127	8	9,958	66	10,160
	Dorset	621	-	-	-	621
	Durham	-	32	15,376	18	15,426
	East Sussex	6	-	11	-	17
	Essex	-	-	-	-	0
	Gloucestershire	64	-	-	-	64
	Greater London	7	4	-	-	12
	Greater Manchester	103	3,809	3,659	-	7,571
	Hampshire	424	-	-	-	424
	Hereford & Worcester	-	-	-	-	0
	Hertfordshire	-	-	-	-	0
	Humberside	3,568	835	-	-	4,404
	Isle of Wight	176	-	-	-	176
	Kent	284	-	-	-	284
	Lancashire	896	13,602	17,223	-	31,721
	Leicestershire	-	-	-	-	0
	Lincolnshire	20,624	-	-	-	20,624
	Merseyside	85	1,737	3	-	1,825
	Norfolk	18,130	-	-	-	18,130
	North Yorkshire	83	165	44,023	-	44,270
	Northamptonshire	-	-	-	-	0
	Northumberland	167	287	43,945	79	44,477
	Nottinghamshire	3,114	-	-	-	3,114
	Oxfordshire	-	-	-	-	0
	Shropshire	3,401	585	14	-	4,001
	Somerset	4,506	5,563	437	-	10,507
	South Yorkshire	1,527	2,759	5,039	-	9,325
	Staffordshire	771	13	543	-	1,328
	Suffolk	5,934	-	-	-	5,934
	Surrey	361	-	-	-	361
	Tyne & Wear	-	51	-	-	51
	Warwickshire	-	-	-	-	0
	West Midlands	11	-	-	-	11
	West Sussex	-	84	-	-	84
	West Yorkshire	-	-	11,093	-	11,093
	Wiltshire	-	-	-	-	0
Totals		132,469	37,698	214,077	981	385,226
				Total bog peat		252,757

Country	County/District	Fen*	Raised bog	Blanket bog	Inter-mediate	Total area
Scotland						
	Angus	17	60	15,546	-	15,623
	Annandale & Eskdale	81	1,185	7,303	165	8,734
	Argyll & Bute	8	1,305	18,636	-	19,949
	Badenoch & Strathspey	268	-	32,882	84	33,234
	Banff & Buchan	129	3,203	1,579	1,191	6,102
	Bearsden & Milngavie	-	-	10	-	10
	Berwickshire	192	338	218	12	760
	Caithness	-	-	97,299	-	97,299
	City of Aberdeen	28	99	-	-	127
	City of Dundee	-	1	-	-	1
	City of Edinburgh	-	29	234	-	263
	City of Glasgow	59	242	-	-	300
	Clackmannan	-	30	800	-	831
	Clydebank	-	-	95	-	95
	Clydesdale	2	2,043	7,938	733	10,715
	Cumbernauld & Kilsyth	-	166	230	666	1,062
	Cumnock & Doon Valley	-	247	18,607	1,775	20,629
	Cunninghame	-	629	3,470	-	4,099
	Dumbarton	-	197	2,146	-	2,343
	Dunfermline	49	641	559	-	1,250
	East Kilbride	-	639	4,619	-	5,258
	East Lothian	-	30	307	-	338
	Eastwood	15	16	1,421	-	1,452
	Ettrick & Lauderdale	-	312	7,417	-	7,729
	Falkirk	2	656	27	806	1,491
	Gordon	104	1,127	4,556	-	5,787
	Hamilton	-	195	1	-	197
	Inverclyde	-	-	1,834	-	1,834
	Inverness	-	50	44,455	-	44,505
	Kilkmarnock & Loudoun	8	624	5,698	30	6,360
	Kincardine & Deeside	69	374	23,738	-	24,181
	Kirkcaldy	15	215	-	-	230
	Kyle & Carrick	-	95	20,300	-	20,395
	Lochaber	-	-	21,238	-	21,238
	Midlothian	-	186	943	334	1,463
	Monklands	11	1,270	196	1,006	2,483
	Moray	5	558	13,062	1,525	15,150
	Motherwell	-	616	1,510	-	2,126
	Nairn	-	366	7,230	312	7,908
	Nithsdale	27	3,296	6,208	-	9,532
	North East Fife	84	180	1	-	265
	Orkney Islands	-	-	16,959	-	16,959
	Perth & Kinross	3	587	21,886	258	22,733
	Renfrew	-	318	1,215	308	1,842
	Ross & Cromarty	-	89	47,144	65	47,298
	Roxburgh	-	57	11,114	-	11,170
	Shetland Islands	-	-	66,782	-	66,782
	Skye & Lochalsh	-	-	47,987	-	47,987
	Stewartry	-	429	10,220	12	10,661
	Stirling	-	2,368	9,732	-	12,100
	Strathkelvin	2	268	643	-	913
	Sutherland	-	-	325,779	-	325,779
	Tweeddale	-	405	5,311	173	5,889
	West Lothian	-	325	2,467	959	3,751
	Western Isles	-	-	88,241	-	88,241
	Wigtown	37	1,823	28,405	238	30,503
Totals		1,215	27,892	1,056,198	10,653	1,095,958
				Total bog peat		1,094,743

Wales		Fen*	Raised bog	Blanket bog	Intermed-iate bog	Totals	
	Clwyd	69	762	3,001	-	3,832	
	Dyfed	569	3,125	4,225	45	7,965	
	Gwent	-	-	105	-	105	
	Gwynedd	1,574	105	4,433	-	6,113	
	Mid Glamorgan	87	18	2,349	-	2,454	
	Powys	-	67	5,292	-	5,359	
	South Glamorgan	-	-	-	-	0	
	West Glamorgan	567	-	2,044	40	2,651	
	Taylor's extra peat			137,321		137,321	(**)
Totals		2,867	4,078	21,449	85	28,478	
				Total bog peat		25,611	
GB Total		136,551	69,663	1,291,724	11,719	1,509,662	

Notes

* Fen peat soils poorly recorded by the BGS Drift Maps, particularly in Scotland; data therefore incomplete
** Taylors peat (after Taylor, 1977)
Totals include some peat which is only 0.3-0.5 m deep

4.3 Extent and distribution of fen

Over 136,000ha of fen peatlands were identified, the majority of which 132,000 (97%) were in England. The area of fen peat is underestimated in Scotland and considered to be appreciably higher, though this is unlikely to have any bearing on the proportion classed as raised bog.

4.4 Extent and distribution of blanket, and intermediate bog

A total of 1,429,045ha of blanket bog was identified, with 1, 050,198ha (74%) in Scotland, 214,077ha (15%) in England and 158,770ha (11%) in Wales. Intermediate bogs are restricted to 11,719ha, mainly in Scotland.

Peatlands west of the Great Glen, Scotland, are predominantly blanket bog, from the montane zone down to sea level. To the east, blanket bog extends into the Grampians and the Southern Uplands. In England and Wales, blanket bog is mostly restricted to upland areas, particularly in the Pennines, Dartmoor, Exmoor, the North York Moors and the more gently sloping uplands of Wales (e.g Berwyn, Migneint, Elenydd).

4.5 Extent and distribution of soils derived from raised bog habitat

At 69,663ha, peat deposits which developed as raised bog represent 4% of the total. They are most extensive in England (37,980ha or 54%); Scotland has 27,892ha (40%) and Wales 4,078ha (6%). The distribution of sites in Britain which currently support, or formerly supported, raised bog habitat is shown in Figure 2. There are 1,045 sites, of which 807 are in Scotland, 218 in England and 20 in Wales. Many of these sites now show little obvious trace of ever having been raised bog habitat because a range of human activities have caused complete alteration of the original habitat.

As the area of raised bog habitat was never extensive on a GB scale (Fig. 2), a map displaying the actual extent of lowland raised bog to scale is not particularly illuminating, other than to give a general indication of the distribution. Figure 3 therefore presents the information schematically as proportionally sized circles, the centre point located by OS coordinates for the centroid of the peatland site and the diameter proportional to the mid-point of the size class shown in the key. The largest sites occur in England and, to a lesser extent, in Wales, whereas in Scotland the majority of sites are comparatively small. The major concentrations of raised bogs occur in southern and eastern Scotland and in north west England.

The Central Belt and the Grampian coastal plain are the main areas of raised bog development in Scotland. An almost continuous band of sites runs from Dumfries and Galloway, down the north-west coast of England, as far south as the Cheshire Plain. For the remainder, isolated sites or groups of sites tend to be scattered throughout northern and western England, various localities in Wales and a few documented examples in the south of England.

It is possible that some sites now classified in the inventory as fen may have once carried raised bog (Wartle Moss, Grampian and Leighton Moss, Lancashire, for example), though the inventory has not attempted to identify these. The extent and distribution categorised as "raised bog" peatland therefore represents a minimum.

Figure 2

The distribution of soils derived from former or existing raised bog habitats in Great Britain. Lowland raised bogs comprise only a small proportion of the peatland resource in Great Britain with very few individual sites covering more than 100 ha.

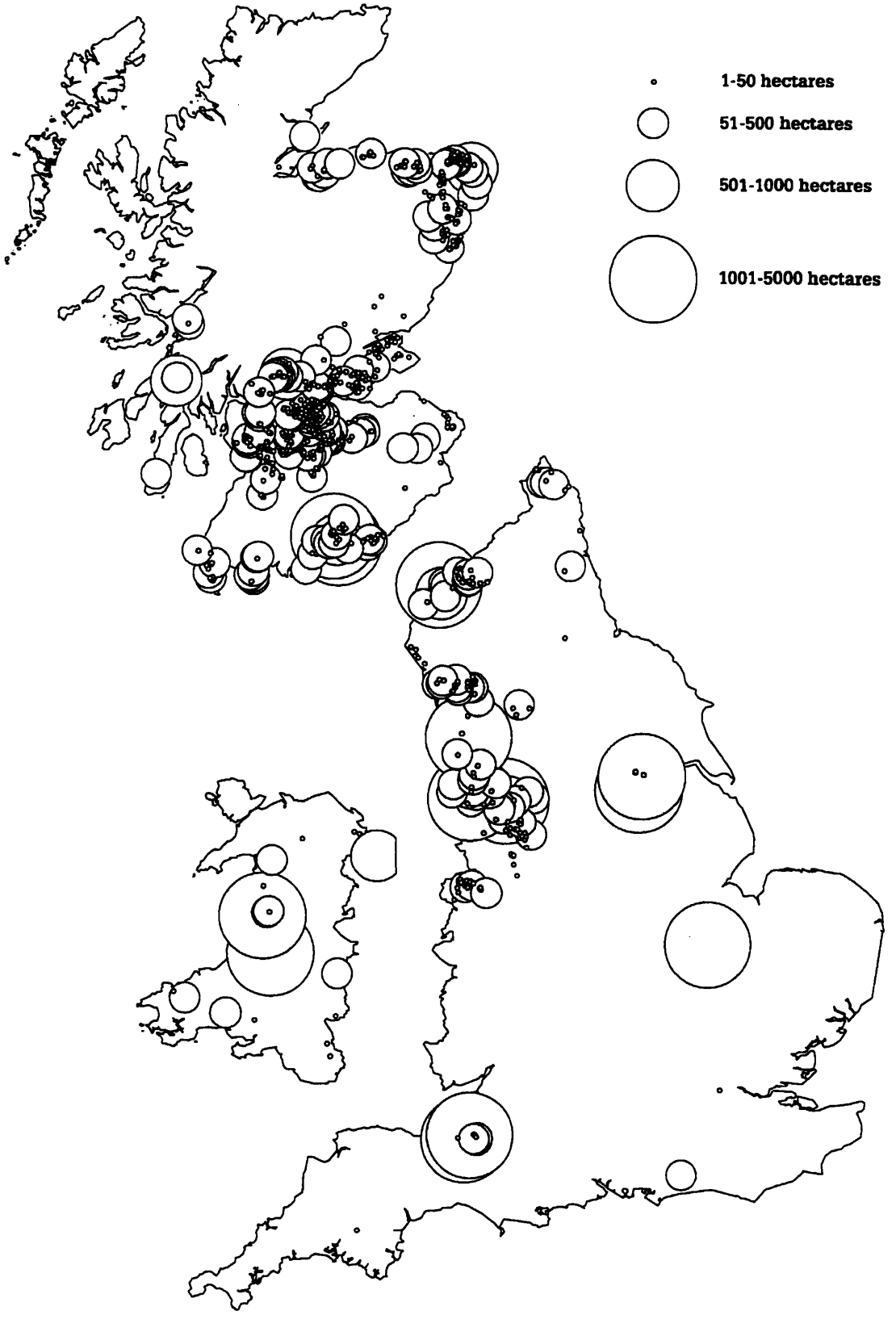

Figure 3

The distribution of soils derived from former or existing raised bog habitat (expressed as sized circles). Indivdual bogs are displayed as area circles allocated to four size-classes (see key). The map shows the former distribution of raised bog sites (using soil and geomorphological criteria rather than current vegetation), rather than the extent of surviving habitat today.

A summary of the range of site-sizes on a country and national basis is provided in Table 3. This shows that in all three countries the commonest size-classes are those for sites of 30ha or less. Overall, 73% of raised bog sites in Great Britain are less than 30ha in size.

5 ASSESSMENT OF THE PRESENT-DAY CONDITION OF RAISED BOGS

5.1 Summary

* No raised bog in Britain bears completely natural vegetation either on its margins or over its central expanse. However, some near-natural vegetation remains on some raised bogs.

* The estimated extent with a near-natural bog vegetation cover is 3,836ha (on *sites* extending over 19,000ha). Scotland holds 2,515ha, Wales 818ha, and England 503ha spread over 140 sites.

* "Primary" near-natural vegetation remains predominant on 55 sites. These sites have a total extent of raised bog vegetation of 5,404ha (no distinction made between near-natural and other categories of raised bog vegetation).

* Flanders Moss East (540ha), in Stirling district, holds the largest continuous area of near-natural raised bog vegetation in Britain. Cors Caron (a complex of raised bogs covering 480ha) and Cors Fochno (200ha) contain the largest areas in Wales. In England, there are no large sites where a near-natural raised bog vegetation is predominant.

5.2 Condition-classes on raised bogs

Condition classes were conceived as mappable sub-units within a raised bog (for fuller descriptions of "condition" see **Appendix 2** and Lindsay 1995). The criteria for Major Land Cover (MLC) and Best Land Cover (BLC) were described in **Section 3.** Table 4 gives country-wide summary statistics for the area of raised bog peat in each county or district, as well as the number of sites involved, together with an estimate of the near-natural area (condition class P1) and primary degraded or drained area (the sum of condition classes P2 and P3). Summary SSSI (area and number) and NNR (number only) information is also provided. The SSSI boundary is rarely coincident with the raised bog peat boundary held by the inventory, for example the SSSI may also include some adjoining fen or woodland. Hence, the available SSSI area measurements exceed those covered just by raised bog. The consent area for peat extraction is given in the final column.

Table 5 summarises the distribution of condition classes across the three countries. It is important to note that the *number* of sites in Table 5 is lower than that given in Table 4 because some sites lie across county or district boundaries. In Table 4 these are counted as two or more records (one for each district/county involved), whereas Table 5 simply tallies the number of *whole* sites.

Table 3. Frequency of different size classes of former raised bogs

Size classes (ha)	*England*	*Scotland*	*Wales*	*GB*
<1	11	30	2	43
1-10	86	377	5	468
10-30	45	215	3	263
30-60	19	73	0	92
60-125	22	60	4	86
125-250	15	37	2	54
250-500	9	9	0	18
500-1000	1	4	1	6
1000+	10	2	2	14
	218	***807***	***19***	***1044*** *

* size unknown for Illtyd pools in Wales

Table 4. Area and numbers of raised bogs by county and district showing natural area, degraded area, numbers and areas of SSSIs and NNRs, and planning consents

	Land area ha	*Number* of sites*	*NPRI peat area*	*% land cover by raised bog ***	*Primary near natural area ha*	*Primary degraded/ drained area*	*SSSI area*	*Number** of SSSI*	*Number** of NNR*	*Consent area § ha*
English county										
Cambridgeshire	340,921	1	1,151	0	-	-	262	1	1	-
Cheshire	232,846	39	1,532	1	5	-	160	4		167
Cumbria	688,555	73	5,480	1	448	1,178	3,550	19	4	878
Devon	671,082	1	8	0	8	-	58	1		-
Durham	243,596	2	32	0	-	-	-	-		-
Greater London	157,950	1	4	0	-	-	-	-		-
Greater Manchester	128,915	12	3,805	3	-	-	228	4		305
Humberside	351,319	5	835	0	-	-	606	3	1	482
Lancashire	303,945	20	13,602	4	12	29	243	3		57
Merseyside	64,750	7	1,737	3	-	-	-	1		169
North Yorkshire	831,630	5	165	0	20	54	179	5		-
Northumberland	503,213	12	287	0	10	45	143	2		25
Shropshire	349,036	31	585	0	-	15	258	2	1	71
Somerset	349,799	9	5,563	2	-	-	2,980	7	1	1,261
South Yorkshire	156,112	2	2,759	2	-	75	2,714	2	1	2,414
Staffordshire	271,700	2	13	0	-	-	-	-		-
Tyne & Wear	53,512	1	51	0	-	10	51	1		-
West Sussex	201,664	1	84	0	-	-	84	1		-
subtotal	***5,900,545***	***224***	***37,694***	***1***	***503***	***1,406***	***11,515***	***56***	***9***	***5,829***
Scottish district										
Angus	203,288	3	60	0	3	8	54	2		-
Annandale & Eskdale	155,348	26	1,185	1	65	41	65	1		91
Argyll & Bute	675,625	7	1,305	0	14	576	1,195	2	1	2
Banff & Buchan	152,602	102	3,203	2	134	143	209	2		239
Berwickshire	87,542	16	338	0	88	21	1,199	3		-
City of Aberdeen	18,441	10	99	1	-	7	-	-		-
City of Dundee	23,465	2	1	0	-	-	-	-		-
City of Edinburgh	26,000	2	29	0	12	17	63	1		-
City of Glasgow	19,736	3	242	1	-	-	-	-		-
Clackmannan	16,600	2	30	0	5	1	-	-		-
Clydesdale	132,478	73	2,043	2	304	366	436	3		185
Cumbernauld & Kilsyth	10,386	15	166	2	60	18	-	-		-
Cumnock & Doon Valley	87,878	17	247	0	15	38	66	2		-
Cunninghame	87,852	16	629	1	83	108	39	1		-
Dumbarton	47,682	8	197	0	14	5	90	3		-
Dunfermline	31,313	39	641	2	19	15	66	2		-
East Kilbride	28,464	36	639	2	146	253	-	-		72
East Lothian	71,328	1	30	0	-	-	-	-		-
Eastwood	11,551	2	16	0	-	2	-	-		-
Ettrick and Lauderdale	135,612	2	312	0	60	131	99	2		-
Falkirk	29,086	39	656	2	13	2	-	-		160
Gordon	221,418	38	1,127	1	-	50	-	-		-
Hamilton	13,131	8	195	1	86	62	81	2		-
Inverness	288,000	1	50	0	20	15	-	-		-
Kilmarnock & Loudoun	37,322	34	624	2	32	96	-	-		-
Kincardine & Deeside	254,777	15	374	0	-	68	94	1		-
Kirkcaldy	23,595	16	215	1	-	-	62	1		-
Kyle & Carrick	129,059	1	95	0	-	20	-	-		-
Midlothian	34,600	3	186	1	7	30	-	-		65
Monklands	15,799	75	1,270	8	88	281	98	3		-
Moray	223,050	21	558	0	7	-	-	1		-
Motherwell	17,793	29	616	3	39	53	-	-		-
Nairn	42,191	10	366	1	50	30	-	-		-
Nithsdale	143,304	21	3,296	2	182	20	656	2	1	-
North East Fife	57,557	32	180	0	-	10	20	2		-
Perth & Kinross	523,489	19	587	0	9	131	426	5		-
Renfrew	30,873	7	318	1	8	-	-	-		-
Ross & Cromarty	549,799	2	89	0	65	20	294	2		-
Roxburgh	154,027	2	57	0	10	40	63	2		-
Stewartry	167,054	4	429	0	-	30	-	-		-
Stirling	216,989	32	2,368	1	617	137	1,014	7	1	138
Strathkelvin	16,446	14	268	2	1	37	-	-		15
Tweeddale	89,924	7	405	0	86	70	94	1		75
West Lothian	41,828	13	325	1	38	104	139	2	1	12
Wigtown	171,276	26	1,823	1	135	51	50	1		30
subtotal	***5,515,578***	***851***	***27,892***	***1***	***2,515***	***3,107***	***6,671***	***56***	***4***	***1,085***
Welsh county										
Clwyd	247,595	4	762	0	-	155	705	3	1	283
Dyfed	576,678	9	3,125	1	725	360	1,538	5	2	-
Gwynedd	405,984	2	105	0	85	4	64	1		-
Mid-Glamorgan	101,872	2	18	0	8	-	-	1		-
Powys	507,742	3	67	0	-	-	154	2		-
subtotal	***1,839,871***	***20***	***4,078***	***0***	***818***	***519***	***2,461***	***12***	***3***	-
GB total	***13,255,994***	***1,095***	***69,664***	***1***	***3,836***	***5,032***	***20,647***	***124***	***16***	***7,237***

* NB "Numbers" of sites are ***split by administrative authority***, hence total number of sites is artificially inflated. Later tables provide totals on a true *site* basis.

** Figures rounded to the nearest whole number; "0" = less than 1%

§ Some consents are already under conservation management

Table 5 Number and area (ha) of raised bog sites classified by Major land cover (MLC) and Best land cover (BLC) class**

Note : data are based on ***whole sites***, and therefore numbers differ from those presented in Tables 1 to 3

			(NUMBER OF SITES)				*(AREA OF SITES)*			
(a) Major Land Cover			*England*	*Scotland*	*Wales*	***Grand Total***	England	Scotland	Wales	***Grand Total***
PRIMARY	**P1**	*Near-natural*	1	49	6	***56***	8	2,701	2,694	***5,404***
	P2	*Degraded*	8	82	5	***95***	1,744	3,137	143	***5,024***
	P3	*Drained*	14	21	1	***36***	563	1,362	23	***1,948***
	P4	*Scrub*	15	5	1	***21***	429	176	6	***611***
	P5	*Closed canopy*	46	192	0	***238***	1,430	9,549	0	***10,979***
SECONDARY	**S1**	*Revegetating*	15	38	3	***56***	818	2,871	988	***4,678***
	S2	*Active workings*	12	12	0	***24***	10,544	2,284	0	***12,828***
	A1	*Agriculture*	96	237	3	***336***	21,031	3,081	247	***24,360***
	A2	*Built*	11	27	1	***39***	938	950	174	***2,062***
UNKNOWN	**U**		0	144	0	***144***	0	1,771	0	***1,771***
		Total	***218***	***807***	***20***	***1,045***	***37,504***	***27,884***	***4,276***	***69,664***
(b) "Best" Land Cover										
PRIMARY	**P1**	*Near-natural*	16	116	9	***141***	8,121	8,238	2,769	***19,128***
	P2	*Degraded*	16	129	4	***149***	6,217	5,206	1,036	***12,460***
	P3	*Drained*	19	24	2	***45***	1,986	1,845	43	***3,874***
	P4	*Scrub*	13	4	1	***18***	249	121	6	***376***
	P5	*Closed canopy*	43	168	0	***211***	2,179	6,681	0	***8,861***
SECONDARY	**S1**	*Revegetating*	13	12	0	***25***	5,057	616	0	***5,673***
	S2	*Active workings*	8	7	0	***15***	3,275	1,702	0	***4,976***
	A1	*Agricultural*	84	186	3	***273***	10,224	1,489	247	***11,961***
	A2	*Built*	6	17	1	***24***	196	214	174	***584***
UNKNOWN	**U**		0	144	0	***144***	0	1,771	0	***1,771***
		Total	***218***	***807***	***20***	***1,045***	***37,504***	***27,884***	***4,276***	***69,664***

*** In England there are 14 sites which have "Primary:drained" as their major land-cover, and 96 sites where "Secondary:agriculture" is the major land-cover class. These same bogs extend over an area of 563 hectares and 21,031 hectares respectively - representing the full extent of the bogs, but not the area of the major land-cover class. So, in England, 16 raised bogs contain "Primary:natural bog", while the total area of bogs which contain these fragments cover 8,121 hectares. The measured area of P1, P2, and P3 are given in Table 4 and Table 7*

Table 6 provides a more detailed description of the distribution of condition classes within the countries, but this time separated into individual data for each English and Welsh county, and for each Scottish district. It is thereby not only possible to obtain a clearer picture of those counties or districts which contain high-quality raised bogs, but also of those administrative areas containing raised bogs with, for example, significant rehabilitation potential.

5.3 Primary raised bog

The extent of condition class P1, and of classes P2 and P3 combined, is shown for the three countries in Table 7. Also provided is the number of sites which contain secondary regenerating bog (S1) either as the major land-cover, or as the best land-cover. Such areas, combined with the sites and areas with P1 - P3, are considered to be the main "active raised bog" resource (as defined under Annex 1 of the EC Habitats Directive for 51.1 *Active raised bogs*). Figure 4 expresses the figures for P1 - P3 as a proportion of the total for England, Scotland, Wales, respectively. Figure 5 gives the estimated area distribution of near-natural primary raised bog (P1).

5.3.1 *Class P1. Primary - near-natural* (Figure 5).

A total of 141 known sites contain some primary near-natural raised bog vegetation - 116 in Scotland, 16 in England and 9 in Wales (Table 5). The combined "measured area" of primary near-natural bog[1] is 3,836ha, some 6% of the extent of the former raised bog resource. In Scotland there are 2,515ha, in Wales 818ha and in England 503ha (see Table 4 and Table 7). There are 49 sites in Scotland and a further 6 in Wales which have primary near-natural vegetation as their major form of land-cover. There is only one site in England where the major land cover has tentatively been assigned to primary near-natural[2]. However, on those sites retaining some near-natural vegetation, the area of this vegetation is generally highly restricted in total extent. In Great Britain as a whole, 57% of such sites retain less than 10ha in the primary near-natural condition class and 31% less than 5ha.

An analysis of sites shows that, of the 116 sites in Scotland which still support primary near-natural condition class (P1) as their best land cover (BLC), 68 of these retain such vegetation as a minor part of the site only. For these 68 sites, 19% have primary degraded bog (P2), 13% closed canopy woodland (P5) and 12% agriculture (A1) as their major land cover (MLC). In England, 15 out of 16 P1 sites have other classes as their major land cover - *i.e.* damaged in one form or another. Wales is the exception, with 6 of the 9 sites having primary near-natural bog as their major land cover.

5.3.2 *Class P2 and Class P3. Primary - degraded, Primary - drained* (Figure 6).

The total area of condition classes P2 and P3 combined is 5,032ha, of which 3,107ha are in Scotland, 1,406ha in England and 519ha in Wales (Table 4 and Table 7). The two condition classes occur over 246 sites - 207 in Scotland, 33 in England and 6 in Wales. Such areas are more often relatively small remnants surrounded by bog habitat which is substantially altered, falling into wooded categories or secondary and archaic classes. The most striking feature about the distribution map for degraded and drained sites is the dense concentration of small sites within the industrialised and urbanised Central Belt of Scotland.

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[1] This has been measured over 131 sites.

[2] The site has also been described as a valley fen, so its status remains the subject of debate.

Table 6 Area and number of raised bogs expressed as whole sites across English and Welsh counties or Scottish districts, according to the Best land cover which occurs on them, or their Major land cover

thus Lancashire records 4,097 ha of P1 for Best land cover, but this is because Winmarleigh Moss has 12 ha of P1 within an overall former peat body of 4,097 a, although the majority of this is now agricultural land - i.e. a Major land cover of A1.

		BEST LAND COVER (total area of bog units : ha)										
	county/district	*P1*	*P2*	*P3*	*P4*	*P5*	*S1*	*S2*	*A1*	*A2*	*Unknown*	*Total*
England	Cambridgeshire	-	-	-	-	1,151	-	-	-	-	-	1,151
	Cheshire	217	-	-	2	252	898	-	162	-	-	1,532
	Cumbria	3,709	527	188	192	158	186	436	91	-	-	5,487
	Devon	8	-	-	-	-	-	-	-	-	-	8
	Durham	-	-	3	-	-	-	-	29	-	-	32
	Greater London	-	-	-	-	-	-	-	-	4	-	4
	Greater Manchester	-	-	8	-	-	2,745	644	223	183	-	3,805
	Humberside	-	-	-	-	-	47	-	9	-	-	56
	Lancashire	4,097	425	11	-	333	-	-	8,768	-	-	13,633
	Merseyside	-	-	-	-	-	1,181	164	361	-	-	1,706
	North Yorkshire	29	61	74	-	-	-	-	-	-	-	165
	Northumberland	61	-	79	55	37	-	-	48	7	-	287
	Shropshire	-	-	12	-	240	-	-	134	2	-	388
	Somerset	-	3,219	-	-	-	-	2,030	314	-	-	5,563
	South Yorkshire	-	1,980	1,559	-	-	-	-	-	-	-	3,539
	Staffordshire	-	5	-	-	8	-	-	-	-	-	13
	Tyne & Wear	-	-	51	-	-	-	-	-	-	-	51
	West Sussex	-	-	-	-	-	-	-	84	-	-	84
subtotal		8,121	6,217	1,986	249	2,179	5,057	3,275	10,224	196	0	37,504

		P1	*P2*	*P3*	*P4*	*P5*	*S1*	*S2*	*A1*	*A2*	*Unknown*	*Total*
Scotland	Angus	16	6	-	-	-	38	-	-	-	-	60
	Annandale & Eskdale	102	399	24	72	516	-	45	45	-	6	1,209
	Argyll & Bute	56	1,249	-	-	-	-	-	-	-	-	1,305
	Banff & Buchan	455	674	178	-	10	102	1,105	60	-	792	3,375
	Berwickshire	139	-	-	-	20	-	-	9	-	7	174
	City of Aberdeen	-	35	30	-	20	-	-	19	-	1	105
	City of Dundee	-	-	-	-	-	-	-	-	-	1	1
	City of Edinburgh	12	17	-	-	-	-	-	-	-	-	29
	City of Glasgow	-	297	-	-	-	56	-	-	-	-	353
	Clackmannan	40	4	-	-	-	-	-	-	-	-	44
	Clydesdale	939	332	177	-	73	-	246	218	47	-	2,032
	Cumbernauld & Kilsyth	112	7	2	-	24	-	-	4	-	-	149
	Cumnock & Doon Valley	51	23	-	-	17	-	-	44	-	112	247
	Cunninghame	377	58	166	-	-	-	-	20	6	-	627
	Dumbarton	28	94	-	35	15	-	-	4	-	22	197
	Dunfermline	71	267	-	15	150	5	-	36	63	6	613
	East Kilbride	411	90	-	-	51	-	-	22	5	-	579
	East Lothian	-	-	-	-	30	-	-	-	-	-	30
	Eastwood	-	5	-	-	-	-	-	11	-	-	16
	Ettrick and Lauderdale	127	-	349	-	-	-	-	-	-	-	476
	Falkirk	53	-	-	-	111	139	176	26	-	201	706
	Gordon	-	99	294	-	211	-	-	24	35	325	988
	Hamilton	240	6	-	-	-	-	-	4	-	-	251
	Kilmarnock & Loudoun	361	104	41	-	28	-	-	117	-	-	651
	Kincardine & Deeside	-	161	56	-	17	145	-	36	-	-	415
	Kirkcaldy	-	-	-	-	158	-	-	49	-	-	206
	Kyle & Carrick	-	-	95	-	-	-	-	-	-	-	95
	Midlothian	64	-	-	-	-	-	130	-	-	-	194
	Monklands	627	298	33	-	58	-	-	137	12	-	1,166
	Moray	53	-	-	-	203	36	-	96	26	66	479
	Motherwell	298	101	2	-	109	56	-	89	9	-	664
	Nairn	283	-	-	-	127	-	-	5	-	2	417
	Nithsdale	1,257	-	90	-	1,707	-	-	210	-	-	3,264
	North East Fife	-	17	34	-	15	-	-	74	12	29	180
	Perth & Kinross	172	105	-	-	275	-	-	59	-	-	611
	Renfrew	83	-	-	-	203	-	-	4	-	3	293
	Ross & Cromarty	35	54	-	-	-	-	-	-	-	-	89
	Roxburgh	10	47	-	-	-	-	-	-	-	-	57
	Stewartry	-	147	107	-	175	-	-	-	-	-	429
	Stirling	958	70	123	-	1,159	-	-	16	-	-	2,326
	Strathkelvin	-	135	-	-	22	40	-	8	-	19	224
	Tweeddale	290	-	-	-	74	-	-	27	-	10	401
	West Lothian	253	21	44	-	-	-	-	17	-	-	336
	Wigtown	264	285	-	-	1,104	-	-	-	-	170	1,823
subtotal		8,238	5,206	1,845	121	6,681	616	1,702	1,489	214	1,771	27,884

		P1	*P2*	*P3*	*P4*	*P5*	*S1*	*S2*	*A1*	*A2*	*Unknown*	*Total*
Wales	Clwyd	0	954	-	6	-	-	-	-	-	-	960
	Dyfed	2,681	-	23	-	-	-	-	247	174	-	3,125
	Gwynedd	85	-	20	-	-	-	-	-	-	-	105
	Mid-Glamorgan	18	-	-	-	-	-	-	-	-	-	18
	Powys	-	67	-	-	-	-	-	-	-	-	67
subtotal		2,784	1,021	43	6	0	0	0	247	174	0	4,276

Grand Total		**19,143**	**12,445**	**3,874**	**376**	**8,861**	**5,673**	**4,976**	**11,961**	**584**	**1,771**	**69,664**

Table 6 (cont.)

MAJOR LAND COVER - (total area of bog units : ha.)

	county/district	P1	P2	P3	P4	P5	S1	S2	A1	A2	Unknown	Total
England	Cambridgeshire	-	-	-	-	-	-	-	1,151	-	-	1,151
	Cheshire	-	-	-	2	218	3	8	1,067	234	-	1,532
	Cumbria	-	1,593	518	326	538	636	1,668	209	-	-	5,487
	Devon	8	-	-	-	-	-	-	-	-	-	8
	Durham	-	-	3	-	-	-	-	29	-	-	32
	Greater London	-	-	-	-	-	-	-	-	4	-	4
	Greater Manchester	-	-	-	-	-	103	-	3,174	528	-	3,805
	Humberside	-	-	-	-	-	47	-	9	-	-	56
	Lancashire	-	-	11	-	333	19	-	13,270	-	-	13,633
	Merseyside	-	-	-	-	-	-	-	1,542	164	-	1,706
	North Yorkshire	-	90	19	45	-	10	-	-	-	-	165
	Northumberland	-	61	-	55	37	-	79	48	7	-	287
	Shropshire	-	-	12	-	240	-	-	134	2	-	388
	Somerset	-	-	-	-	-	-	5,249	314	-	-	5,563
	South Yorkshire	-	-	-	-	-	-	3,539	-	-	-	3,539
	Staffordshire	-	-	-	-	13	-	-	-	-	-	13
	Tyne & Wear	-	-	-	-	51	-	-	-	-	-	51
	West Sussex	-	-	-	-	-	-	-	84	-	-	84
subtotal		8	1,744	563	429	1,430	818	10,544	21,031	938	0	37,504

		P1	P2	P3	P4	P5	S1	S2	A1	A2	Unknown	Total
Scotland	Angus	-	16	-	-	-	44	-	-	-	-	60
	Annandale & Eskdale	78	45	-	13	600	-	384	84	-	6	1,209
	Argyll & Bute	-	1,021	-	-	122	-	-	-	162	-	1,305
	Banff & Buchan	23	15	-	-	111	1,269	1,105	60	-	792	3,375
	Berwickshire	23	-	116	-	20	-	-	9	-	7	174
	City of Aberdeen	-	-	30	35	20	-	-	19	-	1	105
	City of Dundee	-	-	-	-	-	-	-	-	-	1	1
	City of Edinburgh	12	17	-	-	-	-	-	-	-	-	29
	City of Glasgow	-	-	-	-	-	56	-	175	122	-	353
	Clackmannan	-	-	-	-	40	-	-	-	4	-	44
	Clydesdale	450	167	35	-	625	-	325	383	47	-	2,032
	Cumbernauld & Kilsyth	84	35	2	-	24	-	-	4	-	-	149
	Cumnock & Doon Valley	-	74	-	-	17	-	-	44	-	112	247
	Cunninghame	17	-	209	-	15	166	-	215	6	-	627
	Dumbarton	28	4	-	-	15	35	-	94	-	22	197
	Dunfermline	11	-	-	59	150	288	-	36	63	6	613
	East Kilbride	15	258	-	-	75	-	141	66	23	-	579
	East Lothian	-	-	-	-	30	-	-	-	-	-	30
	Eastwood	-	5	-	-	-	-	-	11	-	-	16
	Ettrick and Lauderdale	127	-	349	-	-	-	-	-	-	-	476
	Falkirk	33	-	-	-	131	139	176	26	-	201	706
	Gordon	-	-	-	-	505	99	-	24	35	325	988
	Hamilton	182	-	-	-	-	-	-	10	58	-	251
	Kilmarnock & Loudoun	-	290	-	-	38	-	-	322	-	-	651
	Kincardine & Deeside	-	161	56	-	17	145	-	36	-	-	415
	Kirkcaldy	-	-	-	-	100	58	-	49	-	-	206
	Kyle & Carrick	-	-	-	-	-	95	-	-	-	-	95
	Midlothian	64	-	-	-	-	-	130	-	-	-	194
	Monklands	156	449	-	-	111	62	-	376	12	-	1,166
	Moray	-	-	-	-	255	36	-	96	26	66	479
	Motherwell	54	69	2	-	313	56	-	141	29	-	664
	Nairn	-	138	-	-	273	-	-	5	-	2	417
	Nithsdale	7	-	2	-	2,920	-	-	332	3	-	3,264
	North East Fife	-	10	-	-	22	-	-	107	12	29	180
	Perth & Kinross	-	195	57	-	44	23	6	286	-	-	611
	Renfrew	10	-	-	-	276	-	-	4	-	3	293
	Ross & Cromarty	89	-	-	-	-	-	-	-	-	-	89
	Roxburgh	10	47	-	-	-	-	-	-	-	-	57
	Stewartry	-	-	-	-	322	107	-	-	-	-	429
	Stirling	830	-	204	70	1,159	-	-	16	46	-	2,326
	Strathkelvin	-	64	11	-	22	40	17	8	43	19	224
	Tweeddale	66	-	224	-	74	-	-	27	-	10	401
	West Lothian	223	30	65	-	-	-	-	17	-	-	336
	Wigtown	110	27	-	-	1,104	153	-	-	259	170	1,823
subtotal		2,701	3,137	1,362	176	9,549	2,871	2,284	3,081	950	1,771	27,884

		P1	P2	P3	P4	P5	S1	S2	A1	A2	Unknown	Total
Wales	Clwyd	-	1	-	6	-	953	-	-	-	-	960
	Dyfed	2,666	-	23	-	-	15	-	247	174	-	3,125
	Gwynedd	85	-	-	-	-	20	-	-	-	-	105
	Mid-Glamorgan	18	-	-	-	-	-	-	-	-	-	18
	Powys	-	67	-	-	-	-	-	-	-	-	67
subtotal		2,769	68	23	6	0	988	0	247	174	0	4,276

Grand Total		5,478	4,950	1,948	611	10,979	4,678	12,828	24,360	2,062	1,771	69,664

Table 6 (cont.)

BEST LAND COVER - number of sites

	county/district	P1	P2	P3	P4	P5	S1	S2	A1	A2	Unknown	Total
England	Cambridgeshire	-	-	-	-	1	-	-	-	-	-	1
	Cheshire	1	-	-	1	17	5	-	15	-	-	39
	Cumbria	11	9	9	11	11	2	1	18	-	-	72
	Devon	1	-	-	-	-	-	-	-	-	-	1
	Durham	-	-	1	-	-	-	-	1	-	-	2
	Greater London	-	-	-	-	-	-	-	-	1	-	1
	Greater Manchester	-	-	1	-	-	3	2	4	2	-	12
	Humberside	-	-	-	-	-	2	-	2	-	-	4
	Lancashire	1	3	1	-	2	-	-	12	-	-	19
	Merseyside	-	-	-	-	-	1	1	4	-	-	6
	North Yorkshire	1	1	3	-	-	-	-	-	-	-	5
	Northumberland	1	-	1	1	2	-	-	5	2	-	12
	Shropshire	-	-	1	-	9	-	-	18	1	-	29
	Somerset	-	1	-	-	-	-	4	4	-	-	9
	South Yorkshire	-	1	1	-	-	-	-	-	-	-	2
	Staffordshire	-	1	-	-	1	-	-	-	-	-	2
	Tyne & Wear	-	-	1	-	-	-	-	-	-	-	1
	West Sussex	-	-	-	-	-	-	-	1	-	-	1
subtotal		16	16	19	13	43	13	8	84	6	0	218

		P1	P2	P3	P4	P5	S1	S2	A1	A2	Unknown	Total
Scotland	Angus	1	1	-	-	-	1	-	-	-	-	3
	Annandale & Eskdale	2	4	2	2	9	-	1	3	-	1	24
	Argyll & Bute	1	6	-	-	-	-	-	-	-	-	7
	Banff & Buchan	5	12	1	-	2	3	2	14	-	63	102
	Berwickshire	2	-	-	-	9	-	-	3	-	1	15
	City of Aberdeen	-	1	2	-	2	-	-	4	-	1	10
	City of Dundee	-	-	-	-	-	-	-	-	-	2	2
	City of Edinburgh	1	1	-	-	-	-	-	-	-	-	2
	City of Glasgow	-	2	-	-	-	1	-	-	-	-	3
	Clackmannan	1	1	-	-	-	-	-	-	-	-	2
	Clydesdale	14	18	2	-	9	-	2	25	1	-	71
	Cumbernauld & Kilsyth	3	1	1	-	5	-	-	1	-	-	11
	Cumnock & Doon Valley	1	3	-	-	1	-	-	7	-	5	17
	Cunninghame	7	3	1	-	-	-	-	3	1	-	15
	Dumbarton	2	2	-	1	1	-	-	1	-	1	8
	Dunfermline	4	1	-	1	17	1	-	7	2	3	36
	East Kilbride	11	13	-	-	1	-	-	7	2	-	34
	East Lothian	-	-	-	-	1	-	-	-	-	-	1
	Eastwood	-	1	-	-	-	-	-	1	-	-	2
	Ettrick and Lauderdale	1	-	1	-	-	-	-	-	-	-	2
	Falkirk	3	-	-	-	5	1	1	5	-	24	39
	Gordon	-	1	1	-	11	-	-	4	1	16	34
	Hamilton	3	1	-	-	-	-	-	2	-	-	6
	Kilmarnock & Loudoun	4	10	1	-	2	-	-	17	-	-	34
	Kincardine & Deeside	-	3	2	-	2	1	-	7	-	-	15
	Kirkcaldy	-	-	-	-	6	-	-	8	-	-	14
	Kyle & Carrick	-	-	1	-	-	-	-	-	-	-	1
	Midlothian	2	-	-	-	-	-	1	-	-	-	3
	Monklands	12	21	1	-	6	-	-	25	4	-	69
	Moray	1	-	-	-	10	1	-	2	3	1	18
	Motherwell	5	4	1	-	5	1	-	10	1	-	27
	Nairn	3	-	-	-	5	-	-	1	-	1	10
	Nithsdale	4	-	2	-	9	-	-	5	-	-	20
	North East Fife	-	2	1	-	6	-	-	13	2	8	32
	Perth & Kinross	3	4	-	-	10	-	-	2	-	-	19
	Renfrew	2	-	-	-	2	-	-	1	-	1	6
	Ross & Cromarty	1	1	-	-	-	-	-	-	-	-	2
	Roxburgh	1	1	-	-	-	-	-	-	-	-	2
	Stewartry	-	1	1	-	2	-	-	-	-	-	4
	Stirling	5	1	2	-	19	-	-	4	-	-	31
	Strathkelvin	-	6	-	-	2	2	-	1	-	1	12
	Tweeddale	2	-	-	-	1	-	-	1	-	2	6
	West Lothian	6	1	1	-	-	-	-	2	-	-	10
	Wigtown	3	2	-	-	8	-	-	-	-	13	26
subtotal		116	129	24	4	168	12	7	186	17	144	807

		P1	P2	P3	P4	P5	S1	S2	A1	A2	Unknown	Total
Wales	Clwyd	1	2	-	1	-	-	-	-	-	-	4
	Dyfed	4	-	1	-	-	-	-	3	1	-	9
	Gwynedd	1	-	1	-	-	-	-	-	-	-	2
	Mid-Glamorgan	2	-	-	-	-	-	-	-	-	-	2
	Powys	1	2	-	-	-	-	-	-	-	-	3
subtotal		9	4	2	1	0	0	0	3	1	0	20

Grand Total		141	149	45	18	211	25	15	273	24	144	1045

Table 6 (cont.)

MAJOR LAND COVER - number of sites

	county/district	P1	P2	P3	P4	P5	S1	S2	A1	A2	Unknown	Total
England	Cambridgeshire	-	-	-	-	-	-	-	1	-	-	1
	Cheshire	-	-	-	1	15	1	1	19	2	-	39
	Cumbria	-	5	10	12	15	8	3	19	-	-	72
	Devon	1	-	-	-	-	-	-	-	-	-	1
	Durham	-	-	1	-	-	-	-	1	-	-	2
	Greater London	-	-	-	-	-	-	-	-	1	-	1
	Greater Manchester	-	-	-	-	-	2	-	6	4	-	12
	Humberside	-	-	-	-	-	2	-	2	-	-	4
	Lancashire	-	-	1	-	2	1	-	15	-	-	19
	Merseyside	-	-	-	-	-	-	-	5	1	-	6
	North Yorkshire	-	2	1	1	-	1	-	-	-	-	5
	Northumberland	-	1	-	1	2	-	1	5	2	-	12
	Shropshire	-	-	1	-	9	-	-	18	1	-	29
	Somerset	-	-	-	-	-	-	5	4	-	-	9
	South Yorkshire	-	-	-	-	-	-	2	-	-	-	2
	Staffordshire	-	-	-	-	2	-	-	-	-	-	2
	Tyne & Wear	-	-	-	-	1	-	-	-	-	-	1
	West Sussex	-	-	-	-	-	-	-	1	-	-	1
subtotal		1	8	14	15	46	15	12	96	11	0	218

		P1	P2	P3	P4	P5	S1	S2	A1	A2	Unknown	Total
Scotland	Angus	-	1	-	-	-	2	-	-	-	-	3
	Annandale & Eskdale	1	2	-	1	12	-	2	5	-	1	24
	Argyll & Bute	-	5	-	-	1	-	-	-	1	-	7
	Banff & Buchan	2	2	-	-	3	16	2	14	-	63	102
	Berwickshire	1	-	1	-	9	-	-	3	-	1	15
	City of Aberdeen	-	-	2	1	2	-	-	4	-	1	10
	City of Dundee	-	-	-	-	-	-	-	-	-	2	2
	City of Edinburgh	1	1	-	-	-	-	-	-	-	-	2
	City of Glasgow	-	-	-	-	-	1	-	1	1	-	3
	Clackmannan	-	-	-	-	1	-	-	-	1	-	2
	Clydesdale	9	11	3	-	13	-	3	31	1	-	71
	Cumbernauld & Kilsyth	2	2	1	-	5	-	-	1	-	-	11
	Cumnock & Doon Valley	-	4	-	-	1	-	-	7	-	5	17
	Cunninghame	1	-	1	-	1	1	-	10	1	-	15
	Dumbarton	2	1	-	-	1	1	-	2	-	1	8
	Dunfermline	2	-	-	2	17	3	-	7	2	3	36
	East Kilbride	1	14	-	-	3	-	1	12	3	-	34
	East Lothian	-	-	-	-	1	-	-	-	-	-	1
	Eastwood	-	1	-	-	-	-	-	1	-	-	2
	Ettrick and Lauderdale	1	-	1	-	-	-	-	-	-	-	2
	Falkirk	2	-	-	-	6	1	1	5	-	24	39
	Gordon	-	-	-	-	12	1	-	4	1	16	34
	Hamilton	2	-	-	-	-	-	-	3	1	-	6
	Kilmarnock & Loudoun	-	6	-	-	3	-	-	25	-	-	34
	Kincardine & Deeside	-	3	2	-	2	1	-	7	-	-	15
	Kirkcaldy	-	-	-	-	5	1	-	8	-	-	14
	Kyle & Carrick	-	-	-	-	-	1	-	-	-	-	1
	Midlothian	2	-	-	-	-	-	1	-	-	-	3
	Monklands	3	16	-	-	9	1	-	36	4	-	69
	Moray	-	-	-	-	11	1	-	2	3	1	18
	Motherwell	1	1	1	-	8	1	-	13	2	-	27
	Nairn	-	1	-	-	7	-	-	1	-	1	10
	Nithsdale	1	-	1	-	10	-	-	7	1	-	20
	North East Fife	-	1	-	-	7	-	-	14	2	8	32
	Perth & Kinross	-	4	1	-	6	2	1	5	-	-	19
	Renfrew	1	-	-	-	3	-	-	1	-	1	6
	Ross & Cromarty	2	-	-	-	-	-	-	-	-	-	2
	Roxburgh	1	1	-	-	-	-	-	-	-	-	2
	Stewartry	-	-	-	-	3	1	-	-	-	-	4
	Stirling	3	-	3	1	19	-	-	4	1	-	31
	Strathkelvin	-	3	1	-	2	2	1	1	1	1	12
	Tweeddale	1	-	1	-	1	-	-	1	-	2	6
	West Lothian	5	1	2	-	-	-	-	2	-	-	10
	Wigtown	2	1	-	-	8	1	-	-	1	13	26
subtotal		49	82	21	5	192	38	12	237	27	144	807

		P1	P2	P3	P4	P5	S1	S2	A1	A2	Unknown	Total
Wales	Clwyd	-	2	-	1	-	1	-	-	-	-	4
	Dyfed	3	-	1	-	-	1	-	3	1	-	9
	Gwynedd	1	-	-	-	-	1	-	-	-	-	2
	Mid-Glamorgan	2	-	-	-	-	-	-	-	-	-	2
	Powys	-	3	-	-	-	-	-	-	-	-	3
subtotal		6	5	1	1	0	3	0	3	1	0	20

Grand Total		56	95	36	21	238	56	24	336	39	144	1045

Table 7. Summary of measured extent of "primary natural" (P1) and "primary degraded" (P1, P2) bog

An indication of numbers of sites supporting secondary regenerating (Major and Best Land Cover) vegetation (S1) is given. These together represent areas most appropriate for the definition of "active" bog, as defined by the EC Habitats Directive.

	Raised bog area recorded		***Primary natural (P1)***		***Primary degraded and drained (P2, P3)***		***Secondary Major land cover (S1)***	***Best land cover (S1)***
	Area	*Number*	*Measured area (ha)*	*Number*	*Measured area (ha)*	*Number*	*Number*	*Number*
England	37,504	218	503	16	1,406	33	15	13
Scotland	27,884	807	2,515	109	3,107	207	38	12
Wales	4,276	20	818	6	519	6	3	0
Grand Total	***69,664***	***1,045***	***3,836***	***131***	***5,032***	***246***	***56***	***25***

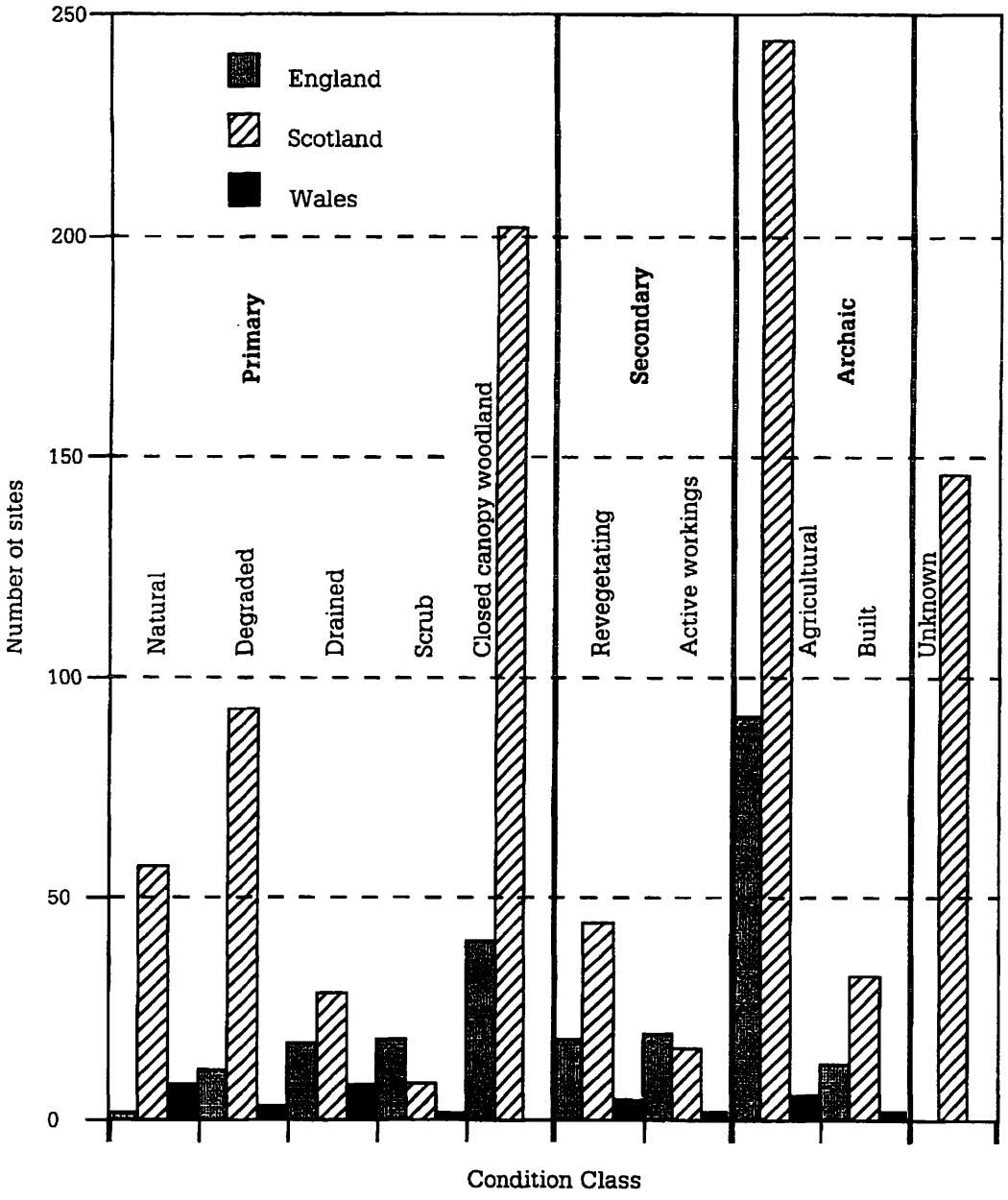


Figure 4

Number of raised bog sites classified according to their major land use. The largest proportion of habitat change has been as a result of agricultural land-claim leaving archaic peat soils. An appreciable number of sites have been cut-over, and a number have closed canopy woodland. Sites with near-natural or degraded areas are commonest in Scotland.

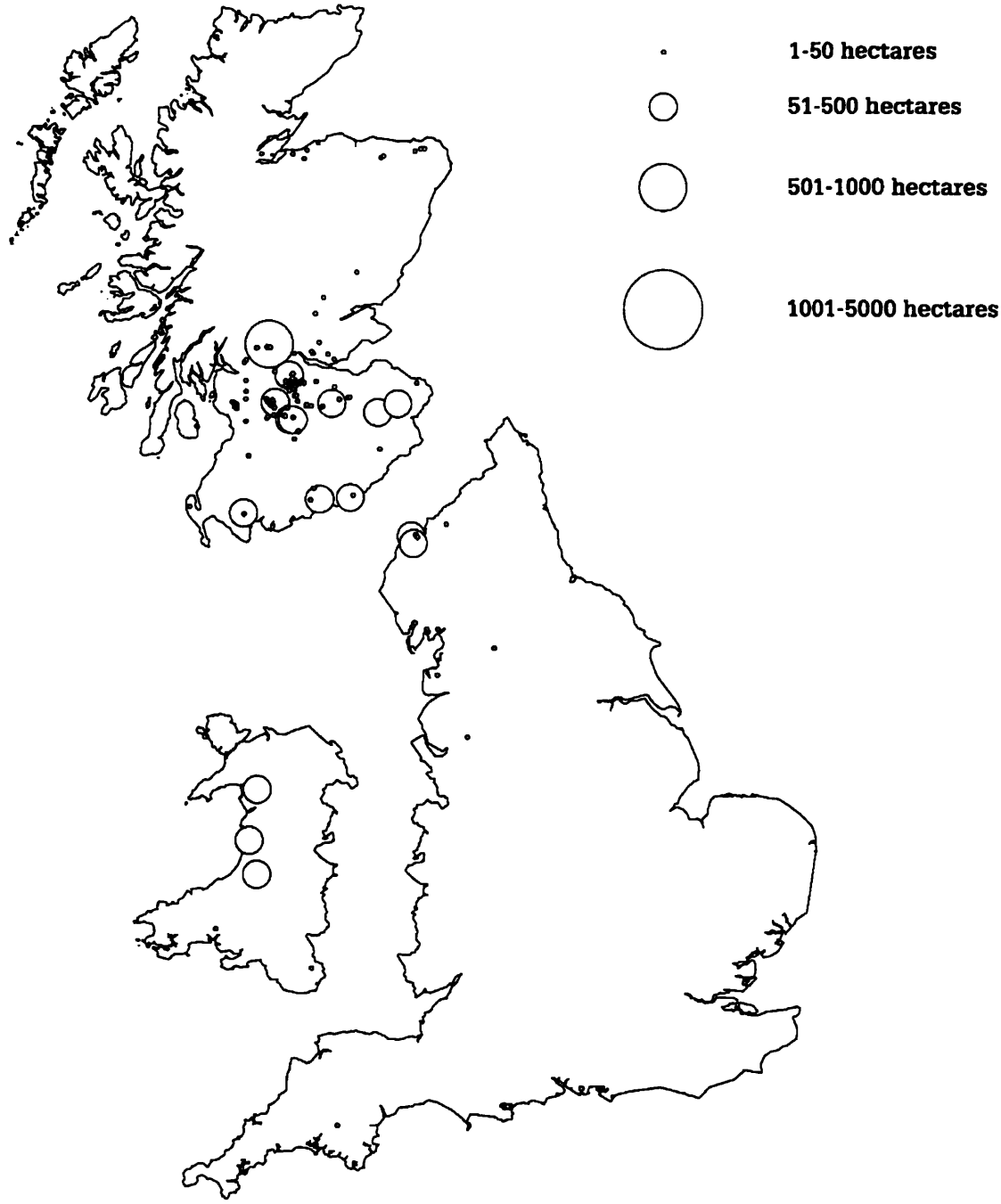
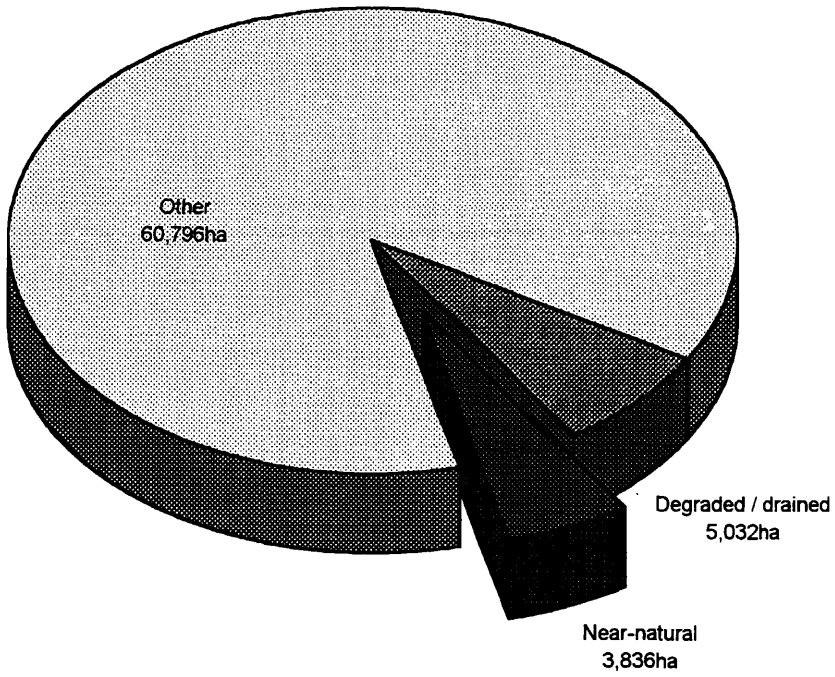


Figure 5

Estimated present area of natural primary raised bog, expressed as sized circles.

Figure 6

Proportion of the original extent of raised bog habitat which remains either in a near-natural or a degraded condition



5.3.3 *Class P4. Primary - open-canopy scrub or woodland*

This condition class is not extensive (21 sites where it is the major land class and 18 the best) despite evidence that almost all raised bogs appear to be suffering from some scrub encroachment (usually by birch or pine). A frequently invoked cause is lowering of the water table. Some sites which are affected do not, however, appear to have suffered substantial direct drainage, although most can be shown to have undergone significant marginal drainage or land-claim. Woodland encroachment may result from impacts resulting in general lowering of the regional groundwater table, including land drainage on surrounding land, groundwater abstraction upon which the perched water table of the raised bog rests. In the context of damaged bogs, grazing is almost certainly a significant recent factor. It has also been suggested that climate change is responsible. During the course of the last few thousand years most sites that have been studied have shown the persistence of open mire habitat despite much more marked climate shifts than currently experienced.

5.3.4 *Class P5 Primary - closed canopy woodland.*

This category includes both plantation woodland and self-sown woodland. Virtually all wooded bogs in England, apart from one major locality, appear to be self-sown. By contrast, the majority of wooded raised bogs in Scotland have been planted. No wooded bogs are recorded for Wales. There are 238 sites, mainly in Scotland (192), where the major land cover is closed canopy woodland on up to 11,000ha of bog units. Notwithstanding this, a number of plantations have failed to produce vigorous tree growth, as a result of ineffectual drainage and the consequent excessive waterlogging. On a number of sites of conservation importance felling is being programmed and such areas will not be replanted.

5.4 **Secondary raised bog**

The classes described above summarise a range of conditions whose effects are largely confined to the surface layer of the bog. Deep drainage and evapotranspiration from relatively deep-rooting trees such as lodgepole pine (*Pinus contorta*) affects the water contents predominantly in the top metre or so of the peat profile. Although this is critical in terms of the existing flora and also in disrupting the hydrologically active surface layer, or *acrotelm*, the gross shape of the bog may not be not dramatically changed. Andecdotal and observational evidence suggests that under the right conditions the re-establishment of a bog vegetation may be possible.

However, truncation of the peat bog surface, for peat extraction, produces new surfaces upon which vegetation may or may not develop. The species present may be common to bogs and in restricted locations the vegetation have similarities to natural bog. Such surfaces are termed secondary. If peat is physically removed from the bog, the gross topography is radically altered and two factors come into play. First, the removal of peat truncates the vertical layered deposit, referred to earlier as the peat "archive". The record of the peat "archive" cannot be replaced and therefore represents an irreversible change. Second, the gross hydrology of the bog is destabilised. The hydrological functions of the vegetated surface layer (the acrotelm) are removed. Furthermore, when the primary dome has been cut into, abrupt changes in surface level are generated and steep hydraulic gradients created. Peat wastage through oxidation of exposed peat faces, together with surface settlement of upstanding blocks, are thus common features within such areas. None of these factors are considered necessarily unmanageable,

though mitigation options are not well proven, so the risks and costs of restoration tend to escalate in proportion to the damage inflicted.

5.4.1 *Class S1 Secondary revegetated or regenerating cutover bog.*

This class occurs on bog units covering not less than 7,300 ha. On 56 sites it represents the major land class (MLC) and the best (BLC) on 25 (Table 7). On almost 5,000ha it is the major condition class (Table 6). Most of these sites were once subject to commercial or extensive domestic peat cutting but are now no longer actively worked. Several are the subject of active conservation rehabilitation programmes which are already showing signs of recovery. Traditional hand cuttings are often associated with apparently good regeneration of bog species without need for intervention. Restricted areas of abandoned commercial cutting have shown similar recovery, particularly where the block cutting method has been employed. However, where substantial drains exist the process of bog regeneration is much slower or even prevented by continued water loss. Positive management works to retain water on cutover bog in some areas of Europe have been shown to yield surprisingly rapid results, particularly where a large proportion of the peat has been left *in situ*.

5.4.2 *Class S2 Secondary - commercial or domestic workings.*

This class is marked by the preponderance of large sites which, by and large, reflect commercial considerations *vis a vis* economies of scale, a potential variety of peat material and the opportunity to establish a long-term infrastructure for processing. According to Tables 5 and 6, active workings are the major land cover class on 24 sites in Britain. An area greater than 12,828ha is affected indirectly or directly by the impact of commercial working.

5.5 Archaic raised bog

Where the peat has been stripped down to the regional groundwater table, usually for agricultural purposes, or where the bog is now buried beneath industrial or urban development, the remaining peat is termed an *archaic* deposit. It generally retains no bog wildlife interest, but may retain significant archival significance if it represents a geographically isolated peat deposit, or is shown to possess a scientifically important archive, or contain archaeological artefacts (*e.g.* Cundill and Whittington 1992; Hall, Wells, and Huckerby, 1995).

5.5.1 *Class A1. Archaic - bog soils in agricultural use*

Prior to the First World War, agricultural land-claim was probably the largest single cause of raised bog habitat loss in Britain. Continued agricultural drainage and resulting oxidation since that time has caused the soil to waste away at an estimated average rate of 1cm per annum. More bog sites have been converted to agricultural development than to any other form of land-use change. In Britain as a whole 32% of sites have archaic agricultural soils as the major land cover. This figure rises to 44% in England, but is nonetheless the largest single cause of bog loss in Scotland (29%), above forestry plantings (24%).

5.5.2 *Class A2. Archaic - built development*

In England, sites have been lost to built development or used for domestic waste or colliery spoil disposal. In Scotland, several sites have either been lost to or are currently programmed for opencast coal mining. Many bogs have had roads and railways cut through them.

5.5.3 *Class U. Condition not yet established*

A number of sites have been identified as raised bog from, for example, brief statements in survey reports or local knowledge, but nothing else is known about them. These sites remain to be surveyed. Their distribution is entirely restricted to Scotland and the majority are small in area. They amount, however, to 14% of the raised bog sites covering 1,771ha. The majority of these will have been surveyed by the late 1990s, and the inventory will be updated accordingly.

6. THE LISTING OF KNOWN RAISED BOGS IN GREAT BRITAIN

The tables contained within this section of the report represent the substance of the inventory for raised bogs in Britain. Information on sites are held in digitally-mapped form within an ARC/INFO GIS system, but presently the majority of text data relating to each of these mapped sites is stored on spreadsheet software (Microsoft Excel). The data contained within these spreadsheets are presented here as two tables.

Table 7 provides the information for all recorded raised bogs in England, Scotland and Wales. Table 8 gives information for those sites which are termed "intermediate", *i.e.* having characteristics of both raised and blanket bog. It should, however, be noted that a proportion of the intermediate sites will display a high degree of structural complexity compared with the generally held concept of raised bog, sharing many characteristics of blanket bog.

The report deals only with Great Britain, and is thus concerned only with England, Scotland and Wales. Tables 8 and 9 provide 12 items of information for each site:

- **County/District.** In England and Wales the county is used as the standard administrative unit, but in Scotland the pre-1996 District, rather than the Region, is used.

- **NGR.** Represents Ordnance Survey National Grid Reference, given in the form of a standard two-letter and six-figure code (*e.g.* NS 345678).

- **Site name.** Where a name is given for a site on the OS 1:25,000 scale map, that name is generally used. Where a site is more widely known by another name, the commoner name is used. Where no name is given, but the site has been surveyed either by McTeague and Watson (1991) or Ferreira (1977, 1982), the site code used by those authors is employed. Some sites currently have no name.

- **Area.** This represents the area of peat soil digitised from the BGS map series. It therefore represents an estimate of the original extent of peat **not** the present extent of the peat forming habitat. In general this area also represents what is frequently termed the hydrological unit of the bog. Where part of a site lies within another administrative area, the area given is for the part of the site which lies in the current administrative unit. A note that the remainder lies in another county or district is recorded in the **Comments** column.

- **Major land cover class (MLC).** The main form of land cover recorded for the site is noted here. In due course, when all sites have been mapped in detail for their land-cover types and these have been digitised into the inventory, it will be possible to carry out a comprehensive quantitative analysis of land-cover types. In the interim, the predominant class gives a reasonable indication of the general condition of the site. These classes were detailed in **Section 3.8.** The assessment of condition of raised bogs in Great Britain was dealt with in **Section 5**, and the condition classes described in full in **Appendix 2.**

- **Best land cover class (BLC).** Many sites have extensive areas of land-cover types which differ from the natural state, but over parts of almost any site there are often areas ostensibly with some ecological and nature conservation interest. Irrespective of the major land-class (MLC) recorded for the site, the "best" land-class category records the land-class closest to near-natural conditions found on the site. Where a site has been subject to extensive agricultural land-claim the "best" remaining area may, for example, be secondary revegetating cuttings rather than near-natural bog.

- **Primary natural area.** Where an area of primary natural bog (P1) was recorded from a site, the area was estimated using stereo aerial photographs and if they were available habitat maps. The area noted, in hectares (ha), is recorded here.

- **Primary degraded/drained area.** Where an area of primary degraded/drained bog (P2 and 3) was recorded from a site, the area was estimated using stereo aerial photographs and available habitat maps. The area noted, in hectares (ha), is recorded here.

- **SSSI area.** If a site is notified as an SSSI the fact is recorded here. If the SSSI crosses an administrative boundary the area of the SSSI is recorded only for one unit. The remaining administrative units note only that an SSSI exists (Y). Where the site name differs from the SSSI name, a note is made in the **Comments** field. Some sites are notified totally or partially for their peatland interest and can encompass larger units of nature conservation interest.

- **NNR.** This field records whether the site is covered by National Nature Reserve status (NNR). There are a number of complicating factors relating to the land-holding and the terms of the agreement which mean that published area figures can be misleading.

- **Planning consent area.** Areas of current planning consents for peat extraction were supplied to the inventory by the Department of Environment (Minerals Division) and the Scottish Office, as well as by individual Scottish District Planning Offices. The area of current planning consent is noted and accurate as of December 1994.

- **Comments.** This field notes if the site is a County Trust Reserve, the SSSI name if it differs from the site name, and the extent of the site lying within other administrative units.

Table 8.1 Raised Bogs in England

District	NGR	Site name	Area	Major land-cover	"Best" land-cover	Primary natural area P1	Primary degraded area P2, P3	SSSI area	NNR	Planning consent area	Comments
Cambridgeshire	TL 231884	Holme Fen	1,151	A 1	P 5			262	Y		Holme Fen NNR
Cheshire	SJ 767554	Bibbys Moss	8	S 2	P 5					7	
Cheshire	SJ 874613	Congleton Moss	26	A 1	P 5						
Cheshire	SJ 905711	Danes Moss	204	A 1	S 1			53		29	Danes Moss SSSI
Cheshire	SJ 820685	Gleads Moss	8	P 5	P 5			3			Gleads Moss SSSI
Cheshire	SJ 669931	Holcroft Moss	217	A 1	P 1	5		19		65	Holcroft Moss SSSI, CWT Reserve
Cheshire	SJ 713745	Holford Moss	19	P 5	P 5						
Cheshire	SJ 825807	Lindow Moss	165	A 1	S 1					36	
Cheshire	SJ 839698	Mere Moss	8	P 5	P 5						
Cheshire	SJ 826825	North Lindow Moss	1	A 1	A 1						
Cheshire	SJ 665902	Rixton Moss	497	A 1	S 1			85			Risley Moss SSSI
Cheshire	SJ 823796	South Lindow Moss	28	A 1	A 1						
Cheshire	SJ 827793	South Lindow Moss	5	A 1	A 1						
Cheshire	SJ 774547	White Moss	30	A 2	S 1					30	
Cheshire	SJ 758559	-	12	A 1	A 1						
Cheshire	SJ 756564	-	12	A 1	A 1						
Cheshire	SJ 748761	Victoria Wood	7	P 5	P 5						
Cheshire	SJ 747708	Rudheath Woods	7	P 5	P 5						
Cheshire	SJ 783750	Lower Moss	6	P 5	P 5						
Cheshire	SJ 762554	-	5	P 5	P 5						
Cheshire	SJ 776555	Henbury Moss	4	A 1	A 1						
Cheshire	SJ 859722	-	2	A 1	A 1						
Cheshire	SJ 817807	-	1	A 1	A 1						
Cheshire	SJ 815804	-	1	A 1	A 1						
Cheshire	SJ 816805	-	1	A 1	A 1						
Cheshire	SJ 817809	-	0	A 1	A 1						
Cheshire	SJ 831818	-	0	A 1	A 1						
Cheshire	SJ 827821	-	0	A 1	A 1						
Cheshire	SJ 830819	-	0	A 1	A 1						
Cheshire	SJ 729808	Mere Moss Wood	43	P 5	P 5						Added at last revision
Cheshire	SJ 859673	Cocks Moss	24	P 5	P 5						Added at last revision
Cheshire	SJ 867695	Crab Moss and Tidnock Wood	23	P 5	P 5						Added at last revision
Cheshire	SJ 790756	Moss Farm Wood	19	P 5	P 5						Added at last revision
Cheshire	SJ 826794	Soss Moss Wood	17	P 5	P 5						Added at last revision
Cheshire	SJ 823726	The Mosses	14	P 5	P 5						Added at last revision
Cheshire	SJ 803750	Stockin Moss	11	P 5	P 5						Added at last revision
Cheshire	SJ 640825	Stretton Moss	7	P 5	P 5						Added at last revision
Cheshire	SJ 550940	Parrs Moss	3	S 1	S 1						Added at last revision
Cheshire	SJ 698832	Sink Moss	93	A 1	A 1						Added at last revision
Cheshire	SJ 553722	Hatchmere	2	P 4	P 4						Added at last revision
Cumbria	SD 191848	Arnaby Moss	58	S 1	P 4			Y			Duddon Mosses SSSI
Cumbria	SD 223852	Bank End Moss	214	S 1	P 1	48	56	356			Duddon Mosses SSSI
Cumbria	NY 029108	Black Moss	13	P 2	P 2			16			
Cumbria	NY 422676	Black Snib	67	P 4	P 3		3				
Cumbria	SD 458906	Blakebank Moss	10	P 4	P 4						
Cumbria	NY 492691	Bolton Fell	401	S 2	P 1	12		316		284	
Cumbria	NY 202595	Bowness Common	1,106	P 2	P 1	100	580	759			Bowness Common SSSI
Cumbria	NY 306574	Broughmoor Wood	38	P 5	P 5						
Cumbria	SD 462900	Cock Moss	23	P 4	P 4						
Cumbria	NY 363719	Dicks Moss	12	A 1	A 1						

Table 8.1 Raised Bogs in England

District	NGR	Site name	Area	Major land-cover	"Best" land-cover	Primary natural area P1	Primary degraded area P2, P3	SSSI area	NNR	Planning consent area	Comments
Cumbria	NY 344713	Drownedcow Moss	6	A 1	A 1						
Cumbria	NY 254584	Drumburgh Moss	205	P 2	P 1	20	100	189			CWT Reserve
Cumbria	SD 348802	Ellerside Moss	246	P 3	P 1	20	150	Y	Y		Roudsea Wood & Mosses SSSI
Cumbria	SD 345857	Elmlath Moss	10	P 5	P 5						
Cumbria	SD 338825	Fish House/Deer Dyke	143	P 3	P 1	15	100	476	Y		Roudsea Wood & Mosses SSSI
Cumbria	SD 458824	Foulshaw Moss	287	P 5	P 2		5				
Cumbria	NY 238604	Glasson Moss	258	P 2	P 1	38	75	225	Y		Glasson Moss SSSI
Cumbria	NY 334720	Greenwrae Flow	1	P 2	P 2		1				
Cumbria	NY 115468	Hangingshaw Moss	1	P 3	P 2						
Cumbria	NY 380615	Harker Moss	12	P 4	P 3		3				
Cumbria	SD 240875	Heathwaite Moss	40	S 1	P 1	10		Y			Duddon Mosses SSSI
Cumbria	SD 421866	High Moss	7	A 1	A 1						
Cumbria	SD 421860	High Moss	4	A 1	A 1						
Cumbria	NY 454651	Hunley Moss	11	P 2	P 2		5				
Cumbria	SD 333844	Ireland Moss	25	P 5	P 5						
Cumbria	NY 048045	Lingbank Moor	10	P 5	P 5						
Cumbria	SD 463873	Lyth Moss	2	A 1	A 1						
Cumbria	NY 413620	Mampus Wood	5	P 5	P 4						
Cumbria	SD 432823	Meathop/Nichols Mosses	148	P 4	P 1	30		160			Two SSSIs (Meathop & Nichols Mosses)
Cumbria	SD 308794	Newland Moss	11	P 3	P 3		8				
Cumbria	SD 311796	Newland Moss	8	P 3	P 3						
Cumbria	SD 303793	Newland Moss	4	P 3	P 3						
Cumbria	SD 305794	Newland Moss	1	P 3	P 3						
Cumbria	NY 332695	Newton Flow	16	P 5	P 5						
Cumbria	NY 252512	Oulton Moss	53	P 3	P 2		20	24			
Cumbria	SD 480876	Park Moss	33	P 4	P 3		5				
Cumbria	SD 465855	Rawsons Moss	10	A 1	A 1						
Cumbria	SD 324839	Roam Moss	32	P 3	P 3		15				
Cumbria	NY 345662	Rosetrees Moss	23	A 1	A 1						
Cumbria	SD 335883	Rusland Moss	63	P 5	P 4			96	Y		Rusland Valley Mosses SSSI
Cumbria	NY 085450	Salta Moss	125	S 1	S 1			45			Salta Moss SSSI
Cumbria	SD 466889	Savinhill Moss	24	P 5	P 2		5				
Cumbria	NY 430636	Scaleby Moss	99	S 1	P 2		10	69			Scaleby Moss SSSI
Cumbria	NY 420628	Scaleby Moss	61	S 1	S 1						
Cumbria	SD 189856	Shaw Moss	9	S 1	P 2		2	Y			Duddon Mosses SSSI
Cumbria	NY 345692	Solway Moss	436	S 2	S 2					364	
Cumbria	SD 422870	Stock Moss	6	A 1	A 1						
Cumbria	SD 343859	The Grams	18	P 5	P 5						
Cumbria	NY 221531	Wedholme Flow	831	S 2	P 1	125		780	Y	230	
Cumbria	SD 231874	White Moss	118	A 1	P 1	30	25	Y			Duddon Mosses SSSI
Cumbria	NY 461606	White Moss - Crosbymoor	31	S 1	P 2			39			White Moss - Crosbymoor
Cumbria	SD 326823	-	19	P 3	P 3		10				
Cumbria	NY 443706	-	13	P 5	P 5						
Cumbria	SD 431805	-	12	P 5	P 5						
Cumbria	NY 354642	-	8	P 4	P 4						
Cumbria	NY 431624	-	8	P 4	P 4						
Cumbria	SD 477850	-	7	P 4	P 4						
Cumbria	NY 567617	-	5	P 4	P 4						
Cumbria	NY 516609	-	4	A 1	A 1						
Cumbria	SD 345870	-	4	A 1	A 1						

Table 8.1 Raised Bogs in England

District	NGR	Site name	Area	Major land-cover	"Best" land-cover	Primary natural area P1	Primary degraded area P2, P3	SSSI area	NNR	Planning consent area	Comments
Cumbria	SD 419826	-	4	A 1	A 1						
Cumbria	NY 566618	-	3	P 4	P 4						
Cumbria	SD 207883	-	3	P 5	P 5						
Cumbria	NY 033063	-	2	A 1	A 1						
Cumbria	NY 097001	-	2	P 5	P 5						
Cumbria	NY 567618	-	2	P 4	P 4						
Cumbria	NY 033061	-	1	A 1	A 1						
Cumbria	SD 420825	-	1	A 1	A 1						
Cumbria	NY 020060	-	1	A 1	A 1						
Cumbria	NX 992124	-	1	A 1	A 1						
Cumbria	NY 029062	-	1	P 5	P 5						
Cumbria	NY 514608	-	1	A 1	A 1						
Cumbria	NX 990127	-	1	A 1	A 1						
Devon	SX 605722	Tor Royal Bog	8	P 1	P 1	8		58			Tor Royal Bog SSSI
Durham	NH 719459	-	3	P 3	P 3						
Durham	NZ 151203	-	29	A 1	A 1						
Greater London	TQ 323791	-	4	A 2	A 2						
Greater Manches	SJ 921989	Ashton Moss	147	A 1	A 1						
Greater Manches	SJ 743917	Carrington Moss	364	A 1	S 2						
Greater Manches	SJ 711964	Chat Moss	2,587	A 1	S 1			92		305	Astley & Bedford Mosses SSSI (not coincident with planning consent)
Greater Manches	SD 751038	Clifton Moss	280	A 2	S 2						
Greater Manches	SJ 613955	Highfield Moss	8	S 1	S 1			21			Highfield Moss SSSI
Greater Manches	SD 592027	Ince Moss	64	A 2	S 1			68			Bryn Marsh & Ince Moss SSSI
Greater Manches	SD 604041	Ince Moss	30	A 1	A 1						
Greater Manches	SD 635101	Red Moss	94	S 1	S 1			47			Red Moss SSSI
Greater Manches	SJ 787969	Trafford Park	73	A 2	A 2						
Greater Manches	SD 832067	Unsworth Moss	40	A 1	A 1						
Greater Manches	SD 878036	-	110	A 2	A 2						
Greater Manches	SJ 774972	-	6	A 1	A 1						
Humberside	SE 744167	Thorne Moors	780	S 2	P 2			559	Y	482	1980 ha in total, 1200 ha in S. Yorkshire
Humberside		Epworth Turbary	32	S 1	S 1			32			Added at last revision
Humberside		Haxey Turbary	14	S 1	S 1			14			Added at last revision
Humberside	SE 686191	-	6	A 1	A 1						
Humberside	SE 686184	-	3	A 1	A 1						
Lancashire	SD 476043	Bickerstaffe/Holland Moss	325	A 1	P 2		9			12	368 ha in total, 43 ha in Merseyside (Holland Moss)
Lancashire	SD 521241	Farrington Moss	120	A 1	A 1						
Lancashire	SD 423606	Heysham Moss	19	S 1	P 2		3	13			
Lancashire	SD 494020	Holiday Moss	12	A 2	S 2					45	164 ha in total, 152 ha in Merseyside
Lancashire	SD 467127	Hoscar Moss	231	P 5	P 5						
Lancashire	SD 346319	Lytham Moss	167	A 1	A 1						
Lancashire	SD 353311	Lytham Moss	23	A 1	A 1						
Lancashire	SD 405164	Martin Mere/Halsall Moss	7,976	A 1	A 1			140			2 SSSIs, Martin Mere & Downholland Moss
Lancashire	SD 478164	Mawdesley Moss	268	A 1	A 1						
Lancashire	SD 474774	Silverdale Moss	38	A 1	P 2						
Lancashire	SD 500718	Warton Moss	150	A 1	A 1						
Lancashire	SD 427445	Winmarleigh Moss	4,097	A 1	P 1	12	5	90			Winmarleigh Moss SSSI
Lancashire	SD 435026	-	102	P 5	P 5						
Lancashire	SD 503232	-	29	A 1	A 1						
Lancashire	SD 456034	-	26	A 1	A 1						
Lancashire	SD 457070	-	11	P 3	P 3		10				

Table 8.1 Raised Bogs in England

District	NGR	Site name	Area	Major land-cover	"Best" land-cover	Primary natural area P1	Primary degraded area P2, P3	SSSI area	NNR	Planning consent area	Comments
Lancashire	SD 471177	-	3	A 1	A 1						
Lancashire	SD 380473	Fentons Moss	3	A 1	A 1		2				
Lancashire	SD 475150	-	2	A 1	A 1						
Lancashire	SD 474152	-	1	A 1	A 1						
Merseyside	SD 495013	Holiday Moss	152	A 2	S 2					45	164 ha in total, 12 ha in Lancashire
Merseyside	SD 480035	Holland Moss	43	A 1	A 1						368 ha in total, 325 ha in Lancashire; Bickerstaffe
Merseyside	SJ 456963	Knowsley Park Moss	93	A 1	A 1						
Merseyside	SD 319091	Martin Mere Complex	98	A 1	A 1			Y			7976 ha in Lancashire; Downholland Moss SSSI
Merseyside	SJ 448986	Simonswood Moss	1,181	A 1	S 2					124	
Merseyside	SD 310030	-	160	A 1	A 1						
Merseyside	SJ 427948	-	10	A 1	A 1						
North Yorkshire	SD 761666	Austwick Moss	45	P 4	P 3		5	84			Austwick & Lawkland Mosses SSSI
North Yorkshire	SD 786617	Cocket Moss	19	P 3	P 3		20	20			Cocket Moss SSSI
North Yorkshire	SD 783601	Hesley Moss	10	S 1	P 3		4	11			Hesley Moss SSSI
North Yorkshire	SD 886667	Malham Tarn Moss	29	P 2	P 1	20		30	Y		Malham-Arncliffe SSSI
North Yorkshire	SD 805695	Swarth Moor	61	P 2	P 2		25	34			Swarth Moss Moor SSSI
Northumberland	NT 971377	Ford Moss	55	P 4	P 4			63			Ford Moss SSSI
Northumberland	NU 055365	Holburn Moss	61	P 2	P 1	10	15	80		20	Holburn Moss and Lake SSSI
Northumberland	NT 997376	Kemping Moss	79	S 2	P 3		30			25	
Northumberland	NT 997390	Moss Wood	35	P 5	P 5						
Northumberland	NT 936470	Shoreswood Bog	12	A 1	A 1						
Northumberland	NU 144321	-	21	A 1	A 1						
Northumberland	NT 923476	-	6	A 1	A 1						
Northumberland	NU 143316	-	6	A 1	A 1						
Northumberland	NZ 144705	-	3	A 2	A 2						
Northumberland	NU 257010	-	3	A 2	A 2						
Northumberland	NU 038455	-	3	P 5	P 5						
Northumberland	NU 170345	-	3	A 1	A 1						
Shropshire	SJ 375367	Groves Moss	12	P 5	P 5						
Shropshire	SJ 412323	Lee Wood	2	P 5	P 5						
Shropshire	SJ 447341	Lyneal Moss	42	P 5	P 5						
Shropshire	SJ 411311	Smithy Moor	91	P 5	P 5						
Shropshire	SJ 570268	Top Moss	54	P 5	P 5						
Shropshire	SJ 475341	Wem Moss	15	P 2	P 2		15	Y			Part of Fenns & Whixall SSSI; SWT Reserve
Shropshire	SJ 432308	Whattall Moss	20	P 5	P 5						
Shropshire	SJ 491355	Whixall & Bettisfield Mosses	183	S 1	P 4			258	Y	71	954 ha in total (incl. Wem Moss), 656 ha in Clwyd (Fenns & Whixall Moss SSSI)
Shropshire	SJ 463324	-	73	A 1	A 1						
Shropshire	SJ 330215	-	13	P 5	P 5						
Shropshire	SJ 452353	-	12	P 3	P 3						
Shropshire	SJ 531294	-	8	A 1	A 1						
Shropshire	SJ 366365	-	7	A 1	A 1						
Shropshire	SJ 438338	-	7	A 1	A 1						
Shropshire	SJ 365358	-	6	A 1	A 1						
Shropshire	SJ 373363	-	6	A 1	A 1						
Shropshire	SJ 354306	-	5	P 5	P 5						
Shropshire	SJ 528309	-	4	A 1	A 1						
Shropshire	SJ 424348	-	4	A 1	A 1						
Shropshire	SJ 362271	-	3	A 1	A 1						
Shropshire	SJ 439323	-	3	A 1	A 1						
Shropshire	SJ 411328	-	3	A 1	A 1						

Table 8.1 Raised Bogs in England

District	NGR	Site name	Area	Major land-cover	"Best" land-cover	Primary natural area P1	Primary degraded area P2, P3	SSSI area	NNR	Planning consent area	Comments
Shropshire	SJ 420323	-	3	A 1	A 1						
Shropshire	SJ 419346	-	2	P 5	P 5						
Shropshire	SJ 384345	-	2	A 1	A 1						
Shropshire	SJ 422360	-	2	A 1	A 1						
Shropshire	SJ 405332	-	2	A 1	A 1						
Shropshire	SJ 413352	-	2	A 2	A 2						
Shropshire	SJ 524303	-	1	A 1	A 1						
Shropshire	SJ 428350	-	1	A 1	A 1						
Shropshire	SJ 448356	-	1	A 1	A 1						
Somerset	ST 405410	Shapwick Heath	3,219	S 2	P 2			1,523	Y	1,031	Contains 5 SSSIs (see below)
Somerset	ST 449443	Westhay Moor	2,015	S 2	S 2			1,457		230	Contains 2 SSSIs (see below)
Somerset	ST 502406	-	140	A 1	A 1						
Somerset	ST 483415	-	95	A 1	A 1						
Somerset	ST 505422	-	57	A 1	A 1						
Somerset	ST 500431	-	22	A 1	A 1						
Somerset	ST 363421	-	11	S 2	S 2						
Somerset	ST 489446	-	3	S 2	S 2						
Somerset	ST 483450	-	1	S 2	S 2						
South Yorkshire	SE 709051	Hatfield Moors	1,559	S 2	P 3		75	1,401		1,293	
South Yorkshire	SE 731153	Thorne Moors	1,200	S 2	S 1			1,313	Y	1,121	1980 ha in total, 780 ha in Humberside
Staffordshire	SJ 777483	Craddocks Moss	8	P 5	P 5						Added at last revision
Staffordshire	SJ 800400	Chorlton Moss	5	P 5	P 2						Added at last revision
Tyne & Wear	NZ 190741	Prestwick Carr	51	P 5	P 3		10	51			
West Sussex	TQ 035147	Amberley Wildbrooks	84	A 1	A 1			84			Amberley Wildbrooks SSSI
[Cornwall	SW 950600	Goss Moor	702	S 1	P 4			702	Y		Goss & Tregoss Moor SSSI]

Shapwick Heath contains:
Catcott, Eddington & Chilton Moors SSSI
Meare Heath SSSI
Shapwick Heath SSSI
Street Heath SSSI
Sharpham Moor Plot SSSI

Westhay Moor contains:
Tealham & Tadham Moors SSSI
Westhay Moor SSSI

Thorne Moors contains:
Goole Moors
Crowle Waste
Rawcliffe Moor

Table 8.2 Raised Bogs in Scotland

District	NGR	Site name	Area	Major land-cover	"Best" land-cover	Primary natural area P1	Primary degraded area P2, P3	SSSI area	NNR	Planning consent area	Comments
Angus	NO 353575	Balloch Moss	16	P 2	P 1	3	7	16			
Angus	NO 515427	Dilty Moss	38	S 1	S 1			38			
Angus	NO 299499	Egnomoss	6	S 1	P 2		1				
Annandale & Eskdale	NY 302698	-	21	A 1	A 1						
Annandale & Eskdale	NY 310702	-	16	A 1	A 1						
Annandale & Eskdale	NY 231721	-	13	P 5	P 3						
Annandale & Eskdale	NY 373768	-	12	A 1	P 3						
Annandale & Eskdale	NY 287721	-	9	A 1	A 1						
Annandale & Eskdale	NY 338762	Beckhall Moss	6	U	U						
Annandale & Eskdale	NY 284746	Branteth Flow	50	P 5	P 5						
Annandale & Eskdale	NY 262737	Burnfoothill Moss	27	A 1	P 2		3				
Annandale & Eskdale	NY 318737	Cadgill Flow	24	P 2	P 1	5	5			30	
Annandale & Eskdale	NY 323717	Cowgarth Flow	13	P 4	P 2		7				
Annandale & Eskdale	NY 227712	Creca Moss	45	S 2	S 2					40	
Annandale & Eskdale	NY 286737	Flowdens Flow	17	P 5	P 5						
Annandale & Eskdale	NY 274729	Gillshaw Flow	87	P 5	P 5						
Annandale & Eskdale	NY 383755	Graystone Flow	20	P 5	P 5						
Annandale & Eskdale	NY 330725	Greenwrae Flow	19	P 2	P 2		6				Part in Cumbria, England
Annandale & Eskdale	NY 096813	Heck Moss	5	P 5	P 5						
Annandale & Eskdale	NY 079799	Hightae Moss	34	P 5	P 4						
Annandale & Eskdale	NY 383771	Holehouse Flow	23	P 5	P 5						
Annandale & Eskdale	NY 140700	Kelhead Flow	38	P 5	P 4						
Annandale & Eskdale	NY 329700	Newton Flow	9	P 5	P 5						Part in Cumbria, England
Annandale & Eskdale	NY 265685	Nutberry Moss	339	S 2	P 2		10			21	New consent applied for
Annandale & Eskdale	NY 115662	Priestside Flow	195	P 5	P 5						228 ha in total, 33 ha in Nithsdale
Annandale & Eskdale	NY 295718	Raeburn Flow	78	P 1	P 1	60	10	65			
Annandale & Eskdale	NY 081880	Redhalls Moss	71	P 5	P 5						
Annandale & Eskdale	NY 049815	Skipmyre Moss	1	A 1	A 1						5 ha in total, 4 ha in Nithsdale
Annandale & Eskdale	NY 075842	Whitereed Wood	14	P 5	P 5						
Argyll & Bute	NM 906397	-	122	P 5	P 2		14				
Argyll & Bute	NM 914365	-	56	P 2	P 1	14	30				
Argyll & Bute	NM 911363	-	2	P 2	P 2		2				
Argyll & Bute	NR 675223	Aros Moss	162	A 2	P 2		30				
Argyll & Bute	NR 828952	Crinan Moss	117	P 2	P 2		100	0	Y		Moine Mhor SSSI
Argyll & Bute	NR 821926	Moine Mhor	626	P 2	P 2		300	1,195	Y		Moine Mhor SSSI
Argyll & Bute	NM 917357	Moss of Achnacree	220	P 2	P 2		100			2	
Banff & Buchan	NJ 802461	-	45	U	U						
Banff & Buchan	NJ 802406	-	44	U	U						
Banff & Buchan	NJ 818460	-	37	U	U						
Banff & Buchan	NJ 855585	-	27	U	U						
Banff & Buchan	NJ 795420	-	26	U	U						
Banff & Buchan	NJ 814489	-	22	U	U						
Banff & Buchan	NJ 861574	-	21	S 1	S 1						
Banff & Buchan	NJ 736323	-	21	U	U						
Banff & Buchan	NJ 812439	-	21	U	U						
Banff & Buchan	NJ 866601	-	21	U	U						

Table 8.2 Raised Bogs in Scotland

District	NGR	Site name	Area	Major land-cover	"Best" land-cover	Primary natural area P1	Primary degraded area P2, P3	SSSI area	NNR	Planning consent area	Comments
Banff & Buchan	NJ 822426	-	21	U	U						
Banff & Buchan	NJ 809482	-	19	U	U						
Banff & Buchan	NJ 945580	-	19	U	U						
Banff & Buchan	NJ 593548	-	16	S 1	P 2		2				
Banff & Buchan	NJ 849589	-	13	U	U						
Banff & Buchan	NJ 878582	-	12	U	U						
Banff & Buchan	NJ 822448	-	12	U	U						
Banff & Buchan	NJ 932583	-	11	A 1	A 1						
Banff & Buchan	NJ 800471	-	11	U	U						
Banff & Buchan	NJ 616577	-	11	S 1	P 2		2				
Banff & Buchan	NJ 790410	-	10	U	U						
Banff & Buchan	NJ 804426	-	10	U	U						
Banff & Buchan	NJ 930593	-	9	S 1	P 2		3				
Banff & Buchan	NJ 620554	-	9	U	U						
Banff & Buchan	NJ 802431	-	9	U	U						
Banff & Buchan	NJ 808360	-	8	U	U						
Banff & Buchan	NJ 901594	-	8	U	U						
Banff & Buchan	NJ 807509	-	7	U	U						
Banff & Buchan	NJ 804352	-	7	U	U						12 ha in total, 5 ha in Gordon
Banff & Buchan	NJ 995630	-	7	A 1	A 1						
Banff & Buchan	NJ 637518	-	6	U	U						
Banff & Buchan	NJ 801481	-	6	U	U						
Banff & Buchan	NJ 527587	-	6	P 5	P 5						
Banff & Buchan	NJ 788414	-	6	U	U						
Banff & Buchan	NJ 958642	-	6	A 1	A 1						
Banff & Buchan	NJ 633513	-	6	U	U						
Banff & Buchan	NJ 906589	-	6	P 1	P 1	2					
Banff & Buchan	NJ 944590	-	5	A 1	A 1						
Banff & Buchan	NJ 987567	-	5	U	U						
Banff & Buchan	NJ 804459	-	5	U	U						
Banff & Buchan	NJ 880603	-	5	U	U						
Banff & Buchan	NJ 919597	-	5	P 2	P 2		3				
Banff & Buchan	NJ 851571	-	4	A 1	A 1						
Banff & Buchan	NJ 873599	-	4	U	U						
Banff & Buchan	NJ 794471	-	4	U	U						
Banff & Buchan	NJ 615551	-	4	U	U						
Banff & Buchan	NJ 633557	-	4	U	U						
Banff & Buchan	NJ 533586	-	4	P 5	P 5						
Banff & Buchan	NJ 807423	-	4	U	U						
Banff & Buchan	NJ 626553	-	4	U	U						
Banff & Buchan	NJ 886594	-	4	U	U						
Banff & Buchan	NJ 622557	-	3	U	U						
Banff & Buchan	NJ 629575	-	3	A 1	A 1						
Banff & Buchan	NJ 874613	-	3	U	U						
Banff & Buchan	NJ 898600	-	3	U	U						
Banff & Buchan	NJ 903638	-	3	A 1	A 1						

Table 8.2 Raised Bogs in Scotland

District	NGR	Site name	Area	Major land-cover	"Best" land-cover	Primary natural area P1	Primary degraded area P2, P3	SSSI area	NNR	Planning consent area	Comments
Banff & Buchan	NJ 734327	-	3	U	U						
Banff & Buchan	NJ 867585	-	3	U	U						
Banff & Buchan	NJ 714330	-	3	U	U						
Banff & Buchan	NK 052565	-	2	A 1	A 1						
Banff & Buchan	NJ 642550	-	2	U	U						
Banff & Buchan	NJ 996569	-	2	U	U						
Banff & Buchan	NJ 889608	-	2	U	U						
Banff & Buchan	NJ 822434	-	2	U	U						
Banff & Buchan	NJ 942575	-	2	U	U						
Banff & Buchan	NJ 993590	-	2	U	U						
Banff & Buchan	NJ 856573	-	2	A 1	A 1						
Banff & Buchan	NJ 889595	-	2	U	U						
Banff & Buchan	NJ 730325	-	1	U	U						
Banff & Buchan	NJ 978585	-	1	A 1	A 1						
Banff & Buchan	NJ 923591	-	1	U	U						
Banff & Buchan	NK 001589	-	1	U	U						
Banff & Buchan	NJ 816432	-	1	U	U						
Banff & Buchan	NJ 924661	-	1	U	U						
Banff & Buchan	NJ 882643	-	0	A 1	A 1						
Banff & Buchan	NJ 620538	Auchintoul Moss	63	S 1	S 1						
Banff & Buchan	NJ 915587	Auchmacleddie	57	S 1	P 1	10					
Banff & Buchan	NJ 616560	Blackhills Moss	17	U	U						
Banff & Buchan	NJ 937647	Bradmoss	6	A 1	A 1						
Banff & Buchan	NJ 879597	CF 30/29	18	U	U						
Banff & Buchan	NJ 884622	CF 30/38	5	A 1	A 1						
Banff & Buchan	NJ 882607	CF 30/7	4	A 1	A 1						
Banff & Buchan	NJ 893614	CF 30/9	12	S 1	P 2		4				
Banff & Buchan	NJ 834565	Corthie Moss	240	S 1	P 1	100					
Banff & Buchan	NJ 882586	Craigmaud	17	P 1	P 1	10					
Banff & Buchan	NJ 626568	Fishermans Moss	43	U	U						
Banff & Buchan	NJ 853579	Greens of Auchmedden	101	S 1	P 2		20				
Banff & Buchan	NJ 647522	Kettlepool Moss	28	U	U						
Banff & Buchan	NK 002547	Kininmonnth Moss	232	S 1	P 2		30				
Banff & Buchan	NK 042335	Lochlundie Moss	90	S 1	P 3		30				178 ha in total, 88 ha in Gordon
Banff & Buchan	NK 069424	Moss Gray	100	U	U						
Banff & Buchan	NJ 630580	Moss of Banff	16	S 1	P 2		3				
Banff & Buchan	NJ 630545	Moss of Corskie	15	U	U						
Banff & Buchan	NJ 573524	Moss of Crombie	74	S 1	P 1	12	3	125			135 ha in total, 61 ha in Moray
Banff & Buchan	NJ 680359	Moss of Redhills	24	U	U						
Banff & Buchan	NJ 952577	Moss-side	18	S 1	S 1						
Banff & Buchan	NJ 881615	North Cowfords Moss	11	P 2	P 2		7				
Banff & Buchan	NJ 905601	Red Moss	52	S 1	P 2		4				Moss of Clochforbie?
Banff & Buchan	NJ 602570	Reidside Moss	109	S 1	P 2		24	84			
Banff & Buchan	NK 040514	Rora Moss	378	S 2	P 2					57	"active" workings, though expired in 1989
Banff & Buchan	NK 031542	St Fergus Moss	726	S 2	S 2					182	"active" workings, though expired in 1989
Banff & Buchan	NJ 527575	Whitley Moss	83	P 5	P 2		8				101 ha in total, 18 ha in Moray

Table 8.2 Raised Bogs in Scotland

District	NGR	Site name	Area	Major land-cover	"Best" land-cover	Primary natural area P1	Primary degraded area P2, P3	SSSI area	NNR	Planning consent area	Comments
Berwickshire	NT 859647	-	7	U	U						
Berwickshire	NT 853583	-	5	A 1	A 1						
Berwickshire	NT 854617	-	3	A 1	A 1						
Berwickshire	NT 900590	-	3	P 5	P 5						
Berwickshire	NT 892583	-	1	P 5	P 5						
Berwickshire	NT 895583	-	1	P 5	P 5						
Berwickshire	NT 888577	-	1	P 5	P 5						
Berwickshire	NT 889589	-	1	A 1	A 1						
Berwickshire	NT 889580	-	1	P 5	P 5						
Berwickshire	NT 899591	-	0	P 5	P 5						
Berwickshire	NT 891581	-	0	P 5	P 5						
Berwickshire	NT 892581	-	0	P 5	P 5						
Berwickshire	NT 684498	Dogden Moss	116	P 3	P 1	80	21	1,175			Greenlaw Moor SSSI
Berwickshire	NT 843669	Drone Moss	23	P 1	P 1	8		24			
Berwickshire	NT 636425	Gordon Moss	164	P 5	P 5			0			349 ha in total, 185 ha in Ettrick
Berwickshire	NT 826682	Penmanshiel Moss	13	P 5	P 5						
City of Aberdeen	NO 933997	-	16	P 3	P 3		5				
City of Aberdeen	NO 927997	-	15	A 1	A 1						
City of Aberdeen	NJ 833033	-	11	P 5	P 5						
City of Aberdeen	NJ 853040	-	8	P 5	P 5						
City of Aberdeen	NJ 843066	-	8	P 3	P 3						14 ha in total, 6 ha in Gordon
City of Aberdeen	NJ 951026	-	2	A 1	A 1						
City of Aberdeen	NJ 926138	-	1	A 1	A 1						
City of Aberdeen	NJ 846074	-	1	A 1	A 1						
City of Aberdeen	NO 923997	-	1	U	U						
City of Aberdeen	NJ 913124	Grandhome Moss	35	P 4	P 2		2				
City of Dundee	NO 306309	-	0	U	U						
City of Dundee	NO 307310	-	0	U	U						
City of Edinburgh	NT 162635	Red Moss (Balerno)	12	P 1	P 1	12		63			Balerno Common SSSI
City of Edinburgh	NT 113614	Templehill	17	P 2	P 2		17				
City of Glasgow	NS 659672	Cardowan Moss	56	S 1	S 1						
City of Glasgow	NS 696662	Commonhead Moss	62	A 2	A 2						122 ha in total, 60 ha in Monklands
City of Glasgow	NS 678672	Gartloch	124	A 1	A 1						174 ha in total, 51 ha in Strathkelvin
Clackmannan	NS 979926	Dun Moss	26	P 5	P 1	5					40 ha in total, 14 ha in Dunfermline
Clackmannan	NS 966933	Piperpool Moss	4	A 2	P 2		1				
Clydesdale	NS 802472	-	9	P 2	P 2						11 ha in total, 2 ha in Hamilton
Clydesdale	NS 928460	-	7	A 1	A 1						
Clydesdale	NS 968482	-	5	P 2	P 2						
Clydesdale	NT 039483	-	3	P 5	P 5						
Clydesdale	NS 989524	-	2	A 1	A 1						
Clydesdale	NS 901432	-	1	A 1	A 1						
Clydesdale	NS 923481	Blacklaw Moss	79	S 2	P 2		17			(41)	Expired 1989
Clydesdale	NS 759398	Blood Moss	28	P 3	P 1	10	14				
Clydesdale	NS 764393	Blood Moss	5	P 3	P 1	3	1				
Clydesdale	NS 754396	Blood Moss	3	P 3	P 1	2	1				
Clydesdale	NT 064471	Borland Moss	8	P 1	P 1	8	5				

Table 8.2 Raised Bogs in Scotland

District	NGR	Site name	Area	Major land-cover	"Best" land-cover	Primary natural area P1	Primary degraded area P2, P3	SSSI area	NNR	Planning consent area	Comments
Clydesdale	NS 782459	Cander Moss	14	P 1	P 1						30 ha in total, 16 ha in Hamilton
Clydesdale	NS 973479	Carnwath Moss	371	P 5	P 1	35	48	147		67	
Clydesdale	NS 826362	Coalburn Moss	154	P 1	P 1	79	48	196		23	
Clydesdale	NS 933478	Cranley Moss	83	P 2	P 1	22	43	93			
Clydesdale	NS 837202	Crawick Moss	75	P 1	P 1	34	44				
Clydesdale	NT 119479	Ingraston Moss	4	A 1	A 1						27 ha in total, 23 ha in Tweeddale
Clydesdale	NS 865517	Kingshaw Moss	33	P 1	P 1	18	14			(12)	Expired 1990
Clydesdale	NS 770401	NS73.10	13	A 1	A 1						
Clydesdale	NS 769391	NS73.11	2	A 1	A 1						
Clydesdale	NS 777387	NS73.12	24	A 1	P 2		7				
Clydesdale	NS 770373	NS73.13	11	P 2	P 2		13				
Clydesdale	NS 773370	NS73.14	3	A 1	A 1						
Clydesdale	NS 870267	NS82.11	26	P 1	P 1	16					
Clydesdale	NS 872261	NS82.12	25	P 1	P 1	12	3				
Clydesdale	NS 830236	NS82.32	3	P 5	P 5						
Clydesdale	NS 831233	NS82.33	3	A 1	A 1						
Clydesdale	NS 844211	NS82.44	27	A 1	A 1						
Clydesdale	NS 851216	NS82.45	4	P 5	P 2						
Clydesdale	NS 851223	NS82.46	12	P 2	P 2		11				
Clydesdale	NS 848392	NS83.1	4	A 1	A 1						
Clydesdale	NS 841368	NS83.10	12	P 5	P 5						
Clydesdale	NS 850361	NS83.11	5	P 5	P 5						
Clydesdale	NS 804343	NS83.14	47	A 2	A 2						
Clydesdale	NS 853340	NS83.16	22	P 5	P 5						
Clydesdale	NS 871385	NS83.4	71	S 2	S 2					40	
Clydesdale	NS 829381	NS83.5	11	P 1	P 1	8	1				
Clydesdale	NS 839378	NS83.6	8	A 1	A 1						
Clydesdale	NS 803362	NS83.7	82	P 1	P 1	51	9				
Clydesdale	NS 847368	NS83.9	5	P 5	P 5						
Clydesdale	NS 890410	NS84.2	1	A 1	A 1						
Clydesdale	NS 898407	NS84.3	5	A 1	A 1						
Clydesdale	NS 855530	NS85.11	26	A 1	A 1						
Clydesdale	NS 872528	NS85.13	11	P 2	P 2		11				
Clydesdale	NS 886505	NS85.14	11	A 1	A 1						
Clydesdale	NS 893508	NS85.15	10	A 1	A 1						
Clydesdale	NS 904422	NS94	6	A 1	A 1						
Clydesdale	NS 930490	NS94.1	7	P 5	P 5		2				
Clydesdale	NS 954468	NS94.10	7	P 2	P 2		2				
Clydesdale	NS 951472	NS94.11	22	A 1	P 2		5				
Clydesdale	NS 987476	NS94.11	10	A 1	A 1						
Clydesdale	NS 906437	NS94.16	6	A 1	P 2		4				
Clydesdale	NS 911438	NS94.17	8	A 1	A 1						
Clydesdale	NS 912417	NS94.20	4	A 1	A 1						
Clydesdale	NS 905427	NS94.21	1	A 1	A 1						
Clydesdale	NS 903430	NS94.22	4	A 1	A 1						
Clydesdale	NS 933453	NS94.5	7	A 1	A 1						

Table 8.2 Raised Bogs in Scotland

District	NGR	Site name	Area	Major land-cover	"Best" land-cover	Primary natural area P1	Primary degraded area P2, P3	SSSI area	NNR	Planning consent area	Comments
Clydesdale	NS 944454	NS94.6	36	P 5	P 2		9				
Clydesdale	NS 970458	NS94.8	13	P 5	P 5						
Clydesdale	NS 956464	NS94.9	7	P 2	P 2		2				
Clydesdale	NS 989554	NS95.13	61	A 1	P 2		13				
Clydesdale	NS 983548	NS95.15	11	A 1	A 1						
Clydesdale	NS 942551	NS95.19	141	P 5	P 3		4				
Clydesdale	NS 984512	NS95.24	42	A 1	A 1						
Clydesdale	NS 928512	NS95.26	16	A 1	P 2		3				
Clydesdale	NT 037457	NT04.1	4	P 2	P 2		4				
Clydesdale	NT 040463	NT04.2	9	P 2	P 2		9				
Clydesdale	NT 043466	NT04.3	3	P 2	P 2		2				
Clydesdale	NT 062476	NT04.6	3	A 1	A 1						
Clydesdale	NT 037480	NT04.7	3	P 5	P 5						
Clydesdale	NS 881261	Red Moss	36	A 1	P 3		11				
Clydesdale	NS 957483	Ryeflat Moss	175	S 2	S 2					55	
Clydesdale	NS 937488	Shodhills Moss	36	P 1	P 1	6	6				
Cumbernauld & Kilsyth	NS 798730	-	82	P 1	P 1	60					
Cumbernauld & Kilsyth	NS 713732	-	10	P 5	P 5						
Cumbernauld & Kilsyth	NS 789759	-	6	P 5	P 5						
Cumbernauld & Kilsyth	NS 709734	-	5	P 5	P 5						
Cumbernauld & Kilsyth	NS 822742	-	5	P 1	P 1						16 ha in total, 11 ha in Falkirk
Cumbernauld & Kilsyth	NS 812730	-	4	P 2	P 2						15 ha in total, 11 ha in Monklands
Cumbernauld & Kilsyth	NS 817735	-	3	P 1	P 1						17 ha in total, 14 ha in Falkirk
Cumbernauld & Kilsyth	NS 716739	-	2	P 5	P 5						
Cumbernauld & Kilsyth	NS 810736	-	2	P 1	P 1						
Cumbernauld & Kilsyth	NS 817741	-	2	P 3	P 3						
Cumbernauld & Kilsyth	NS 713737	-	1	P 5	P 5						
Cumbernauld & Kilsyth	NS 779753	Abronhill	7	P 2	P 2		2				
Cumbernauld & Kilsyth	NS 707738	Garlshore Moss	9	A 2	P 2						43 ha in total, 34 ha in Strathkelvin
Cumbernauld & Kilsyth	NS 748786	Gimal Hill	4	A 1	A 1						
Cumbernauld & Kilsyth	NS 682759	Inchterf	25	P 2	P 1		16				28 ha in total, 3 ha in Strathkelvin
Cumnock & Doon Valley	NS 498319	-	13	A 1	A 1						
Cumnock & Doon Valley	NS 615192	-	11	A 1	A 1						
Cumnock & Doon Valley	NS 527305	-	9	A 1	A 1						
Cumnock & Doon Valley	NS 471046	-	7	U	U						
Cumnock & Doon Valley	NS 542303	-	5	A 1	A 1						
Cumnock & Doon Valley	NS 471172	-	4	U	U						
Cumnock & Doon Valley	NS 544257	-	3	A 1	A 1						
Cumnock & Doon Valley	NS 538222	-	2	A 1	A 1						
Cumnock & Doon Valley	NS 604193	-	2	A 1	A 1						
Cumnock & Doon Valley	NS 489184	Barlosh Moss	56	U	U			38			
Cumnock & Doon Valley	NS 534299	Bashaw Moss	24	U	U						
Cumnock & Doon Valley	NS 466064	Dalmellington Moss	51	P 2	P 1	15	25	28			SWT Reserve
Cumnock & Doon Valley	NS 454063	Dalmellington Moss	15	P 2	P 2		5				
Cumnock & Doon Valley	NS 464061	Dalmellington Moss	4	P 2	P 2		4				
Cumnock & Doon Valley	NS 451070	Dalmellington Moss	4	P 2	P 2		4				

Table 8.2 Raised Bogs in Scotland

District	NGR	Site name	Area	Major land-cover	"Best" land-cover	Primary natural area P1	Primary degraded area P2, P3	SSSI area	NNR	Planning consent area	Comments
Cumnock & Doon Valley	NS 483260	Kipplemoss Plantation	17	P 5	P 5						
Cumnock & Doon Valley	NS 612210	Low Moss	21	U	U						
Cunninghame	NS 352473	Auchentiber Moss	209	P 3	P 1	38	55				
Cunninghame	NS 348506	Bankhead Moss	37	A 1	P 1	13	8				
Cunninghame	NS 339510	Barkip Moss	15	P 5	P 2		2				
Cunninghame	NS 361460	Bloak Moss	2	P 2	P 1						241 ha in total, 239 ha in Kilmamock
Cunninghame	NS 357489	Cockinhead Moss	63	A 1	P 1	20	9	39			
Cunninghame	NS 275457	Moss Mulloch	36	A 1	P 2		5				
Cunninghame	NS 265459	NS24.2	6	A 1	A 1						
Cunninghame	NS 335482	NS34.4	6	A 1	A 1						
Cunninghame	NS 337474	NS34.5	7	A 1	P 2		2				
Cunninghame	NS 350462	NS34.7	8	A 1	A 1						
Cunninghame	NS 333510	NS35.2	17	P 1	P 1	6	6				
Cunninghame	NS 343353	Shewalton Moss	166	S 1	P 3		14				
Cunninghame	NS 337361	Shewalton Moss	6	A 2	A 2						
Cunninghame	NS 367480	Sidehead Moss	21	A 1	P 1	3	4				
Cunninghame	NS 371488	Sidehead Moss	7	A 1	P 1						
Cunninghame	NS 365495	White Moss	24	A 1	P 1	3	3				
Dumbarton	NS 435843	-	90	A 1	P 2		2				
Dumbarton	NS 446837	-	22	U	U						
Dumbarton	NS 449829	-	4	A 1	A 1						
Dumbarton	NS 436831	-	4	P 2	P 2		3				
Dumbarton	NS 448857	Blackford Bog	4	P 1	P 1	4					
Dumbarton	NS 433835	Blairbelch Bog	24	P 1	P 1	10		21			
Dumbarton	NS 425838	Caldarvan Bog	15	P 5	P 5			23			Caldarvan Loch SSSI
Dumbarton	NS 377907	Inchmoan	35	S 1	P 4			46			Inchmoan SSSI
Dunfermline	NT 170917	-	45	A 2	A 2						
Dunfermline	NT 168921	-	17	A 2	A 2						
Dunfermline	NT 178911	-	11	A 1	A 1						
Dunfermline	NS 934900	-	11	P 5	P 5						
Dunfermline	NT 161891	-	11	P 5	P 5						
Dunfermline	NT 176912	-	8	A 1	A 1						
Dunfermline	NT 155889	-	6	P 5	P 5						
Dunfermline	NS 960889	-	6	P 5	P 5						
Dunfermline	NS 925889	-	4	P 5	P 5						
Dunfermline	NS 963891	-	4	P 5	P 5						
Dunfermline	NT 110905	-	4	P 1	P 1	2					
Dunfermline	NT 142893	-	3	A 1	A 1						
Dunfermline	NS 951886	-	3	P 5	P 5						
Dunfermline	NS 948901	-	3	P 5	P 5						
Dunfermline	NT 182898	-	3	U	U						
Dunfermline	NT 178971	-	2	U	U						
Dunfermline	NS 970897	-	2	P 5	P 5						
Dunfermline	NT 132900	-	2	A 1	A 1						
Dunfermline	NS 958885	-	2	P 5	P 5						
Dunfermline	NT 183852	-	1	A 1	A 1						

Table 8.2 Raised Bogs in Scotland

District	NGR	Site name	Area	Major land-cover	"Best" land-cover	Primary natural area P1	Primary degraded area P2, P3	SSSI area	NNR	Planning consent area	Comments
Dunfermline	NS 963883	-	1	P 5	P 5						
Dunfermline	NS 966892	-	1	P 5	P 5						
Dunfermline	NS 963899	-	1	U	U						
Dunfermline	NT 141881	-	1	A 1	A 1						
Dunfermline	NS 956886	-	1	P 5	P 5						
Dunfermline	NT 069933	Din Moss	54	P 5	P 5						
Dunfermline	NS 985923	Dun Moss	14	P 5	P 5						40 ha in total, 26 ha in Clackmannan
Dunfermline	NS 989909	Lockshaw Moss	44	P 4	P 1	15		59			Lockshaw Mosses SSSI
Dunfermline	NT 000912	Lockshaw Moss	9	P 5	P 5						
Dunfermline	NS 990919	Lockshaw Moss	5	S 1	S 1						
Dunfermline	NT 009925	Loorie Plantation	9	A 1	A 1						
Dunfermline	NT 160862	Moss Easy	16	S 1	P 1	2	5				
Dunfermline	NT 168902	Moss Moran	262	S 1	P 2		10				267 in total, 5 ha in Kirkcaldy
Dunfermline	NT 175847	Moss Plantation	22	P 5	P 5						
Dunfermline	NT 151882	Moss Plantation	15	P 4	P 4						
Dunfermline	NS 966862	Moss Wood	10	P 5	P 5						
Dunfermline	NT 000948	Muirhead Moss	4	P 5	P 5						9 ha in total, 5 ha in Perth
Dunfermline	NT 027973	Powmill	15	A 1	A 1						42 ha in total, 27 ha in Perth
Dunfermline	NT 046922	Steelend Moss	7	P 1	P 1			7			Steelend Moss SSSI
East Kilbride	NS 660433	-	17	A 1	P 2		12				
East Kilbride	NS 609392	-	2	A 1	A 1						
East Kilbride	NS 658435	-	1	A 1	P 2						
East Kilbride	NS 642387	-	1	A 2	A 2						
East Kilbride	NS 662491	Cladence Moss	141	S 2	P 1	17	39			70	
East Kilbride	NS 667511	Crutherland Moss	107	P 2	P 1	44	54				
East Kilbride	NS 637377	NS63.10	1	A 1	A 1						
East Kilbride	NS 636373	NS63.11	3	P 2	P 2		3				
East Kilbride	NS 633368	NS63.12	4	P 2	P 2		4				
East Kilbride	NS 642370	NS63.13	3	A 1	A 1						
East Kilbride	NS 657377	NS63.15	4	P 2	P 2		4				
East Kilbride	NS 664374	NS63.16	51	P 5	P 5						
East Kilbride	NS 636396	NS63.3	5	P 2	P 2		5				
East Kilbride	NS 648390	NS63.4	18	A 2	P 2		6			2	
East Kilbride	NS 644388	NS63.5	4	A 2	A 2						
East Kilbride	NS 632388	NS63.6	2	P 2	P 2		1				
East Kilbride	NS 633384	NS63.7	5	P 2	P 2		5				
East Kilbride	NS 625388	NS63.8	30	P 2	P 1	10	19				
East Kilbride	NS 622380	NS63.9	18	A 1	P 2		11				
East Kilbride	NS 647485	NS64.2	43	P 2	P 1	4	29				
East Kilbride	NS 647403	NS64.26	2	A 1	A 1						
East Kilbride	NS 621400	NS64.27	7	P 2	P 2		7				
East Kilbride	NS 671400	NS64.29	8	P 2	P 1	3	5				
East Kilbride	NS 675400	NS64.30	1	A 1	A 1						
East Kilbride	NS 679401	NS64.31	2	A 1	A 1						
East Kilbride	NS 679462	NS64.8	15	P 1	P 1	11	2				
East Kilbride	NS 680458	NS64.9	2	A 1	P 2		1				

Table 8.2 Raised Bogs in Scotland

District	NGR	Site name	Area	Major land-cover	"Best" land-cover	Primary natural area P1	Primary degraded area P2, P3	SSSI area	NNR	Planning consent area	Comments
East Kilbride	NS 661538	NS65.3	8	P 2	P 2		8				42 ha in total, parts in Hamilton, Monklands an
East Kilbride	NS 613535	NS65.4	8	P 5	P 1	1					
East Kilbride	NS 622516	NS65.5	5	A 1	P 1	3	1				
East Kilbride	NS 627514	NS65.6	11	A 1	A 1						
East Kilbride	NS 634511	NS65.7	15	P 5	P 1	11					
East Kilbride	NS 648510	NS65.8	2	P 2	P 2		2				
East Kilbride	NS 652506	NS65.9	11	P 2	P 1	3	5				
East Kilbride	NS 675471	Rigfoot Moss	26	P 2	P 1	9	15				
East Kilbride	NS 678508	Waukenwae Moss	52	P 1	P 1	30	15				152 ha in total, 100 ha in Hamilton
East Lothian	NT 673780	Lochend Wood	30	P 5	P 5						
Eastwood	NS 508539	-	11	A 1	A 1						
Eastwood	NS 521532	Harlea Wood	5	P 2	P 2		2				
Ettrick and Lauderdale	NT 628421	Gordon Moss	185	P 3	P 3		131	45			349 ha in total, 164 ha in Berwickshire
Ettrick and Lauderdale	NT 518424	Threepwood Moss	127	P 1	P 1	60		54			
Falkirk	NS 800775	-	29	P 5	P 5						
Falkirk	NS 843732	-	18	U	U						
Falkirk	NS 830726	-	18	U	U						
Falkirk	NS 833741	-	17	U	U						
Falkirk	NS 841748	-	15	U	U						
Falkirk	NS 912736	-	15	U	U						
Falkirk	NS 821736	-	14	P 1	P 1	5	2				17 ha in total, 3 ha in Cumbernauld
Falkirk	NS 850747	-	13	U	U						
Falkirk	NS 845784	-	11	A 1	A 1						
Falkirk	NS 826742	-	11	P 1	P 1	8					16 ha in total, 5 ha in Cumbernauld
Falkirk	NS 905741	-	10	U	U						
Falkirk	NS 800765	-	8	U	U						
Falkirk	NS 838781	-	7	P 5	P 5						
Falkirk	NS 859743	-	7	U	U						
Falkirk	NS 842728	-	6	U	U						
Falkirk	NS 833788	-	6	A 1	A 1						
Falkirk	NS 836712	-	6	A 1	A 1						
Falkirk	NS 867770	-	6	U	U						
Falkirk	NS 822728	-	5	U	U						
Falkirk	NS 806763	-	5	U	U						
Falkirk	NS 901740	-	5	U	U						
Falkirk	NS 880891	-	4	P 5	P 5						
Falkirk	NS 913750	-	4	U	U						
Falkirk	NS 923756	-	4	U	U						
Falkirk	NS 874775	-	3	U	U						
Falkirk	NS 922752	-	3	U	U						
Falkirk	NS 829732	-	3	U	U						
Falkirk	NS 831714	-	3	U	U						
Falkirk	NS 845747	-	2	U	U						
Falkirk	NS 850732	-	2	U	U						
Falkirk	NS 889729	-	2	A 1	A 1						
Falkirk	NS 830717	-	1	U	U						

Table 8.2 Raised Bogs in Scotland

District	NGR	Site name	Area	Major land-cover	"Best" land-cover	Primary natural area P1	Primary degraded area P2, P3	SSSI area	NNR	Planning consent area	Comments
Falkirk	NS 874733	-	1	A 1	A 1						
Falkirk	NS 839780	-	1	P 5	P 5						
Falkirk	NS 917742	Drumbroider Moss	27	U	U						
Falkirk	NS 878883	Dunmore Moss	70	P 5	P 5						Linked to Easter Moss
Falkirk	NS 865893	Easter Moss	97	S 1	S 1						139 ha in total, 42 ha in Stirling
Falkirk	NS 852786	Howierig	20	P 5	P 1						
Falkirk	NS 880862	Letham Moss	176	S 2	S 2					160	
Gordon	NJ 880163	-	37	P 5	P 5						
Gordon	NJ 942273	-	24	P 5	P 5						
Gordon	NJ 821061	-	22	U	U						
Gordon	NJ 875168	-	20	P 5	P 5						
Gordon	NJ 884158	-	19	U	U						
Gordon	NJ 819364	-	15	U	U						
Gordon	NJ 934202	-	12	A 1	A 1						
Gordon	NJ 734312	-	11	U	U						
Gordon	NJ 934216	-	11	P 5	P 5						
Gordon	NJ 943198	-	7	U	U						
Gordon	NJ 840067	-	6	U	U						14 ha in total, 8 ha in City of Aberdeen
Gordon	NJ 815320	-	5	U	U						
Gordon	NJ 806351	-	5	U	U						12 ha in total, 7 ha in Banff
Gordon	NJ 824044	-	5	P 5	P 5						
Gordon	NJ 849235	-	5	U	U						
Gordon	NJ 946217	-	5	A 1	A 1						
Gordon	NJ 980258	-	5	A 1	A 1						
Gordon	NJ 836262	-	5	U	U						
Gordon	NJ 854169	-	4	P 5	P 5						
Gordon	NJ 942205	-	4	U	U						
Gordon	NJ 813043	-	4	P 5	P 5						
Gordon	NJ 955273	-	2	A 1	A 1						
Gordon	NJ 832051	-	2	P 5	P 5						
Gordon	NJ 835053	-	2	P 5	P 5						
Gordon	NJ 803348	-	2	U	U						
Gordon	NJ 814065	-	1	P 5	P 5						
Gordon	NJ 833067	Amhall Moss	14	U	U						
Gordon	NJ 827067	Amhall Moss	4	U	U						
Gordon	NJ 815236	Burreldale Moss	85	U	U						
Gordon	NJ 835237	Burreldale Moss	30	U	U						
Gordon	NJ 934225	Craibadona Moss	25	U	U						
Gordon	NJ 931192	Harestone Moss	35	A 2	A 2						
Gordon	NK 041330	Lochlundie Moss	88	S 1	P 3		20				178 ha in total, 90 ha in Banff
Gordon	NJ 703175	Red Moss	101	P 5	P 5						
Gordon	NJ 917155	Red Moss	99	S 1	P 2		25				
Gordon	NJ 912179	Red Moss	71	U	U						
Gordon	NJ 744017	Red Moss	41	U	U						145 ha in total, 104 ha in Kincardine
Gordon	NJ 752107	Skene Moss	294	P 5	P 3		5				
Hamilton	NS 663526	Blantyre Muir	58	A 2	P 1	30	21	51			

Table 8.2 Raised Bogs in Scotland

District	NGR	Site name	Area	Major land-cover	"Best" land-cover	Primary natural area P1	Primary degraded area P2, P3	SSSI area	NNR	Planning consent area	Comments
Hamilton	NS 780462	Cander Moss	16	P 1	P 1	16		30			30 ha in total, 14 ha in Lanark
Hamilton	NS 668541	NS65.1	6	A 1	P 2		3				
Hamilton	NS 673522	NS65.10	2	A 1	A 1						
Hamilton	NS 684518	NS65.13	2	A 1	A 1						
Hamilton	NS 663538	NS65.3	3	P 2	P 2		11				42 ha in total; E. Kilbride, Monklands, Motherw
Hamilton	NS 802474	NS84.1	7	P 2	P 2		7				11 ha in total, 9 ha in Lanark
Hamilton	NS 685507	Waukenwae Moss	100	P 1	P 1	40	20				152 ha in total, 52 ha in East Kilbride
Inverness	NH 819537	Blar nam Fiadh	50	P 2	P 1	20	15				138 ha in total, 88 ha in Nairn
Kilmarnock & Loudoun	NS 501347	-	3	A 1	A 1						
Kilmarnock & Loudoun	NS 468425	-	2	A 1	A 1						
Kilmarnock & Loudoun	NS 502409	-	2	A 1	A 1						
Kilmarnock & Loudoun	NS 604387	-	1	A 1	A 1						
Kilmarnock & Loudoun	NS 616375	Allantonplains Plantation	14	P 2	P 1	2	10				
Kilmarnock & Loudoun	NS 367456	Bloak Moss	239	P 2	P 1	20	32				241 ha in total, 2 ha in Cunninghame
Kilmarnock & Loudoun	NS 534395	Hagars Moss	18	A 1	P 2		7				
Kilmarnock & Loudoun	NS 444535	Knockmade Moss	50	A 1	P 1	2	11				75 ha in total, 25 ha in Renfrew
Kilmarnock & Loudoun	NS 373434	NS34.9	10	P 2	P 2		3				
Kilmarnock & Loudoun	NS 449360	NS43.1	41	A 1	P 3		3				
Kilmarnock & Loudoun	NS 443357	NS43.2	3	A 1	A 1						
Kilmarnock & Loudoun	NS 439355	NS43.3	2	A 1	A 1						
Kilmarnock & Loudoun	NS 444349	NS43.4	31	A 1	P 1	8					
Kilmarnock & Loudoun	NS 493332	NS43.5	6	A 1	A 1						
Kilmarnock & Loudoun	NS 438417	NS44.1	8	A 1	A 1						
Kilmarnock & Loudoun	NS 494460	NS44.10	8	A 1	P 2		3				
Kilmarnock & Loudoun	NS 494465	NS44.11	12	P 2	P 2						
Kilmarnock & Loudoun	NS 496467	NS44.12	6	A 1	P 2		2				
Kilmarnock & Loudoun	NS 447430	NS44.2	5	A 1	A 1						
Kilmarnock & Loudoun	NS 448420	NS44.3	42	A 1	A 1						
Kilmarnock & Loudoun	NS 441415	NS44.4	3	A 1	A 1						
Kilmarnock & Loudoun	NS 449416	NS44.5	4	A 1	A 1						
Kilmarnock & Loudoun	NS 458428	NS44.6	6	A 1	A 1						
Kilmarnock & Loudoun	NS 479437	NS44.7	11	P 5	P 2		2				
Kilmarnock & Loudoun	NS 493433	NS44.8	10	P 2	P 2		9				
Kilmarnock & Loudoun	NS 494410	NS44.9	10	A 1	A 1						
Kilmarnock & Loudoun	NS 520398	NS53.1	4	P 2	P 2		3				
Kilmarnock & Loudoun	NS 546394	NS53.3	16	A 1	A 1						
Kilmarnock & Loudoun	NS 500436	NS54.12	8	P 5	P 5						
Kilmarnock & Loudoun	NS 504411	NS54.13	2	A 1	A 1						
Kilmarnock & Loudoun	NS 519405	NS54.14	9	A 1	P 2		9				
Kilmarnock & Loudoun	NS 500403	NS54.17	2	A 1	A 1						
Kilmarnock & Loudoun	NS 604393	NS63.20	18	A 1	P 2		2				
Kilmarnock & Loudoun	NS 619367	NS63.24	19	P 5	P 5						
Kincardine & Deeside	NO 877937	-	24	P 3	P 3		24				
Kincardine & Deeside	NO 815998	-	13	A 1	A 1						
Kincardine & Deeside	NO 863928	-	11	A 1	A 1						
Kincardine & Deeside	NO 931989	-	9	P 5	P 5						

Table 8.2 Raised Bogs in Scotland

District	NGR	Site name	Area	Major land-cover	"Best" land-cover	Primary natural area P1	Primary degraded area P2, P3	SSSI area	NNR	Planning consent area	Comments
Kincardine & Deeside	NO 893992	-	8	P 5	P 5						
Kincardine & Deeside	NO 869936	-	4	P 2	P 2		3				
Kincardine & Deeside	NO 921984	-	4	A 1	A 1						
Kincardine & Deeside	NO 916954	-	3	A 1	A 1						
Kincardine & Deeside	NO 897958	-	2	A 1	A 1						
Kincardine & Deeside	NO 920958	-	2	A 1	A 1						
Kincardine & Deeside	NO 895960	-	2	A 1	A 1						
Kincardine & Deeside	NO 908994	Hare Moss	27	P 2	P 2		16				
Kincardine & Deeside	NO 914965	Portlethen Moss	33	P 3	P 3		18				
Kincardine & Deeside	NJ 745009	Red Moss	104	S 1	S 1						145 ha in total, 41 ha in Gordon
Kincardine & Deeside	NO 860942	Red Moss of Netherley	130	P 2	P 2		7	94			
Kirkcaldy	NT 194975	-	20	A 1	A 1						
Kirkcaldy	NT 210880	-	12	A 1	A 1						
Kirkcaldy	NT 239942	-	3	A 1	A 1						
Kirkcaldy	NT 212962	-	3	A 1	A 1						
Kirkcaldy	NO 323016	-	2	A 1	A 1						
Kirkcaldy	NT 200956	-	2	A 1	A 1						
Kirkcaldy	NT 227996	-	2	A 1	A 1						
Kirkcaldy	NT 260949	Chapel Moss	28	P 5	P 5						
Kirkcaldy	NT 309964	Foresters Moor	1	P 5	P 5						
Kirkcaldy	NT 190909	Moss Moran	5	S 1	P 2						267 ha in total, 262 ha in Dunfermline
Kirkcaldy	NT 203965	Moss Plantation	48	P 5	P 5						
Kirkcaldy	NT 308966	Moss Wood	3	P 5	P 5						
Kirkcaldy	NT 268877	North Mire	4	A 1	A 1						
Kirkcaldy	NO 208009	Portmoak Moss	4	A 1	A 1						202 ha in total, 198 ha in Perth
Kirkcaldy	NO 306041	Star Moss	58	S 1	P 5			62			
Kirkcaldy	NT 235937	Torbain Moss	20	P 5	P 5						
Kyle & Carrick	NS 349349	Shewalton Moss	95	S 1	P 3		20				
Midlothian	NT 275548	-	20	P 1	P 1	5	10				
Midlothian	NT 287550	Side Moss	44	P 1	P 1	2	20				
Midlothian	NT 228567	Springfield Moss	122	S 2	S 2					65	130 ha in total, 8 ha in Tweeddale
Monklands	NS 875662	-	28	A 1	A 1						66 ha in total, parts in Motherwell and West Lot
Monklands	NS 837611	-	12	P 5	P 1		3				156 ha in total, 144 ha in Motherwell
Monklands	NS 860634	-	12	A 1	P 2						
Monklands	NS 812728	-	11	P 2	P 2						15 ha in total, 4 ha in Cumbernauld
Monklands	NS 870670	-	3	A 1	A 1						15 ha in total, 12 ha in West Lothian
Monklands	NS 836670	-	2	A 2	A 2						
Monklands	NS 837668	-	1	A 2	A 2						
Monklands	NS 872668	-	1	A 1	A 1						2 ha in total, 1 ha in West Lothian
Monklands	NS 862662	-	1	A 1	A 1						
Monklands	NS 875656	-	0	A 1	A 1						
Monklands	NS 855692	Black Loch Bog	119	P 1	P 1						
Monklands	NS 804636	Craigends Moss	16	P 2	P 2		6				
Monklands	NS 770680	Drumshangie Moss	62	S 1	P 1	8	11				
Monklands	NS 810649	Lady Bells Moss	135	P 2	P 1	26	39	59			
Monklands	NS 758716	North Bellstane Plantation	33	P 5	P 3		4	33			North Bellstane Plantation

Table 8.2 Raised Bogs in Scotland

District	NGR	Site name	Area	Major land-cover	"Best" land-cover	Primary natural area P1	Primary degraded area P2, P3	SSSI area	NNR	Planning consent area	Comments
Monklands	NS 788702	NS7.10	7	A 2	A 2						
Monklands	NS 715695	NS76.1	7	P 2	P 2		11				
Monklands	NS 741693	NS76.11	4	A 1	P 2		3				
Monklands	NS 730682	NS76.12	7	A 1	P 1		1				
Monklands	NS 749686	NS76.13	2	A 1	A 1						
Monklands	NS 756684	NS76.14	4	A 1	A 1						
Monklands	NS 742655	NS76.15	8	P 2	P 2		5				
Monklands	NS 789676	NS76.18	9	A 1	A 1						
Monklands	NS 772650	NS76.19	5	A 1	A 1						
Monklands	NS 709674	NS76.2	14	A 1	A 1			6			
Monklands	NS 767642	NS76.20	11	A 1	P 1	1					
Monklands	NS 795641	NS76.21	8	A 1	A 1						
Monklands	NS 701669	NS76.3	2	P 5	P 5						14 ha in total, 12 ha in City of Glasgow
Monklands	NS 702667	NS76.4	3	P 5	P 5						
Monklands	NS 707660	NS76.5	60	P 5	P 2		7				122 ha in total, 62 ha in City of Glasgow
Monklands	NS 711655	NS76.6	6	P 5	P 5						
Monklands	NS 717678	NS76.7	8	P 5	P 2		4				
Monklands	NS 719673	NS76.8	6	P 5	P 5						
Monklands	NS 712670	NS76.9	11	P 5	P 2		2				
Monklands	NS 761686	NS76.b	1	A 1	A 1						
Monklands	NS 729691	NS86.10	8	P 2	P 2		5				
Monklands	NS 826673	NS86.11	18	P 2	P 2		7				
Monklands	NS 816666	NS86.13	6	A 1	P 1	2	1				
Monklands	NS 806659	NS86.14	2	A 2	A 2						
Monklands	NS 801649	NS86.15	4	A 1	A 1						
Monklands	NS 819657	NS86.17	14	P 2	P 1	5	6				
Monklands	NS 813686	NS86.2	21	P 2	P 1	8	9				
Monklands	NS 817636	NS86.20	13	P 2	P 2		6				
Monklands	NS 807631	NS86.22	4	A 1	A 1						
Monklands	NS 807618	NS86.23	5	A 1	A 1						
Monklands	NS 812613	NS86.24	9	A 1	A 1						
Monklands	NS 798614	NS86.25	16	A 1	A 1						
Monklands	NS 799607	NS86.26	7	A 1	P 1	4	3				42 ha in total; E. Kilbride, Hamilton, Motherwell
Monklands	NS 834689	NS86.3	4	P 2	P 2		8				
Monklands	NS 877656	NS86.39	2	A 1	A 1						
Monklands	NS 840692	NS86.4	29	P 1	P 1	8					
Monklands	NS 872656	NS86.44	9	A 1	A 1						
Monklands	NS 822627	NS86.45	36	P 5	P 5						
Monklands	NS 829619	NS86.46	87	P 2	P 1	16	30				
Monklands	NS 839622	NS86.47	5	P 5	P 5						
Monklands	NS 843641	NS86.49	127	A 1	P 1	1	16				
Monklands	NS 854664	NS86.54	2	A 1	A 1						
Monklands	NS 860659	NS86.60	11	A 1	A 1						
Monklands	NS 865654	NS86.61	2	A 1	A 1						
Monklands	NS 868653	NS86.62	8	A 1	P 2		2				
Monklands	NS 866649	NS86.63	2	A 1	A 1						

Table 8.2 Raised Bogs in Scotland

District	NGR	Site name	Area	Major land-cover	"Best" land-cover	Primary natural area P1	Primary degraded area P2, P3	SSSI area	NNR	Planning consent area	Comments
Monklands	NS 869644	NS86.64	65	P 2	P 2	2	39				68 ha in total, 3 ha in Motherwell
Monklands	NS 869631	NS86.66	2	A 1	P 2		1				
Monklands	NS 859630	NS86.67	2	A 1	A 1						
Monklands	NS 844677	NS86.7	11	A 1	A 1						
Monklands	NS 836680	NS86.8	5	A 1	A 1						
Monklands	NS 835677	NS86.8	0	A 1	A 1						
Monklands	NS 833684	NS86.b	9	A 1	A 1						
Monklands	NS 851679	NS86.c	24	A 1	P 2		5				
Monklands	NS 816729	NS87.2	6	P 2	P 2		5				
Monklands	NS 825715	NS87.4	13	P 2	P 2		11				
Monklands	NS 816712	NS87.5	25	A 1	P 2		11				
Monklands	NS 824713	NS87.6	15	P 2	P 2		14				
Monklands	NS 822704	NS87.8	8	P 1	P 1	7	1				
Monklands	NS 826654	Watch Moss	13	A 1	P 2		5				
Moray	NJ 041569	-	73	A 1	A 1						
Moray	NJ 293629	-	28	P 5	P 5						
Moray	NJ 497552	-	23	A 1	A 1						
Moray	NJ 219619	-	18	A 2	A 2						
Moray	NJ 524546	-	17	P 5	P 5						
Moray	NJ 504554	-	8	P 5	P 5						
Moray	NJ 211619	-	8	A 2	A 2						
Moray	NJ 215619	-	0	A 2	A 2						
Moray	NJ 466540	Foggy Moss	36	S 1	S 1						
Moray	NH 954570	Inshoch Moss	1	P 5	P 1						68 ha in total, 67 ha in Naim
Moray	NJ 569511	Moss of Crombie	61	S 1	P 1			0			135 ha in total, 74 ha in Banff
Moray	NJ 275646	Moss of Meft	100	P 5	P 5						
Moray	NJ 271656	Moss of Meft	18	P 5	P 5						
Moray	NJ 264637	Moss of Meft	16	P 5	P 5						
Moray	NJ 266655	Moss of Meft	8	P 5	P 5						
Moray	NJ 265646	Moss of Meft	4	P 5	P 5						
Moray	NJ 268632	Moss of Meft	1	P 5	P 5						
Moray	NJ 267634	Moss of Meft	1	P 5	P 5						
Moray	NJ 553511	Moss of Rothiemay	53	P 5	P 1	7					
Moray	NJ 541517	Rowan Bauds	66	U	U						
Moray	NJ 520573	Whitley Moss	18	P 5	P 2						101 ha in total, 83 ha in Banff
Motherwell	NS 877644	-	3	P 2	P 2						68 ha in total, 65 ha in Monklands
Motherwell	NS 887663	-	3	P 1	P 1	3					66 ha in total, parts in Monklands and West Lot
Motherwell	NS 848569	-	2	P 5	P 5						
Motherwell	NS 894664	-	2	P 3	P 3						
Motherwell	NS 876628	-	1	A 1	A 1						
Motherwell	NS 823597	NS85.1	9	A 1	A 1						
Motherwell	NS 885550	NS85.10	15	P 5	P 5						
Motherwell	NS 830594	NS85.2	5	A 1	A 1						
Motherwell	NS 814563	NS85.3	24	A 1	P 2		11				
Motherwell	NS 840561	NS85.4	9	P 5	P 1	4					
Motherwell	NS 812548	NS85.5	56	S 1	S 1						

Table 8.2 Raised Bogs in Scotland

District	NGR	Site name	Area	Major land-cover	"Best" land-cover	Primary natural area P1	Primary degraded area P2, P3	SSSI area	NNR	Planning consent area	Comments
Motherwell	NS 856564	NS85.7	38	P 5	P 1	5	1				
Motherwell	NS 864559	NS85.8	8	P 5	P 5						
Motherwell	NS 799604	NS86.26	23	A 1	P 1		2				42 ha in total, parts in East Kilbride, Hamilton,
Motherwell	NS 820601	NS86.27	2	A 1	A 1						
Motherwell	NS 840610	NS86.28	144	P 5	P 1	13	10				156 ha in total, 12 ha in Monklands
Motherwell	NS 859602	NS86.29	24	P 5	P 5						
Motherwell	NS 872604	NS86.30	3	A 1	P 2						
Motherwell	NS 892627	NS86.32	20	A 2	A 1						
Motherwell	NS 898634	NS86.33	9	A 2	A 2						
Motherwell	NS 884635	NS86.34	21	A 1	A 1						
Motherwell	NS 883625	NS86.35	23	A 1	A 1						
Motherwell	NS 897661	NS86.43	5	A 1	P 2		5				
Motherwell	NS 910669	NS96.1	54	P 2	P 2		22				69 ha in total, 15 ha in West Lothian
Motherwell	NS 919666	NS96.2	51	P 1	P 1	14	2				54 ha in total, 3 ha in West Lothian
Motherwell	NS 925662	NS96.3	54	P 5	P 5						60 ha in total, 6 ha in West Lothian
Motherwell	NS 912656	NS96.4	4	A 1	A 1						
Motherwell	NS 905659	NS96.4	1	A 1	A 1						
Motherwell	NS 907657	NS96.5	2	A 1	A 1						
Nairn	NH 885473	-	54	P 5	P 5						
Nairn	NH 868476	-	51	P 5	P 5						
Nairn	NH 834550	-	5	A 1	A 1						
Nairn	NH 923522	-	5	P 5	P 5						
Nairn	NH 921511	-	2	P 5	P 5						
Nairn	NH 822527	-	2	U	U						
Nairn	NH 834537	Blar nam Fiadh	88	P 2	P 1	25	30				138 ha in total, 50 ha in Inverness
Nairn	NH 876473	Clunas Moss	15	P 5	P 5						
Nairn	NH 925499	Fornighty Moss	77	P 5	P 1	10					
Nairn	NH 949569	Inshoch Moss	67	P 5	P 1	15					68 ha in total, 1 ha in Moray
Nithsdale	NY 048727	-	41	P 5	P 5						
Nithsdale	NY 027746	-	26	A 1	P 1		5				
Nithsdale	NX 992767	-	12	A 1	P 5						
Nithsdale	NY 024699	-	7	P 5	P 5						
Nithsdale	NX 985771	-	7	P 5	P 5						
Nithsdale	NX 988774	-	3	P 5	P 5						
Nithsdale	NX 989765	-	3	A 2	A 1						
Nithsdale	NX 988785	-	2	P 5	P 5						
Nithsdale	NY 004790	-	2	P 3	P 3						
Nithsdale	NY 005755	Craigs Moss	1,122	P 5	P 5						
Nithsdale	NX 951725	Drungans Moss	126	A 1	A 1						
Nithsdale	NX 989781	Herries Firs	9	P 5	P 5						
Nithsdale	NY 010703	Kelwood Moor	71	A 1	A 1						
Nithsdale	NX 972698	Kirkconnel Flow	168	P 5	P 1	5		142	Y		
Nithsdale	NY 044705	Longbridge Muir	1,056	P 5	P 1	170		514			Longbridge Muir SSSI
Nithsdale	NY 001795	Manse Moss	4	A 1	A 1						
Nithsdale	NX 995797	Mossdale	7	P 1	P 1	7					
Nithsdale	NY 103667	Priestside Flow	33	P 5	P 5						228 ha in total, 195 ha in Annandale

Table 8.2 Raised Bogs in Scotland

District	NGR	Site name	Area	Major land-cover	"Best" land-cover	Primary natural area P1	Primary degraded area P2, P3	SSSI area	NNR	Planning consent area	Comments
Nithsdale	NY 032727	Racks Moss	504	P 5	P 5						
Nithsdale	NY 025764	Redhills Moss	88	A 1	P 3		15				
Nithsdale	NY 048814	Skipmyre Moss	4	A 1	A 1						5 ha in total, 1 ha in Annandale
North East Fife	NO 313139	-	14	A 1	A 1						
North East Fife	NO 398201	-	14	A 1	A 1						
North East Fife	NO 343199	-	14	A 1	A 1						
North East Fife	NO 333191	-	11	A 1	A 1						
North East Fife	NO 415242	-	10	A 2	A 2						
North East Fife	NO 304180	-	6	U	U						
North East Fife	NO 555114	-	5	U	U						
North East Fife	NO 265080	-	5	P 5	P 5						
North East Fife	NO 436255	-	4	A 1	A 1						
North East Fife	NO 260154	-	4	A 1	A 1						
North East Fife	NO 329211	-	4	U	U						
North East Fife	NO 332179	-	3	U	U						
North East Fife	NO 301182	-	3	A 1	A 1						
North East Fife	NO 315179	-	3	U	U						
North East Fife	NO 492129	-	3	U	U						
North East Fife	NO 397246	-	2	A 1	A 1						
North East Fife	NO 470262	-	2	P 5	P 5						
North East Fife	NO 400246	-	2	A 1	A 1						
North East Fife	NO 453250	-	2	A 1	A 1						
North East Fife	NO 473262	-	1	P 5	P 5						
North East Fife	NO 474126	-	1	U	U						
North East Fife	NO 335112	-	1	P 5	P 5						
North East Fife	NO 428234	-	1	A 2	A 2						
North East Fife	NO 417249	-	1	P 5	P 5						
North East Fife	NO 454228	-	1	A 1	A 1						
North East Fife	NO 406232	-	1	A 1	A 1						
North East Fife	NO 409248	-	1	A 1	A 1						
North East Fife	NO 447102	Bankhead Moss	7	P 5	P 2			8			SWT Reserve
North East Fife	NO 478138	Bog Wood	4	P 5	P 5						
North East Fife	NO 465128	Cassindonald Moss	10	P 2	P 2			12			
North East Fife	NO 358175	Pitbladdo Bog	34	A 1	P 3		10				
North East Fife	NO 345179	West Myre	3	U	U						
Perth & Kinross	NN 920091	Bog Wood & Meadow	14	S 1	P 5			9			
Perth & Kinross	NO 076367	Caimleith Moss	17	P 5	P 1	1		85			Caimleith Moss SSSI
Perth & Kinross	NO 035021	Claysike	29	P 2	P 2		15				
Perth & Kinross	NO 088001	Coldrain Farm Wood	13	P 5	P 5						
Perth & Kinross	NO 090006	Coldrain Meadow	17	A 1	A 1						
Perth & Kinross	NN 895268	Connachan Marsh	9	S 1	P 2			25			
Perth & Kinross	NO 040001	Crook of Devon Moss	13	P 2	P 1	3	6				
Perth & Kinross	NN 986036	Glenquey Moss	11	P 2	P 2						
Perth & Kinross	NT 004955	Lambhill Moss	2	P 5	P 5						
Perth & Kinross	NO 010235	Methven Moss	142	P 2	P 1	5	80	83			
Perth & Kinross	NT 000950	Muirhead Moss	5	P 5	P 5						9 ha in total, 4 ha in Dunfermline

Table 8.2 Raised Bogs in Scotland

District	NGR	Site name	Area	Major land-cover	"Best" land-cover	Primary natural area P1	Primary degraded area P2, P3	SSSI area	NNR	Planning consent area	Comments
Perth & Kinross	NS 994960	Muirmill	1	P 5	P 5						
Perth & Kinross	NO 180014	Portmoak Moss	198	A 1	P 5						202 ha in total, 4 ha in Kirkcaldy
Perth & Kinross	NT 021974	Powmill	27	A 1	A 1						42 ha in total, 15 ha in Dunfermline
Perth & Kinross	NT 131976	Red Moss Wood	22	A 1	P 5						
Perth & Kinross	NT 181995	Red Moss Wood	3	A 1	P 5						
Perth & Kinross	NN 860091	Shelforkie Moss	57	P 3	P 2		30	224			Carsebreck & Rhynd Lochs SSSI
Perth & Kinross	NT 146989	Waterbutts Plantation	6	S 2	P 5						
Perth & Kinross	NS 994968	Whitegates Moss	3	P 5	P 5						
Renfrew	NS 446596	-	10	P 1	P 1	5					
Renfrew	NS 437599	-	4	A 1	A 1						
Renfrew	NS 487560	-	3	U	U						
Renfrew	NS 427685	Barochan Moss	80	P 5	P 5						
Renfrew	NS 446685	Fulwood Moss	73	P 5	P 1	3					
Renfrew	NS 447538	Knockmade Moss	25	A 1	P 2						75 ha in total, 50 ha in Kilmarnock
Renfrew	NS 439661	Linwood Moss	123	P 5	P 5						
Ross & Cromarty	NH 582538	Monadh Mor	35	P 1	P 1	35		175			Monadh Mor SSSI
Ross & Cromarty	NH 775773	Pitmaduthy Moss	54	P 1	P 2	30	20	119			
Roxburgh	NT 534120	Adderstonelee Moss	10	P 1	P 1	10		17			Adderstonelee Moss SSSI
Roxburgh	NT 804313	Din Moss	47	P 2	P 2		40	46			SWT Reserve
Stewartry	NX 850615	Barclosh Moss Complex	147	P 5	P 2		5				
Stewartry	NX 847622	Edingham Moss	12	P 5	P 5						
Stewartry	NX 880718	Merkland Moss	107	S 1	P 3		25				
Stewartry	NX 800503	Rascarrel Moss	163	P 5	P 5						
Stirling	NS 612998	-	114	P 5	P 5						
Stirling	NS 579975	-	15	P 5	P 5						
Stirling	NN 656060	-	12	P 5	P 5						
Stirling	NS 659981	-	12	A 1	A 1						
Stirling	NS 848906	-	6	P 5	P 5						
Stirling	NS 795881	-	6	P 5	P 5						
Stirling	NS 582993	-	6	P 5	P 5						
Stirling	NS 462861	-	6	P 5	P 5						
Stirling	NS 459857	-	5	P 5	P 5						
Stirling	NS 810873	-	3	P 5	P 5						
Stirling	NS 795885	-	2	P 5	P 5						
Stirling	NS 586993	-	2	A 1	A 1						
Stirling	NS 784925	-	2	A 1	A 1						
Stirling	NS 831913	-	1	A 1	A 1						
Stirling	NS 527960	-	1	P 3	P 3		1				
Stirling	NS 546975	Arnochoile Wood Moss	76	P 5	P 5						
Stirling	NS 515834	Bog Wood	11	P 5	P 5						
Stirling	NS 572991	Cardross Moss	121	P 3	P 3		70				
Stirling	NS 588966	Collymoon Moss	70	P 4	P 2		13	99			
Stirling	NS 855896	Easter Moss	42	S 1	S 1						139 ha in total, 97 ha in Falkirk
Stirling	NS 543965	Easterhill Moss	21	P 5	P 5						
Stirling	NS 636985	Flanders Moss East	739	P 1	P 1	540	40	733	Y	138	SWT Reserve
Stirling	NS 568960	Flanders Moss West	411	P 5	P 5						

Table 8.2 Raised Bogs in Scotland

District	NGR	Site name	Area	Major land-cover	"Best" land-cover	Primary natural area P1	Primary degraded area P2, P3	SSSI area	NNR	Planning consent area	Comments
Stirling	NS 548955	Garchell Moss	175	P 5	P 5						
Stirling	NS 560976	Gartrenich Moss	142	P 5	P 5						
Stirling	NS 573974	Gartur Moss	33	P 5	P 5						
Stirling	NS 620962	Killorn Moss	33	P 1	P 1	22		35			
Stirling	NS 742967	Ochtertyre Moss	106	P 5	P 5			35			
Stirling	NS 537957	Offerance Moss	81	P 3	P 1	28	4	42		(36)	Expired 1993
Stirling	NS 647962	Shirgarton Moss	58	P 1	P 1	12	9	38			
Stirling	NS 604966	Station Wood	8	P 5	P 5						
Stirling	NS 837908	Wester Moss	46	A 2	P 1	15		32			
Strathkelvin	NS 700720	-	38	P 2	P 2		12				
Strathkelvin	NS 683688	-	19	U	U						
Strathkelvin	NS 707708	-	17	S 2	P 2		4			15	
Strathkelvin	NS 670683	-	12	P 2	P 2		4				
Strathkelvin	NS 659683	-	6	S 1	S 1						
Strathkelvin	NS 698675	-	2	P 5	P 5						13 ha in total, 11 ha in City of Glasgow
Strathkelvin	NS 650694	Auchengree Moss	14	P 2	P 2		6				
Strathkelvin	NS 684681	Garnkirk Moss	51	S 1	P 2		4				174 in total, 51 ha in City of Glasgow
Strathkelvin	NS 702735	Gartshore Moss	34	A 2	P 2		5				43 ha in total, 9 ha in Cumbernauld
Strathkelvin	NS 683756	Inchterf	3	P 2	P 1	1	2				28 ha in total, 25 ha in Cumbernauld
Strathkelvin	NS 647718	Lenzie Moss	34	S 1	S 1						
Strathkelvin	NS 623720	Low Moss Plantation	19	P 5	P 5						
Strathkelvin	NS 620712	Low Moss Plantation	11	P 3	P 2						
Strathkelvin	NS 712697	Shrankmuir	8	A 1	A 1						
Tweeddale	NT 232545	-	74	P 5	P 5						
Tweeddale	NT 139510	-	4	U	U						
Tweeddale	NT 120483	Ingraston Moss	23	A 1	A 1						27 ha in total, 4 ha in Lanark
Tweeddale	NT 136507	Lauders Loch	5	U	U						
Tweeddale	NT 225551	Springfield Moss	8	S 2	S 2					y	130 ha in total, 122 ha in Midlothian
Tweeddale	NT 201533	Whim Bog	224	P 3	P 1	30	60	94		75	
Tweeddale	NT 140498	White Moss	66	P 1	P 1	56	10				
West Lothian	NS 884666	-	35	P 1	P 1	10	10				66 ha in total, parts in Monklands and Motherw
West Lothian	NS 957620	-	21	P 3	P 2		18				
West Lothian	NS 920672	-	15	P 2	P 2		15				69 ha in total, 54 ha in Motherwell
West Lothian	NS 898683	-	15	P 1	P 1	15					
West Lothian	NS 870671	-	12	A 1	A 1						15 ha in total, 3 ha in Monklands
West Lothian	NS 888675	-	6	P 1	P 1		6				
West Lothian	NS 929665	-	6	P 5	P 5						60 ha in total, 54 ha in Motherwell
West Lothian	NS 882669	-	5	P 1	P 1	5					
West Lothian	NS 924670	-	3	P 1	P 1	3					54 ha in total, 51 ha in Motherwell
West Lothian	NS 873669	-	1	A 1	A 1						2 ha in total, 1 ha in Monklands
West Lothian	NS 885681	Blawhorn Moss	131	P 1	P 1			109	Y		
West Lothian	NS 975613	Nether Longford Moss	44	P 3	P 3		35			12	
West Lothian	NT 013678	Tailend Moss	30	P 2	P 1	5	20	30			Tailend Moss SSSI
Wigtown	NX 120547	-	259	A 2	P 2		15				
Wigtown	NX 114424	-	32	U	U						
Wigtown	NX 095532	-	24	U	U						

Table 8.2 Raised Bogs in Scotland

District	NGR	Site name	Area	Major land-cover	"Best" land-cover	Primary natural area P1	Primary degraded area P2, P3	SSSI area	NNR	Planning consent area	Comments
Wigtown	NX 101545	-	18	U	U						
Wigtown	NX 077500	-	11	U	U						
Wigtown	NX 390407	-	11	U	U						
Wigtown	NX 102415	-	8	U	U						
Wigtown	NX 107439	-	8	U	U						
Wigtown	NX 090432	-	7	U	U						
Wigtown	NX 108412	-	6	U	U						
Wigtown	NX 094540	-	6	U	U						
Wigtown	NX 106417	-	3	U	U						
Wigtown	NX 406488	Airies Moss	64	P 5	P 5						
Wigtown	NX 394439	Auchness Moss	113	P 5	P 5						
Wigtown	NX 063526	Barnchalloch	27	P 2	P 2		10				
Wigtown	NX 091619	Baylett Moss	16	U	U						
Wigtown	NX 001637	Black Loch Moss	22	U	U						
Wigtown	NX 431579	Borrow Moss	34	P 1	P 1	25					
Wigtown	NX 428589	Carsegowan Moss	76	P 1	P 1	60		50			
Wigtown	NX 092437	Drumbreddan Moss	55	P 5	P 5						
Wigtown	NX 378458	Drumscallan Moss	119	P 5	P 5						
Wigtown	NW 990641	Garchrie Moss	153	S 1	P 1	50	26				
Wigtown	NX 408449	Grennan Moss	111	P 5	P 5						
Wigtown	NX 439596	Moss of Cree	474	P 5	P 5					30	
Wigtown	NX 408427	Ravenstone Moss	108	P 5	P 5						
Wigtown	NX 075471	Ringuinea Moss	59	P 5	P 5						

Table 8.3 Raised bogs in Wales

County	NGR	Site name	Area	Major land-cover	"Best" land-cover	Primary natural area P1	Primary degraded area P2, P3	SSSI area	NNR	Planning consent area	Comments
Clwyd	SH 930499	Nug & Merddwr Complex	1	P 2	P 2						Added at last revision
Clwyd	SJ 322554	Llay bog	0	P 2	P 1			0			Added at last revision, Llay Bog SSSI
Clwyd	SJ 360540	Vicarage Moss	6	P 4	P 4			21			+ Fenns & Whixall SSSI
Clwyd	SJ 492371	Fenns & Cadney Mosses	755	S 1	P 2		155	691		283	954 ha in total (incl. Wem Moss), 183 ha in Shropshire;
Dyfed	SM 976346	Esgyrn Bottom	15	S 1	P 1	5	5	48			
Dyfed	SN 060299	-	174	A 2	A 2						
Dyfed	SN 365188	Cors Goch - Llanllwch	75	P 1	P 1	40		40			
Dyfed	SN 573134	Gorslas	23	P 3	P 3		10				
Dyfed	SN 635916	Cors Fochno	1,458	P 1	P 1	200	75	576	Y		
Dyfed	SN 665941	-	166	A 1	A 1			2			
Dyfed	SN 677951	-	76	A 1	A 1						
Dyfed	SN 682944	-	5	A 1	A 1						
Dyfed	SN 696637	Cors Caron	1,133	P 1	P 1	480	270	872	Y		
Gwynedd	SH 636142	Arthog Bog	20	S 1	P 3		4	64			
Gwynedd	SH 700335	Cors Goch, Trawsfynydd	85	P 1	P 1	85					Phase 1 maps indicate a smaller natural area
Mid-Glamorgan	ST 121956	Nelson Bog	10	P 1	P 1			Y			Nelson Bog SSSI
Mid-Glamorgan	ST 144863	Nelson Bog	8	P 1	P 1	8					
Powys	SN 965250	Illtyd pools	0?	P 2	P 1			93			Added at last revision
Powys	SO 185165	Craig-y-Ciliau	6	P 2	P 2						Added at last revision
Powys	SO 196484	Rhosgoch Common	61	P 2	P 2			61			

A further site is mentioned as raised by Slater, 1984 at Llangynog (SN 3516)

Table 9.1 Intermediate bogs in England

County	NGR	Site name	Area	Major land-cover	"Best" land-cover	Planning consent	Comments
Cumbria	NY 519687	Cracrop Moss	66	U	U	-	
Cumbria	NY 506667	Walton Moss	433	P 1	P 1	-	
Cumbria	NY 178279	Wythop Moss	314	P 3	P 1	-	
Devon	NH 698708	Padley Common	6	U	U	-	
Devon	NN 722910		15	U	U	-	
Devon	NN 712833		13	U	U	-	
Devon	NN 711723		3	U	U	-	
Devon	NS 568435		19	U	U	-	
Northumberland	NT 953482	Thornton Bog	79	U	U	-	

Table 9.2 Intermediate Bogs in Scotland

District	NGR	Site name	Area	Major land-cover	"Best" land-cover	Planning consents area	Comments
Annandale & Eskdale	NY 318762	Bells Flow	109	P 1	P 1	-	4
Annandale & Eskdale	NY 332770	Bogrie Flow	28	P 5	P 5	-	3
Annandale & Eskdale	NY 346770	Glenzier Flow	28	P 5	P 5	-	3
Banff & Buchan	NJ 909553	-	710	S 1	P 2	-	5
Banff & Buchan	NJ 865546	-	199	S 1	S 1	-	4
Banff & Buchan	NJ 922580	-	39	A 1	A 1	-	3
Banff & Buchan	NJ 895569	-	17	U	U	-	2
Banff & Buchan	NJ 826592	Moss of Fishrie	46	S 1	P 2	-	3
Banff & Buchan	NJ 893580	Tillinamolt	171	S 2	P 1	62	4
Berwickshire	NT 840692	Dowlaw Moss	12	U	U	-	2
Berwickshire	NT 627485	Sherrifmoor	108	P 5	P 5	-	4
Clydesdale	NT 017537	-	67	U	U	-	3
Clydesdale	NS 956515	Braehead Moss	114	P 1	P 1	-	4
Clydesdale	NT 014565	Cobbinshaw Moss	29	A 2	P 2	77	3
Clydesdale	NT 003540	Stallashaw Moss	515	P 2	P 1	-	5
Cumbernauld & Kilsyth	NS 800742	Fannyside Muir	633	P 5	P 2	-	5
Cumnock & Doon Valley	NS 657271	-	17	U	U	-	2
Cumnock & Doon Valley	NS 688287	-	14	U	U	-	2
Cumnock & Doon Valley	NS 654273	-	3	U	U	-	1
Cumnock & Doon Valley	NS 588237	Airds Moss	1449	P 5	P 1	28	5
Cumnock & Doon Valley	NS 671276	Burnfoot Moor	314	P 5	P 2	-	4
Dunfermline	NT 076915	-	21	U	U	-	2
Dunfermline	NT 140883	-	19	U	U	-	2
Falkirk	NS 875692	-	214	P 5	P 2	-	4
Falkirk	NS 842773	-	44	P 5	P 5	-	3
Falkirk	NS 771803	-	28	U	U	-	3
Falkirk	NS 847757	-	27	U	U	-	3
Falkirk	NS 853760	-	25	U	U	-	3
Falkirk	NS 842762	-	11	U	U	-	2
Falkirk	NS 862714	-	10	U	U	-	1
Falkirk	NS 874752	Darnrig & Gardrum Mosses	385	S 2	P 1	160	4
Falkirk	NS 833760	Fannyside Muir	53	P 5	P 2	?	3
Gordon	NJ 916210	-	50	U	U	-	3

Table 9.2 Intermediate Bogs in Scotland

District	NGR	Site name	Area	Major land-cover	"Best" land-cover	Planning consents area	Comments
Gordon	NJ 955210	-	30	U	U	-	3
Kilmarnock & Loudoun	NS 471509	Dun Moss	30	U	U	-	3
Kincardin & Deeside	NO 879960	-	27	U	U	-	3
Kincardin & Deeside	NO 897973	-	18	U	U	-	2
Kincardin & Deeside	NO 876968	-	15	U	U	-	2
Midlothian	NT 203555	Auchencorth Moss	334	S 2	S 2	162	4
Monklands	NS 811697	-	634	S 1	S 1	-	5
Monklands	NS 842658	-	248	P 5	P 2	-	4
Monklands	NS 856674	-	81	P 2	P 1	-	3
Monklands	NS 796722	Fannyside Muir	35	P 5	P 2	-	3
Moray	NJ 378537	Gow Moss	365	P 5	P 5	-	4
Moray	NJ 033417	Moidach Mor	713	P 3	P 1	-	5
Nairn	NH 956424	-	83	P 3	P 1	-	3
Nairn	NH 980410	-	42	U	U	-	3
Nairn	NH 934401	-	39	U	U	-	3
Nairn	NH 940407	-	19	U	U	-	2
Perth & Kinross	NO 183565	Dun Moss	258	P 2	P 1	-	4
Renfrew	NS 421592	-	36	U	U	-	3
Renfrew	NS 424573	Hartfield Moss	247	P 5	P 5	-	4
Renfrew	NS 364627	Marshall Moor	22	U	U	-	2
Ross & Cromarty	NH 721743	-	39	U	U	-	3
Stewartry	NX 582817	Garroch Moss	12	U	U	-	2
Tweeddale	NT 195547	Auchencorth Moss	173	S 2	S 2	-	4
West Lothian	NS 862676	-	24	U	U	-	2
West Lothian	NS 867681	-	23	U	U	-	2
West Lothian	NT 042588	Cobbinshaw Moss	909	P 5	P 1	25	5
Wigtown	NX 370497	-	104	P 5	P 2	-	4
Wigtown	NX 387497	-	31	U	U	-	3
Wigtown	NX 359495	-	24	U	U	-	2
Wigtown	NX 342492	-	15	U	U	-	2
Wigtown	NX 355497	-	15	U	U	-	2
Wigtown	NX 352484	-	11	U	U	-	2

Table 9.3 Intermediate bogs in Wales

County	NGR	Site name	Area	Major land-cover	"Best" land-cover	Planning consent	Comments
Dyfed	SN 673211		1	P 1	P 1	0	
Dyfed	SN 660205		2	P 1	P 1	0	
Dyfed	SN 577163		7	P 1	P 1	0	
Dyfed	SN 590155		13	P 1	P 1	0	
Dyfed	SN 584155		10	P 1	P 1	0	
Dyfed	SN 571151		12	P 1	P 1	0	
West Glamorgan	SN 885088		23	P 1	P 1	0	
West Glamorgan	SN 727086		17	P 1	P 1	0	

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APPENDIX 1 : BRITISH PEATLAND DATA SOURCES

A1.1 Maps

A1.1.1 British Geological Survey (1" and 1:50,000) Drift Map Series are available for a large proportion of Britain and in general peat has been mapped if it exceeds a thickness of 1m. The area indicated is thus more limited than the potential ecological resource. No land-use information is provided.

A1.1.2 Soil Survey of England and Wales (1" and 1:50,000, also 1:25,000) Soil Map Series are extremely limited in their coverage. Peat is defined as more than 40cm of organic material within the top 80cm of soil or more than 30cm of organic material over rock and mapped where it achieves these depths. An indication of current land-use or potential is given on the 1:25,000 Series. The maps distinguish between fen peats and bog peats but the distinction between raised bog and blanket bog is not as clear.

A1.1.3 Soil Survey of Scotland (1" and 1:50,000) Soil Map Series covers the whole of Scotland. The minimum depth of peat noted is 30 or 50cm. However, in general, boundaries of peat blocks take in a smaller area than the British Geological Survey maps. The reason for this was not ascertained. Information is not provided about current land-use, but the Soil Series categories permit the distinction to be made between fen peat and bog peat.

A1.1.4 Soil Survey of England and Wales and of Scotland, (1:250,000) Map Series covers the whole of Great Britain. Peat is mapped when it exceeds a depth of 30 or 50cm but the scale is such that areas less than 75 - 100ha are not shown. The maps are therefore suitable for indicating major peat deposits only. Fen peat can be distinguished from bog peat and raised bog peat from blanket bog peat.

A1.2 Other data sources

A1.2.1 The MLURI (Macaulay Land Use Research Institute) Peatland Database contains data about peat type, characteristics and associated land-use, based on data from the Scottish Peat Committee. The 1:250,000 Soil Maps for Scotland based on 1:50,000 survey information, form the mapped component of the system, the scale being adequate for the indicative strategies addressed by MLURI but were considered insufficiently discriminating for the purposes of a conservation inventory.

A1.2.2 Peat Resources in the UK (Robertson and Jowsey, 1968) was based on MLURI data and formed the first broad assessment of "exploitable" peat reserves in Britain. As such, it excluded areas of thin peat and isolated inaccessible pockets. No distinction was made between different types of peat. It found 1,341,841ha in Britain, with 821,381ha in Scotland, 361,690ha in England and 158,770ha in Wales. These figures have been cited as the extent of Britain's peat resource for nearly 25 years.

A1.2.3 The Peat Deposits of Wales: an inventory and interpretation derived data from the Geological Survey, the Soil Survey and other sources to map and distinguish between peats deeper and shallower than 0.5m. Detailed maps were not published but a composite map for the Principality (Taylor, 1983) gives a clear indication of the distribution of both types.

A1.2.4 The Survey of Lowland Peat in England and Wales (Burton and Hodgson, 1987) was undertaken in the mid-1980s. It classifies known sites below 200m OD. according to peat type and so identifies the vast majority of raised bogs in England and Wales. All sites over 100ha are listed and many smaller sites are also recorded, though some were not included due to limitations on time and resources. The area given for each site represents the existing extent of peat soil, whatever its current land-use. This would generally correspond to the original extent of the site, although progressive oxidative wastage in some areas means that the original extent of peat was greater than the present extent. A considerable amount of information is provided about current land-uses and vegetation cover. However, their land-use class "N", which embraces nature reserves, SSSIs, mire or semi-natural vegetation, cannot be taken to mean that a site retains primary peat nor that it carried "natural" raised bog vegetation.

A1.2.5 Peatland utilisation in the British Isles (Bather and Miller, 1991) was not available at the time of Rowell's (1990) review of data sources. It is in part a review, taking the Soil Survey report by Burton and Hodgson (1987) as the main data source for England and Wales, and in part presents original data, provided by the Peat Producers' Association, for Scotland. On the basis of the land-use class "N" provided by Burton and Hodgson, it calculates the extent of raised mire sites in England and Wales having a natural vegetation component. Thus the total includes sites which no longer carry raised bog vegetation. The data for Scotland consist of a single figure which is described as raised bog peat of conservation value. It is not explained how this was calculated.

A1.2.6 The Welsh Lowland Peatland Survey (Ratcliffe and Hattey, 1982) examined a very large proportion of the peatland sites in lowland Wales, taking the 1,000' (306m) OD. contour as its altitudinal limit and provides a list of raised bogs which continue to have some form of bog vegetation, however fragmentary. The land-use information does not give a clear indication of the present condition of the bog.

A1.2.7 A Peatland Survey of Mid-Strathclyde (McTeague and Watson, 1991) was the first peatland survey to use the NPRI to define the areas of survey. The present land-uses were mapped using a combination of aerial photography and field survey and quadrats were taken for those areas which still possessed any primary dome. The survey presents a single snapshot of the sites at the time (1988/89) and is valuable as both a measure of the amount of raised bog habitat which has been lost up to the present and as a base-line for auditing change.

A1.2.8 Other publications. Information is available for several sites or groups of sites. Slater (1984) provides a summary account of Welsh raised bogs. Slater (1974) describes the vegetation of Cors Fochno (Borth Bog), Tansley (1939) and Godwin and Conway (1939) describe Cors Caron (Tregaron Bog), and Bain and Eversham (1992) provide a detailed description of the plant and animal populations of Thorne and Hatfield Moors. Greig (1975) gives a detailed account with maps and quadrats of the raised bogs of the south Solway plain, while Lindsay (1978) provides a similar account for the raised bogs of the Duddon Valley, as well as an updated description of one of Grieg's Solway sites following a major fire in 1976 (Lindsay, 1977). Ferreira (1977, 1982) gives succinct accounts of the condition and existing vegetation for the raised bogs of the Grampian lowlands.

A1.2.9 A Nature Conservation Review (Ratcliffe, 1977) provides, for all major habitat types, a description of the sites regarded as of highest nature conservation importance in Britain. Thus only a relatively small proportion of all raised bogs were included.

A1.2.10 NCC surveys. Phase 1 habitat mapping has been carried out since 1976, much of it by Wildlife Trusts on contract to NCC. Coverage is patchy throughout Britain. The methodology has changed somewhat over the years and consistency of mapping requires careful assessment. More recently SSSIs have been subject to a concerted survey effort (NCC, 1989). In addition, files held by statutory conservation bodies regional offices were a fruitful source of bespoke survey information supported by notes of site visits.

A1.2.11 Aerial photography. Aerial photographic cover is generally available from 1946 - 50 onwards and there is some earlier material. Many raised bog areas have been photographed several times. Having identified areas of raised bog, it is then possible to use aerial photographs to map the more generally encountered land cover and vegetation conditions on such sites.

A1.2.12 SSSI databases contain information about location, area, administrative district, conservation status and habitat type. The information is relatively complete and up-to-date.

A1.2.13 Information on planning consents for peat extraction in England and Wales was provided by the Department of the Environment Minerals Division in the form of a compilation, dated March 1993, mainly from data supplied by the relevant mineral planning authorities and the Peat Producers" Association. Data for Scotland were taken from a survey of peat consents in Scotland dated 1992 undertaken by the Scottish Office.

APPENDIX 2. RAISED BOG CONDITION CLASSES

Summary

* The assessment of the nature conservation condition of raised bogs was primarily a desk exercise collating information derived from various sources including maps, aerial photography and, where practical, field survey.

* A pragmatic classification system was therefore needed which could be implemented quickly and unambiguously.

* Most classes have some rehabilitation potential though the potential for progression towards near-natural bog conditions is by no means a simple task for all classes.

* The basic division in assessing condition is between *primary* bog areas, where the original surface peat remains more or less intact, and *secondary* bog where the peat has been artificially removed (normally by extraction for domestic fuel and latterly for horticultural uses). The class for *archaic* bog covers land claimed by drainage for agricultural crops and built land.

A2.1 Evaluation objectives and methods

The first step in the assessment of the raised bog resource identified all possible peat deposits. The necessary information on the nature conservation condition of every raised bog in Britain hinged on developing a pragmatic yet robust classification which could be carried out with confidence mainly as a desk exercise with minimal field work. The condition classes needed to be mappable.

Accumulated evidence had already indicated that much of the raised bog resource was degraded and required positive management works to restore its nature conservation interest. The potential for restoration of an ombrotrophic mire community, supporting the typical plant and faunal assemblage, rests largely upon hydrological condition.

A key distinction was made between *primary* bog (coded P) in which the peat is still intact (*ie* has not been removed or tilled) at least over part of the site, and *secondary* bog (S) from which some of the thickness of the peat deposit has been removed. Land claimed by drainage for agricultural crops and built land was classed as *archaic* (A). Sites which could not be assessed are coded U (condition un-established) in the inventory.

Within these three categories, further division was made on the basis of the condition of vegetation, reflecting both past and current land uses and other factors relevant to each site's value for conservation and science, including the potential to restore the interest. Nine condition classes were defined and areas within them were assigned to the relevant classes on the basis of information derived from various sources (including maps, aerial photography and, where practical, field survey). A more detailed analysis of the classes found on bogs generally is given in Lindsay (1995).

Detailed botanical information about the vegetation of raised bogs reflects differences in climate, amongst other factors, and varies from one part of the country to another. Such vegetation information is important for individual site evaluation, either when assessing the full range of variation in the GB raised bog resource, or, for example, for monitoring ecological change. It forms part of the second stage of the inventory.

A2.2 Raised bog condition classes (colour plates of these are shown by Lindsay, 1995)

Class P1 Primary - near-natural

The peat deposit is retained in an unbroken vertical sequence, with the surface and the vegetation unmodified by cutting or other human intervention. The plant assemblage consists of typical, presumed, near-natural bog vegetation with well-developed small-scale features (termed microtopography) including drier hummocks and wetter hollows. The hydrological function of the acrotelm has not been impaired or disrupted. In least disturbed locations, the natural zonation from the mire margin or **rand** (drier) to open mire expanse (wetter) is evident. At the edge of a bog, where the bog peat is shallower and the hydrology governed by groundwater or other enriched surface waters, a marginal zone known as a **lagg** fen may develop. Where the mire margin is artificially created, for example by a vertical peat face, the zonation observed may be influenced to a greater or lesser degree. Within the unaltered area, however, the peat "archive" will largely be in place.

It is very rare to find remnants of a primary dome with a distinct, unaltered rand and lagg fen even around part of its perimeter. More commonly the bog edge is simply a sharply defined peat face juxaposed with arable land, wet grassland, birch scrub or old peat cuttings. Partial or fragmented areas of primary bog are inherently unstable hydrologically. This factor can place the plant and faunal composition of the living surface at risk through seminatural successional change, for example to dwarf shrub or scrub dominated habitats. Conservation interventions can, however, minimise this decline particularly if they aim to manage the changes to structural features of the extant raised bog and prevent their erosion, for example by managing peripheral ditches and guiding neighbouring land use activities.

Class P2 Primary - degraded bog

Where the intact or primary bog surface has been affected by, for example, fire or piecemeal drainage at the bog margins, the main peat-forming species have been lost and the acrotelm functions have been disrupted, the category "primary degraded" is used. Degraded areas may retain all or little of the original structure of surface features depending on the degree of fire intensity and the extent of peat shrinkage (due to drainage). The vegetation at this point in time may not appear to be peat-forming, but remains nevertheless typical of conditions throughout Great Britain. In fact, even a badly burnt bog with much bare peat will have significant re-growth of the two cotton grasses *Eriophorum vaginatum* and *E. angustifolium* in a very short time. It would be unusual not to find seedlings and regrowth of cross-leaved heath (*Erica tetralix*) and ling (*Calluna vulgaris*). Fire damage removed almost all the vegetation at Glasson Moss NNR, Cumbria, yet this site has shown remarkable recovery since its last major fire in 1976. The "moribund" state usually proves to be temporary provided management practices are sympathetic.

On drier sites the degradation may have resulted in the lowering of the water table. Dwarf shrubs may be more abundant, particularly heather and occasionally bilberry or crowberry *(Empetrum nigrum)*. Hare's tail cotton grass characteristically forms larger tussocks under such

conditions, and the moss layer will be dominated by *Hypnum cupressiforme, Pleurozium schreberi* and *Rhytidiadelphus* spp. and *Sphagnum* species restricted or rarely absent entirely. Such conditions may persist for a greater lengths of time than similar conditions resulting from fire, unless interventions to reinstate water levels can be pursued.

Class P3 Primary - drained
Where the bog surface has been drained by either a regular or irregular but nonetheless close-spaced sets of drains, the ground is regarded as "primary drained". The overall character of the bog surface is essentially intact, though the vegetation may have changed. Depending on the function of the drains, the upper layers of peat are likely to be undergoing oxidative wastage and cracking, and some slumping due to consolidation may also occur. The resultant effect on the peat "archive" is moderated by depth and function of the drains. The resistance of some items in the archive to decomposition moderates the impact further.

Depending on the intensity and age of drainage, the vegetation may still retain features and species which occur in relatively undamaged bogs, though in extreme cases they may have lost almost all trace of the original vegetation. The most intense or long-established drainage effects have a profound effect on the surface features of the bog. Bog moss hummocks and hollows are lost. Bracken *(Pteridium aquilinum)* and birch scrub are common components of heavily drained raised bogs, often with an admixture of heather and bilberry.

Drainage is rarely an activity carried out on its own; it is generally a precursor to some other form of land-use change such as peat extraction, afforestation or agricultural land-claim. However, many such ventures have been only partially successful or simply abandoned. Sites may thus be found partially or entirely drained, with no further activity other than the natural succession of vegetation across a dry peat surface. In time drains may heal themselves by infilling with *Sphagnum*, and gradually it is possible for a near-natural hydrological regime to re-establish, unless water flow remains unnaturally high through the loose fresh *Sphagnum*. Management by ditch blocking can be used to manipulate such situations and reinstate more natural conditions.

Class P4 Primary - open-canopy scrub or woodland
Class P5 Primary - closed canopy woodland
Wooded bogs may be densely covered with self-sown scrub, be dominated by self-sown mature woodland or may have been afforested. In the first two cases, the cause of scrub and tree invasion may be drying of the surface consequent upon drainage of all or part perhaps in preparation for for peat extraction. The surface of the mire under the scrub or trees may not yet have been greatly modified, *i.e.* the primary nature not substantially impaired. In afforested sites, planting is normally preceded by intensive drainage and thus the surface will have been influenced by the construction of channels. Slumping of drains can lead to gradual failure of the drainage system if coupled with the accumulation of leaf litter and other debris. Under very poorly managed plantations the surface may not be markedly different from that beneath self-sown woodland.

The commonest species of self-sown woodland is birch (*Betula*). Birches have a foliage which is not dense even in high summer and there is little interception of rainfall during their leafless winter months. The density of trees also tends to be less than is typical for a plantation. While water loss and leaf litter do have an effect on the species composition of the ground layer, simplifying it to only five or so species with perhaps only two or three *Sphagnum* species - none

of which are typical of open bog conditions in Britain (*S. recurvum, S. palustre* and *S. fimbriatum*) - the community is still performing acrotelm functions so in principle can be manipulated relatively easily.

The factor having most influence over the eventual state of the woodland cover and the peat surface beneath is the water balance which is related to tree growth. When tree growth is sufficiently vigorous for canopy closure to occur, interception and evapotranspiration will tend to cause a steady drying out of the bog surface layers to a much greater degree than is possible with drainage alone. Hence the distinction and significance of categories P4 and P5.

In plantations, if the drainage system collapses early, tree growth may become sufficiently checked to prevent canopy closure and the water-table of the bog may then steadily rise back to the surface. Under these conditions, *Sphagnum* growth may re-establish and the plantation subsequently come to resemble examples of self-sown woodland which preserves *Sphagnum*-rich cover.

Class S1 Secondary - regenerating and revegetating cutover

The vast majority of raised bogs has at least some history of domestic peat cutting. Indeed sites are recorded from both Britain and Ireland where the entire primary dome has been removed in this way, leaving a secondary surface which has subsequently re-established a peat-forming vegetation. Domestic peat cuttings which are still actively worked are often still regenerating because the living turves, taken from above the fresh cut, are placed at the foot of the new face. They then knit together into a secondary vegetated surface which abuts the fresh-cut peat face.

One of the most evident indications of the boundary between regenerating peat cuttings is the presence of a cut peat face or, in older cuttings, a distinct, if overgrown, step up from the regenerating cuttings onto what is usually somewhat drier primary raised bog, at least close to the face. Cutting faces and steps are often quite prominent on stereo aerial photographs, although on older cuttings the height of the step may be no more than 30cm. Often a band of heather or bilberry highlights the upper edge of the step and this, combined with the linear or rectangular nature of such edges, is sufficient to identify the boundary between primary and secondary surface with certainty. On occasions where birch surrounds the primary dome, a distinct face or step will often be found within the ring of scrub woodland.

Identification of the secondary areas themselves is usually quite simple from aerial photographs because they possess characteristic broad bands of tone, sometimes running parallel, sometimes with no obvious overall orientation. The bands often have a coarsely mottled appearance. On other occasions the bands may be very pale. In complete contrast, areas which have been worked commercially, then abandoned, tend to have a very dark tone because of either heather or scrub dominance. Only when the old cutting hollows have re-wetted and filled up extensively with *Sphagnum* does the tone change to one characterised by bands of pale colour.

Sites which have lost their primary surface completely but which nevertheless retain sufficient depth of peat to remain ombrotrophic must be identified using surface features such as evident banding, angular or rectangular features, and a vegetation which is often characterised by a relatively high proportion of *Sphagnum recurvum* or a markedly impoverished species complement despite a high *Sphagnum* cover. It is rarely possible to determine the predominant *feeding* of such cuttings from the appearance of the vegetation on aerial photographs and in a number of cases they may well no longer be ombrotrophic. Small areas of old regenerating peat

cuttings, or even flax-retting pools, are often mistakenly identified as natural bog hollows. The usual characteristics which distinguish the two are the angular nature of the outline, and the abrupt vertical transition from uncut to cut surface, in the case of dug features. Natural hollows tend to have softer edges, and the vertical drop from ridge to hollow is only ever abrupt (on raised bogs in Britain) when the bog is undergoing some form of water-table draw-down.

The most common feature of regenerating cuttings is the simplicity of the species complement with, typically, no more than seven or eight species in total. Often a single species of *Sphagnum* dominates the ground layer - usually *S. recurvum* or sometimes *S. papillosum* or *S. magellanicum*. The rarer species of *Sphagnum*, such as *S. imbricatum* or *S. fuscum* are never found in such cuttings in Britain, nor generally are certain higher plants such as the great sundew, round-leaved sundew, deer-hair grass and the whole group of *Cladonia* lichens, although it is possible to find some cuttings, particularly old domestic cuttings, where some or all do occur.

Despite this relative simplicity both in terms of species complement and surface microtopography, and the somewhat truncated archival record, many sites which have been cut-over in part, or even over their entire surface, nevertheless retain considerable scientific and natural heritage value. In some cases the abandoned and revegetating cuttings have re-developed a vegetation which is typical of "active raised bog" (92/43/EEC).

Apart from a few sites in Wales, the majority of cut-over bogs in Britain which can still be identified as having once been raised bog within the definition of the present study, still retain their ombrotrophic character. Some modern fen sites may once have been raised bog but such origins cannot now be determined from existing conditions. These sites are inevitably omitted from the catalogue of raised bogs. The list of sites provided in this report should thus be taken as the *minimum* former area of raised bog habitat.

Class S2 Secondary - commercial or domestic workings

As mentioned above, most domestic peat cuttings can be classed as regenerating cuttings because the traditions of peat-bank management and husbandry encourage the maintenance of a vegetated surface on all parts but the cut face itself and drainage of the area is usually localised in effect. For a commercial operation to be most efficient, vegetation is removed from the entire surface of the worked area either because the method of working requires large expanses of bare peat (*e.g.* surface milling) or because vegetation represents a fire risk and also tends to establish root systems which make subsequent extraction and processing more costly. Further, in order to work sites with machinery, efficient dewatering of the peat is essential and there may be a sequence of large-scale drainage, stripping of vegetation and peat cutting, followed by revegetation of the cut surface and some rise in water level until the next dewatering stage commences and cutting proceeds to a lower level.

Methods of working up to the early 1980s meant that, on large sites, the whole area could not efficiently be worked all at once. This tended to lead to a mobile mosaic of bare ground and secondary bog vegetation whereby areas not currently being worked were left to re-establish plant cover until such time as they were to be brought into production again. On such sites the definition of what, exactly, qualifies as "actively worked" and whether any areas of the mobile mosaic can, at any one time, be classed as regenerating cuttings, presents some difficulties. The spread of surface milling has meant a trend towards the removal of vegetation from larger areas

with a greater immediate impact on flora and fauna and an increased likelihood that species will be lost from the site.

For this inventory, areas are classed as secondary if a planning consent extends over part of the site or extraction is occuring over at least some of this area. This class therefore certainly contains a certain proportion of secondary revegetating bog, but as a scattered mosaic which is not feasible to separate out from the much larger area of worked peat.

Class A1 Archaic raised bog soils used for agriculture
Many areas identified as former raised bog on the basis of the type of peat present (*e.g.* Blackland, Turbary Moor and Westhay soil series in England and Wales, Burton and Hodgson, 1987), are now in agricultural use and in air photographs show no evidence that the ground was ever peat bog habitat, apart from the darker appearance of the soil. Despite peat loss due to erosion and oxidation through the effects of drinage and ploughing, such areas may still retain a peat "archive", which may be particularly significant in geographical regions where few or no other forms of raised bog peat remain (*e.g.* Cundill and Whittington, 1992; Hall, Wells, and Huckerby, 1995). They also represent the best, and often the only, possibility of re-creating any form of mire habitat within such areas.

Class A2 Archaic - built development
These include raised bog peats which have been buried beneath roads, buildings, refuse tips or other effectively permanent uses, or destroyed by activities such as opencast coal mining. Such sites have no realistic potential for restoration.

Class U Unknown condition
It proved impossible to establish the condition of a number of sites, and these are currently being examined further.

APPENDIX 3. RAISED BOGS AS PALAEOENVIRONMENTAL ARCHIVES
by Dr John Gordon, Earth Sciences Branch, RASD

A3.1 Introduction

To date, much of the conservation interest in peatlands has focused on their value as contemporary ecological habitats. However, peatlands and peat deposits, including raised bogs, are also of considerable importance as environmental archives. This Annex outlines their value as palaeoenvironmental data sources and summarises the particular interest of raised bogs.

As peat accumulates it builds up an *in situ* record of plant remains. Also contained within this stratified record are, for example, pollen grains, remains of beetles, charcoal, volcanic ash and particulate pollutants. Analysis of these materials can provide unique insights into palaeoecological and palaeoenvironmental changes over timescales ranging from hundreds to thousands of years, as well as human impacts on the landscape.

A3.2 Scientific value of the peat archive

These palaeoenvironmental records are of considerable scientific value. They provide a resource base for scientific research, which is essential to allow testing of existing hypotheses, development of new ideas and application of new research methods. This resource also has important educational value. Analysis of palaeoenvironmental records is based on studies of pollen, plant macrofossils, diatoms, Coleoptera, clastic sediments, sediment geochemistry, mineral magnetism and radiometric dating methods, principally radiocarbon (Birks and Birks, 1980; Oldfield, 1987). Such studies have revealed a considerable wealth of information concerning environmental conditions, patterns and changes during the Quaternary at both local and regional scales (cf. Huntley, 1991). Studies of pollen and plant macrofossils, for example, have allowed detailed reconstructions of the patterns of vegetation change at the end of the last glaciation (eg. Walker and Lowe, 1990), the pattern of spread of different tree species across Britain during the middle Holocene (Birks, 1989) and the impact of Man on the landscape through deforestation and agricultural activities during the late Holocene (eg. Chambers, 1993; Edwards, 1993; Whittington, 1993). The palaeobotanical records thus allow contemporary ecological patterns and changes, together with human impacts, to be assessed in a longer-term context. They also show how plant communities might respond to future environmental changes.

Palaeobotanical records may also be used to infer patterns of climate change in situations where species were stressed or close to tolerance thresholds. For example, in the blanket peats of Caithness there is evidence of a brief expansion of pine forest lasting about 400 years in northern Scotland around 4,000BP in response to changes in precipitation and bog surface wetness (Gear and Huntley, 1991). Pollen and plant macrofossil records from blanket peats and raised bogs also provide proxy records of climate history (Barber, 1981; Dubois and Ferguson, 1985; Bridge *et al.*, 1990; Lowe, 1993; Barber *et al.*, 1994). Volcanic ash layers have also been found in Holocene peats in northern Scotland, pointing to possible links between volcanic eruptions, fluctuations in climate and ecological changes (Blackford *et al.*, 1992).

A3.3 Quaternary studies and the Geological Conservation Review (GCR)

Palaeoenvironmental interpretation and reconstruction forms a significant component of Quaternary studies and this was recognised in the Geological Conservation Review (GCR), the earth science equivalent of the Nature Conservation Review (cf. Campbell and Bowen, 1989; Gordon and Sutherland, 1993). In this context, the overall objective was to select a national network of sites representing the major regional variations in vegetation history and environmental change, as represented in pollen and other proxy records preserved in lake sediments, fens, bogs, blanket peat and raised bogs. Because of the wide availability of potential candidates, the aims were to identify the minimum number of sites considered necessary by consensus of expert opinion to adequately represent the major regional variations in vegetation history across Britain. Regions were defined informally to encompass the major biogeographic variations across Britain. Guidelines for site selection required that sites should, where possible, have good modern pollen analyses supported by radiocarbon dating. It was not possible to investigate the potential of sites not previously studied. Consequently, some areas were found to have few or no satisfactory candidate sites.

In addition, key sites were also selected for particular phenomena of major palaeoecological importance; for example relating to the question of plant refugia and the survival of arctic-alpine communities on Scottish mountains, the history of chalk grassland and environmental degradation of the landscape arising from human activities eg. forest clearance.

Two further categories of pollen site were also included in the GCR coverage (cf. Campbell and Bowen, 1989; Gordon and Sutherland, 1993): (i) sites (usually bogs or lake basins) that provide critical pollen stratigraphic evidence for the timing and patterns of deglaciation at the end of the last ice age (principally Scotland and Wales); (ii) sites that provide critical pollen stratigraphic evidence (usually beds of peat interbedded with inorganic sediments) for the timing and patterns of sea-level and coastal environmental change (eg. Cors Fochno [Borth Bog] in Wales and the Western Forth Valley). Usually, sites in this latter category were selected for their dating and stratigraphic potential as well as their pollen records. For example at East Flanders Moss in the Forth Valley the Main Postglacial Transgression is recorded as a wedge of carse (estuarine) clay in the peat which continued to accumulate as an island in the enlarged estuary. Elsewhere on the east coast of Scotland a number of coastal peat bogs record the occurrence of a high magnitude coastal flood, probably a tsunami, in the form of a thin sand deposit preserved in the peat.

An important aspect of site assessment for inclusion in the GCR is that the site coverage may be considered dynamic in the sense that new sites with better records may be identified as scientific investigations progress.

While it is unlikely that the key reference sites with long, well-dated pollen records will be replaced, there may be scope to modify the coverage of representative sites if better or new localities come to light or as other sites are re-investigated or dated. As palaeoenvironmental studies progress, raised bogs will play an increasingly important role as palaeoenvironmental data sources, complementing the archives of blanket peat and lake sediments.

A3.4 Summary of features of palaeoenvironmental archive

The particular features of value of raised bogs as palaeoenvironmental archives have been summarised by Barber (1993) as follows:

- They comprise *in situ* plant remains, in contrast to lakes which also receive material from their catchments.
- They are directly linked to the atmosphere with only inputs from precipitation and dry deposition.
- Plant remains can be identified to species level.
- The record is normally undegraded.
- The record is normally continuous and can extend back to around 7500BP.
- The record generally has a high resolution.
- The record is generally multivariate, including aspects such as pollen, plant macrofossils, particulate pollutants, volcanic ash.
- The record is normally dateable using a variety of techniques.
- The resource is abundant and easily sampled.

A3.5 Examples of archival "demonstration" value of raised bogs

Two examples provide an instructive demonstration of the types of environmental information that can be obtained from Raised bogs. The first is from the GCR site at Cors Caron (Tregaron Bog) in Mid Wales (Campbell and Bowen, 1989). Here the pollen record spans the last 10,000 years and demonstrates the spread of tree species into the area, beginning with birch, which was replaced by hazel and pine. Elm and oak appeared by 9,000BP and there is a marked rise in alder pollen around 7,000BP. The elm decline is recorded about 4890BP and was followed by a break in sedimentation which may represent a drier phase. In the upper part of the profile, human influences on the vegetation are apparent. Around 2400BP the woodland was replaced by grassland as part of an Iron Age pastoral economy. Later, during the 12th century AD Cistercian monks established arable farming in the area. Tregaron Bog therefore provides a detailed and well-dated record of Holocene vegetation history and environmental change in Mid Wales.

The second example is from Bolton Fell Moss, a large ombrotrophic mire in Cumbria, and illustrates the valuable potential of raised bogs in providing a detailed record of climate change. Analysis of plant macrofossils has revealed a clear relationship between peat stratigraphy and climate change, allowing the development of a proxy climatic record covering the last 6,300 years (Barber *et al.*, 1994). The changes in bog vegetation through time identified from the peat profile can be explained in terms of changes in the bog surface wetness, which in turn reflect the prevailing climatic conditions. The peat profile therefore provides a continuous record of climatic change, reflected in the sensitivity of the bog to changes in the ratio between precipitation and evapotranspiration. Consequently, as well as a record of vegetation history and human activity, the peat stratigraphy of raised bogs also preserves an important climatic signal.

In terms of a national resource, raised bogs must be seen as complementing the palaeoenvironmental records of blanket peat and lake sediments, with which they share a number of the above features (Lindsay, 1995). By virtue of their tendency towards a lowland distribution, raised bogs may also potentially fill an important gap in the spatial distribution of such palaeoenvironmental data sources.

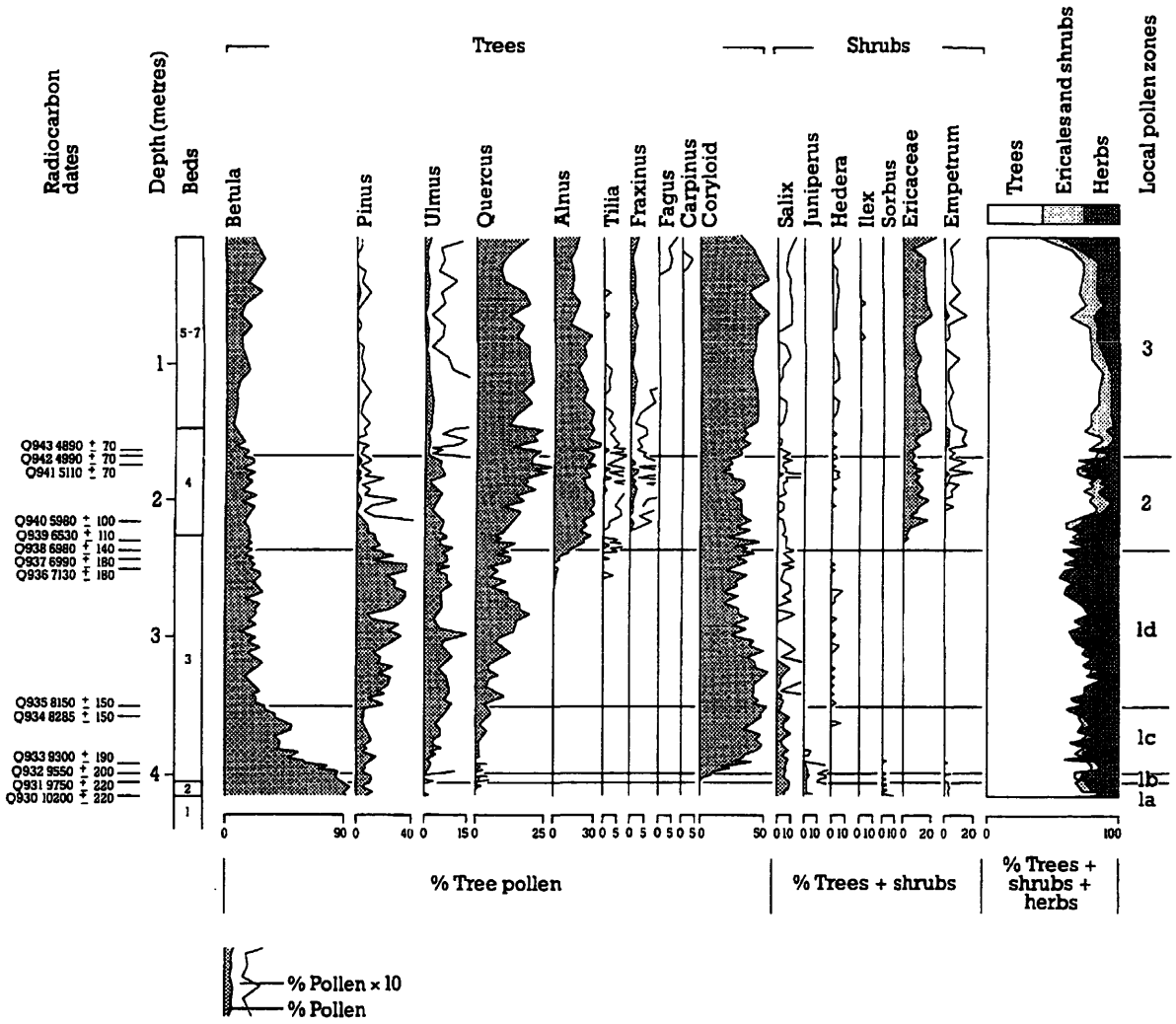

Figure A3.1

Tregaron Bog: a summary of pollen, lithological and radiocarbon evidence (from Hibbert and Switsur 1976)

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Scottish Natural Heritage

Scottish Natural Heritage is an independent body established by Parliament in 1992, responsible to the Secretary of State for Scotland.

Our task is to secure the conservation and enhancement of Scotland's unique and precious natural heritage - the wildlife, the habitats, the landscapes and the seascapes - which has evolved through the long partnership between people and nature.

We advise on policies and promote projects that aim to improve the natural heritage and support its sustainable use.

Our aim is to help people to enjoy Scotland's natural heritage responsibly, understand it more fully and use it wisely so that it can be sustained for future generations.