The South West Peak Natural Area Profile

Peak District and Derbyshire Team

Contents

Foreword

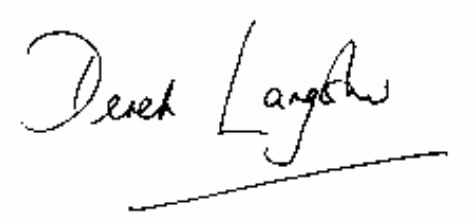
One of the key components of English Nature's *Strategy for the 1990s* has been the Natural areas approach. We examined the local distinctiveness of each part of England to identify their characteristic wildlife and natural features and used this to define a comprehensive series of Natural Areas. Their boundaries are based on the distribution of wildlife and natural features and on the land use pattern and human history of each area, and thus offer a more effective framework for the planning and achievement of nature conservation objectives than do administrative boundaries. They are **not** designations.

Wildlife is not restricted to designated and protected sites such as nature reserves or SSSIs; it occurs throughout the countryside, coast and built up areas of England. No part of the country is without some wildlife interest. The Natural Areas approach gives us a way of determining priorities for nature conservation areas with ecological and landscape integrity, and to set objectives which reflect these priorities. Together, all Natural Areas provide a powerful vision for nature conservation right across England.

The achievement of the objectives described for each Natural Area will be a key part of our new strategy *Beyond 2000*. The objectives will guide our work over the coming years and we hope Natural Areas will allow us to help others in achieving what is best for nature conservation locally.

This Natural Area profile is one of a series of one hundred and twenty, one for each Natural Area. In it we describe the wildlife and natural features of the area and what makes it special and distinctive. Each Natural Area profile is different, since it describes and reflects the local distinctiveness of the area and therefore includes nature conservation objectives which are particular to that area. The profiles have been written after a wide range of local consultations, both on the boundaries of the Natural Areas themselves and on these profiles.

We hope you will find this document useful and look forward to working with you to maintain and enhance the wildlife and natural features of England.



Dr Derek Langslow
Chief Executive

1. The Natural Area Concept

A Natural Area is not a designation, it is a new way of thinking about the countryside. Traditionally we are used to dividing England according to familiar county boundaries and, in the past, nature conservation has largely followed suit. These old boundaries are, however, quite arbitrary in wildlife and landscape terms and inevitably bring together areas of quite unrelated character. The Natural Areas approach is different. It divides the country into ninety-seven areas each of which is characterised by a unique combination of natural features, land-use and culture. These features give the Natural Area both a 'sense of place' and a distinctive nature conservation character which sets an ecologically-based framework for considering the conservation of the natural resources of our countryside. There are a further 23 coastal Natural Areas.

The character of a Natural Area is thus defined by those distinctive species, habitats and physical features that allow us to distinguish it from neighbouring areas. This distinct, coherent character empowers us to develop plans of action for the total natural resource within an area, acknowledging the importance of action in the wider countryside in complementing the role of special sites such as nature reserves and Sites of Special Scientific Interest. Such broadening of scope invites wider participation in the conservation of our natural heritage by providing a framework for caring for earth science features, plants and animals wherever they may be, including those that are still commonplace as well as those that are rare. The concept allows us to "Think Globally, Act Locally".

As part of its role as the Government's statutory advisor on nature conservation in England, English Nature is promoting the Natural Area framework with partners to implement the UK Biodiversity Action Plan. Arising from the *Convention on Biological Diversity* signed at the Earth Summit by the Prime Minister in Rio de Janeiro in 1992, this sets objectives for the conservation of biodiversity in the UK. The development of the Natural Area concept is fundamental to English Nature's drive to ensure that these objectives are met through action at a local level throughout England where national objectives can be translated into local action within meaningful areas of countryside. We believe that Natural Areas provide a logical framework for the process of enhancing England's biodiversity by securing public support for the conservation of our natural heritage and by greatly improving our ability to work together in partnership to secure effective action.

The Character Statement on the following page is that agreed jointly by English Nature and the Countryside Commission to describe this areas as defined in our joint publication ‘The Character of England:- landscape, wildlife and natural features’.

Defining Boundaries

There is no absolute way to precisely locate the edge of a Natural Area - boundaries are not hard and fast and there will be overlap and transition. We have defined the boundary of this Natural Area as a line some 500m wide but in practice this is likely to vary. In some places there are abrupt changes in landscape character, often relating to the underlying geology, which will fix something of a 'hard' boundary. Elsewhere, there may be a transition over say 1km from one distinctive landscape to another; whilst in a few areas the transition may be even more gradual, giving a 'soft' boundary over a distance of up to 5km.

Therefore, although for mapping purposes a hard outline is necessary to define each Natural Area, such lines should be regarded as indicative rather than definitive. Reference to the Character Statement on page 4 and the user's knowledge of local features on the ground should allow an interpretation of the mapped boundary line which is fit for the intended use of the Natural Areas framework.

2. The role of this profile

This profile is designed to describe and evaluate the wildlife and geological features of the South West Peak Natural Area, to consider the influences that affect them and to set objectives for their conservation. In addition to identifying important habitats, species and physical features whose conservation is critical, its role is to set a vision for the development of the natural diversity of the Natural Area well into the next century.

The Natural Area profile is offered to partners as a framework for the conservation of our natural resources. The profile is not written for English Nature alone but for everyone with an interest in nature conservation. Its aim is to pull together conservation bodies, local people and most importantly those who manage the land, towards the achievement of shared objectives that address the priorities for conservation the area.

In setting objectives in this profile, it has been our intention to look beyond the immediate constraints of current circumstances to envisage the best possible scenario for our wildlife and geological features. Whilst in a sense unconstrained, we have made the objectives realistic even though they may only be achievable in the long-term. They are not intended to turn the clock back to some half-remembered golden age but rather to combine some of the best elements of traditional management and integrate them with today's land use practices, to create a varied landscape in terms of structure and species for the benefit of all concerned. There is certainly no desire to change the essential elements of the landscape which distinguish the Natural Area; the intention is simply to take imaginative opportunities to enhance them.

In looking this far ahead some factors become difficult to predict. How will global climate change influence our countryside, what changes might there be in agricultural support mechanisms? For the purposes of the current exercise these issues are too uncertain to be taken into account in any constructive way and we have chosen to exclude them for the present. As the profile is reviewed in the future, these aspects may be taken on board once their likely impact has been quantified more clearly.

Local Biodiversity Action Plans

As part of the realisation of national objectives at a local level, this profile is offered as a framework for developing Local Biodiversity Action Plans. It draws heavily on *Biodiversity: The UK Steering Group Report,* a December 1995 report to Government which develops several of the prime objectives laid out in *Biodiversity: The UK Action Plan (1994)*. The Steering Group report lists species and habitats of particular conservation concern as well as setting out the costed action plans which have so far been prepared for 14 key habitats and 116 key species. Further action plans will have been prepared for another 300 species and 24 habitats by the end of 1998. Local Biodiversity Action Plans are seen as a means of implementing the UK plans at a local level. Included at the end of this profile is a comprehensive list of habitats and species which have been identified in the Steering Group

Report. Objectives relating to all key habitats will be found under the relevant habitat section in the main body of the profile. Wherever possible, key species have been assigned to their appropriate habitat, and objectives for their conservation are listed under that habitat. It is envisaged that Local Biodiversity Action Plans will establish the mechanisms for delivering these objectives, develop targets and set out timetables for action.

3. Character Statement

The South West Peak is an upland area lying at the southern western end of the Pennines, most of which lies within the Peak National Park. The Carboniferous limestone outcrop of the White Peak forms the eastern boundary and the Cheshire Plain lies to the west. The northern boundary is formed by the industrial settlements which run from New Mills to Dove Holes, with the Manchester Pennine Fringe and the Dark Peak to the north.

The landscape of the South West Peak is characterised by Millstone Grits and Coal Measures from the Carboniferous period. Folding and faulting of the Gritstones and Shales, followed by dissection by water courses has produced a varied and often scenically dramatic landscape. The high altitude and heavy rainfall has created acidic soils dominated by moorland vegetation. In the north, large areas are covered by blanket peat deposits. Fast flowing streams have cut deep valleys or 'cloughs' which widen out towards gently undulating farmland of the Shropshire, Staffordshire and the Cheshire Plain.

The area is a mosaic of closely related landform and vegetation patterns. These include extensive tracts of wild, heather-dominated moorland and cottongrass blanket bog with wooded cloughs. Around the small scale enclosed farmsteads there are meadows, rushy pastures and more productive farmland. The economy of the area is sheep farming with some dairy, and a large moorland grouse shoot in the north. The highest parts of the moorland are remote but are criss-crossed by pack horse routes that are incised through heavy usage. The area north of Leek is used for military training and further adds to the isolated character. The wild, exposed character of the area has fuelled the development of a large tourism industry, centred around the Roaches above Leek, and at Errwood Reservoir in the Goyt Valley.

Characteristic features of nature conservation and landscape interest

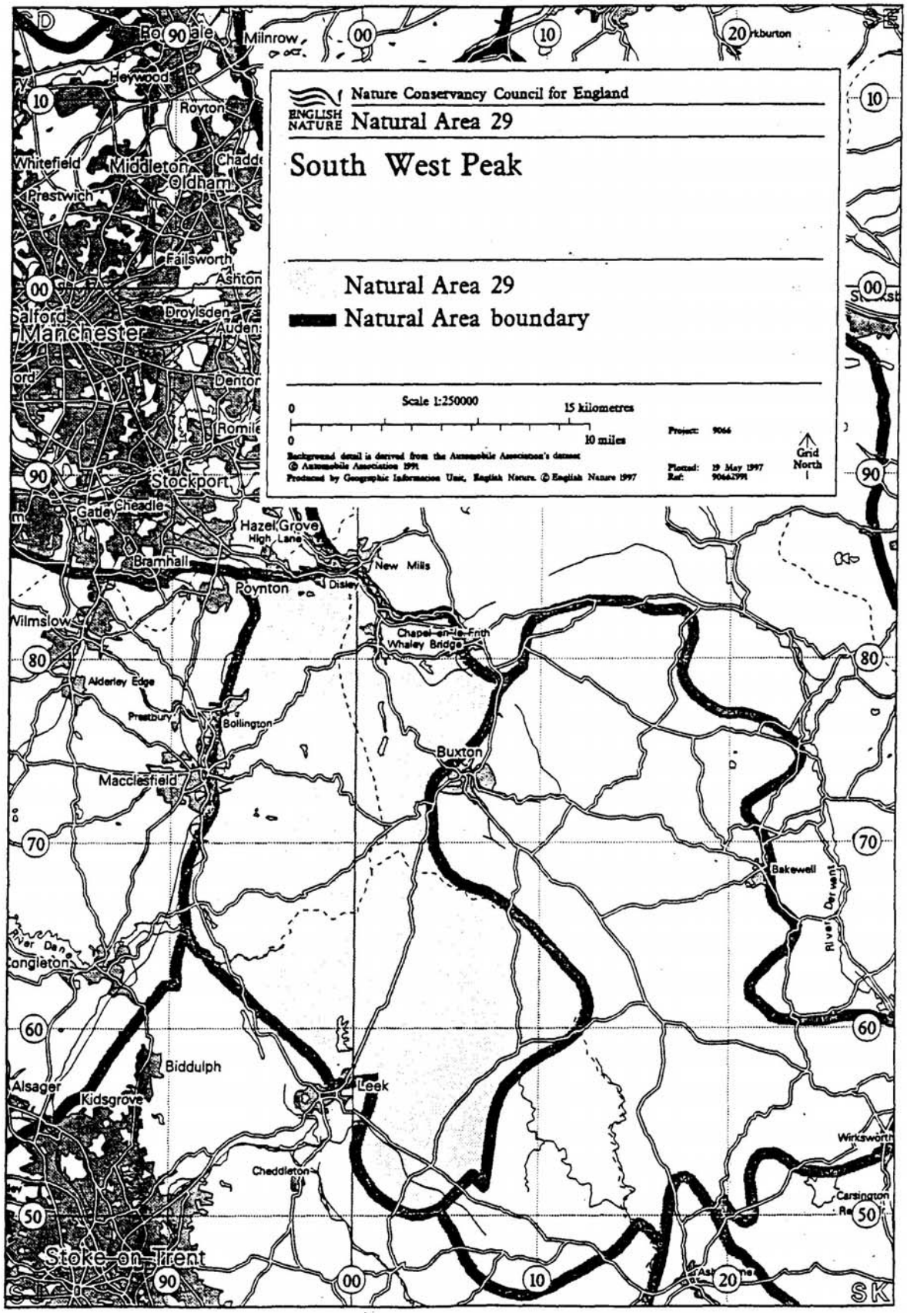
- **Wild, exposed moorland of heath and blanket mire** dominates the character of the northern part of the area. Dwarf shrub heath dominated by heather and bilberry, together with cottongrass blanket mire supports golden plover, curlew, short-eared owl, twite, red grouse and dunlin. These species are part of the internationally important assemblage of breeding moorland birds found across the Peak District Moors.

- **Fast-flowing streams have cut steep-sided cloughs,** where ancient semi-natural woodlands can be found. Some of these woodlands support valuable communities of ferns and lichens, as well as a few pairs of raven that have now started to recolonise the area after a long absence. Dipper, grey wagtail and ring ouzel are found on many of the rivers. Botanically rich plant communities have developed on the waterlogged soil of springs, flushes and valley mires with plants such as the round leaved sundew, bog asphodel, ragged robin and marsh marigold.

- **Small scale enclosed farmsteads** occur in the lower valleys and foothills. There are intricate field enclosure patterns of gritstone walls at higher elevations. However, at lower elevations, fields are enclosed by hedgerows. Much of the land is permanent grassland, mainly pasture, but in places, species-rich hay meadows can still be found. Unimproved acid grassland, sometimes with ridge and furrow systems still visible, supports diverse communities with plants such as mountain pansy, harebell, moonwort and devils-bit scabious. A small relict population of black grouse utilise an intimate mosaic of wet rushy pasture, dry grassland, heathland and willow plantations in the south east of the area. After a long absence, buzzards are now slowly recolonising the area.

Exposures of Millstone Grit provide geomorphological and landscape interest. This dramatic series of gritstone edges has been exposed by a combination of glacial and fluvial action. These exposures provide distinctive landscape features and are a major focus for rock climbing.

Natural Area Boundary



4. A vision for the future

As we approach the end of a century that has seen an unprecedented loss in our fauna and flora how do we see the next century beginning to unfold? Certainly the answer must include retaining as much as possible of the wildlife habitats we have left and keeping them in the best condition we can. But the vision must surely extend beyond that to include a commitment to regain some of the lost ground and develop a countryside richer in wildlife than it is today. This should not be seen as recreating a museum landscape from a previous age, but should be imaginative in taking opportunities to incorporate wildlife into the living countryside of the future.

Our vision is to build on the rich wildlife areas that do remain, using them as a resource to extend into degraded habitats and the wider countryside as opportunities appear. Above all we wish to see habitats developing to complement each other as interlinking ecosystems, including transitions and mosaics between habitats, linking and extending the fragmented pattern of good wildlife sites that remains. Together with the restoration of poor quality habitat this should provide conditions where some of the species we have lost, such as otter and peregrine are able to return. In developing this theme however, we are as concerned to safeguard the species we think of as being common as we are the rarities. We must conserve water voles as much as otters, skylarks as much as peregrines.

Nowhere is the rekindling of a broken landscape more important than on the moorland. We must ease the burden on the hard-pressed fragments that remain and allow them to knit back together, returning the poor quality grassland which encircles and divides them to rich complementary habitats. Some of the recent degradations would be reversed. The blanket mire would become truly wet again, a living bog with mosses flourishing and teal and dunlin around the boggy pools. The heath would be a rich and varied place with patches of tall heather and a mixture of other shrubs forming home to hen harrier and merlin, and with nightjar churring over scattered trees and scrub on the moorland fringe. Woodland of cloughs would extend and join together, with scrubby margins breaking up the moorland edge, the mix with rough grassland and natural flushes allowing black grouse to flourish.

Away from the moors the enclosed land would play its complementary part. The promotion of a wide understanding and appreciation of wildlife needs here can underpin sympathetic management of this landscape to produce a richer flora and fauna. Support for the farming community in retaining the small-scale fabric of the countryside and extensive, mixed farming practices would be fundamental. The in-bye land of the moorland fringe would ring to the call of curlew, redshank and lapwing over the wet pastures and early morning snipe drumming over marshes. On the lower land careful management of hedgerows, field ponds, pastures and cereal fields alike would provide the best chance for rapidly declining species such as brown hare, grey partridge, corn bunting and linnet to remain as part of our landscape into the next century. One day we may be rewarded by the grating call of the corncrake, returning after an absence of thirty years or more.

Valley bottoms have suffered great losses of natural habitat. Here we would see the recreation of some of the most valued habitats under natural water regimes. Areas of alder carr and rich banks of riverside vegetation would provide refuge for otters returning to the clean waters of the area. In the lower valleys naturally flooding meadows would harbour waders and wintering waterfowl.

Awareness, understanding, appreciation and respect for our countryside by residents and visitors alike complete our vision of a sustained future for the wildlife of the South West Peak.

4.1 Objectives

In the main our vision can be realised by paying attention to the component parts of the landscape. The sections of the report that follow look at each habitat in turn and set objectives for them which will lead towards our goal. However, over and above this, it requires some structural changes to the landscape. This may be in changing the balance of habitats, trading poor quality ones for those of more value to wildlife, or in considering the need to create associations of habitats, linked together in complementary groupings rather than seen in isolation. In some cases there is also a need to address species with broad requirements which are not dependent on one habitat alone. These objectives, which realise our vision at a broader level, are listed below. In the sections that follow they are repeated in italics at the head of each list of objectives for the habitats for which they are relevant.

- Reverse the fragmentation of blanket bog, mire, heath and grassland habitats by restoring gaps in their distribution to appropriate semi-natural habitats and recreating natural mosaics and transitions between them.

- Extend semi-natural moorland habitats onto lower-lying semi-improved agricultural land and restore dwarf shrub heath to hill-top grass moor in the west of the area.

- Establish and maintain a favourable conservation status for all moorland and migratory breeding birds through appropriate management supported by monitoring.

- Establish and maintain a diverse assemblage of migratory moorland and moorland fringe breeding birds through appropriate management supported by monitoring.

- Reverse the decline and fragmentation of semi-natural woodland cover encouraging woodland strongholds in cloughs and steeper valley sides to extend and link and to form mosaics with adjacent habitats.

- Extend the distribution of grassland types by creating wet pastures and hay meadows in the flood plains of the larger valleys in the east of the Natural Area and rush pasture on the moorland fringes.

- Restore hydraulic connection between watercourses and flood plain habitats where appropriate and improve the wildlife value of river corridors by creating areas of wet woodland and flood meadows.

- Improve the value of the farmed landscape for a wide range of wildlife by promoting environmentally-friendly agriculture on semi-improved and improved grassland.

- Safeguard and ensure the development of bryophyte and lichen communities by promoting appropriate improvements in air quality across the Natural Area.

- Restore appropriate mosaics of habitats on the moorland fringe to encourage expansion of the population of black grouse.

5. Natural Area Habitats

The South West Peak Natural Area supports a wide range of habitats that are of value to wildlife. Many are important at a national level as reflected by the extensive areas covered by Sites of Special Scientific Interest. Some, such as the blanket bog and dwarf shrub heath are recognised as being of international importance. All play their part in supporting the biodiversity of the Natural Area.

In the following chapter each habitat is considered in turn. The first sections are descriptive. Representation in the Natural Area is considered, followed by sections which describe the wildlife that is characteristically found and those species which are of special interest. The main issues currently affecting each habitat are then given, before listing the nature conservation objectives which will ensure that it retains its maximum wildlife interest into the future. These objectives, although realistic in the long term, are deliberately visionary and unconstrained. They are not intended to include targets or time scales; these will be left to the subsequent process of Local Biodiversity Action Plans.

The habitats we have recognised for the South West Peak Natural Area are listed below. Components of each which are listed as key habitats in the 1995 Biodiversity Steering Group Report or in the EU Habitats Directive are included alongside each type in the table.

Natural Area Habitat	**Biodiversity Key Habitat**	**EU Habitats Directive - Annex 1**
Dwarf shrub heath	Upland heathland	Northern Atlantic wet heaths with *Erica tetralix*; dry heaths (all subtypes)
Blanket bog	Blanket bog	Blanket bog
Woodland and scrub	Upland oakwood; wet woodlands	Old oak woods with *Ilex* and *Blechnum* in the British Isles; residual alluvial forests
Coniferous plantation		
Acid grassland and bracken		
Neutral grassland/wet grassland		
Flushes and mires	Fens	Alkaline fens
Rivers, streams, reservoirs and ponds		
Farmland	Ancient hedgerows; cereal field margins	
Gritstone edges and boulder slopes		

5.1 Blanket bog

Blanket bog covers extensive areas of the highest parts of the northern moors. The thick peat, at least half a metre deep, lies as a mantle over the gentle slopes and is saturated by heavy rainfall. The habitat is internationally important being recognised as a key biodiversity habitat and listed in the EU Habitats Directive as requiring special conservation measures. It has a very limited world distribution: Britain as a whole holds 10-15% of the global resource of blanket mire.

Much of the blanket bog in the South West Peak has been affected to some extent by past drainage, accidental fires, air pollution and injudicious grazing and burning management. True blanket bog is considered here as the remaining areas of vegetation on the deeper, wetter peats. Heather-dominated communities on the drier shallow peats of the lower moors are considered under dwarf shrub heath.

Characteristic species

The blanket mire communities are essentially species-poor from a botanical point of view. Hare's-tail cottongrass is the predominant species, often in a mix with heather, and with wavy hair-grass a frequent associate, but never abundant on the deeper peats. In the shallow peaty pools common cottongrass produces dense patches, spreading out into the adjacent vegetation. Where the blanket peats are slightly drier crowberry becomes a characteristic species often associated with the cottongrasses and in many places mixed with bilberry. These blanket mires are characterised by a dearth of bryophytes; most were unable to tolerate acid rain and air pollution in the area of the last few hundred years.

Special species

The breeding bird community associated with the blanket mire is of international importance holding significant breeding populations of a number of birds listed on Annex 1 of the EU Birds Directive. Roughly 4% of the British breeding population of merlin and 2% of golden plover can be found across the Peak District moors (South West Peak and Dark Peak). Both these species are Red Data Book birds of high conservation priority in England though, happily, merlin numbers have seen an increase in recent years. Dunlin also nest on the blanket bog, preferring the shorter vegetation around pools. They are a high conservation priority species which breed in internationally important numbers in Britain. Teal, also a high priority, Red Data Book species breed in small numbers on the blanket mire, making use of high moorland pools.

There are few plants of significance. Cloudberry, a Natural Area significant species at the southeast limit of its British range, is locally frequent in suitably wet areas. The status of bog rosemary on the blanket mire is now uncertain, though it does occur on wet heath in the Natural Area.

Issues

- Atmospheric pollution over the last few hundred years has depleted the lichen and bryophyte flora and may be having an effect on dwarf shrubs.

- Past drainage has interrupted the hydrological integrity of the blanket peat causing a general drying out of the substrate.

- Inappropriate grazing including the decline in hefted flocks and a lack of shepherding has been partly responsible for degradation of vegetation communities. Grazing patterns on the open moor are difficult to control, but fencing might have undesirable landscape impacts.

- Management of some areas of blanket mire by burning has been inconsistent with the development of a wide-ranging wildlife interest.

- Research on the impact of recreational disturbance on the long-term success of breeding birds remains inconclusive. Restriction of recreational activities is a sensitive issue and there is no co-ordinated management across the moors.

Objectives

- *Reverse the fragmentation of blanket bog, mire, heath and grassland habitats by restoring gaps in their distribution to appropriate semi-natural habitats and recreating natural mosaics and transitions between them.*

- Reverse the degradation of blanket bog through restoration of a high water table.

- Restore conditions that allow for re-establishment of dwarf shrubs and lower plants to the most degraded areas of blanket mire.

- *Establish and maintain a favourable conservation status for all moorland and migratory breeding birds through appropriate management supported by monitoring.*

- *Establish and maintain a diverse assemblage of migratory moorland and moorland fringe breeding birds through appropriate management supported by monitoring.*

- Increase the representation of breeding habitat for dunlin, for example by blocking existing grips to create pools.

- Promote blanket bog management which takes full account of other bird species including golden plover and curlew.

- *Safeguard and ensure the development of bryophyte and lichen communities by promoting appropriate improvements in air quality across the Natural Area.*

5.2 Dwarf shrub heath

Upland heathland is recognised as a habitat of international importance, principally because a large proportion of the European resource is found in the British Isles. Both wet and dry heathlands are important biodiversity habitats and are listed in the EU Habitats Directive as requiring special conservation measures.

In the South West Peak dry heath occupies the lower moor, where the peat is thin, or on the more peaty mineral soils. Parts are managed through a combination of regular burning and low level grazing. Here heather has become the dominant species, sometimes to the exclusion of most others. Elsewhere dry heath tends to occur in blocks as part of a mosaic with other moorland habitats. Wet heath is far more restricted and makes only a small contribution to the Natural Area.

Characteristic species

Parts of the heath that are managed as grouse moor are species-poor, dominated by heather with little else apart from hare's-tail cottongrass and wavy hair-grass. In the richer areas, a mixture of dwarf-shrubs, especially bilberry and heather, is characteristic and lichens and mosses are more frequent and diverse. In some places cowberry provides an interesting addition to the dwarf-shrub component. The areas of wet heath are characterised by cross-leaved heath with occasional cranberry and bog asphodel.

Characteristic fauna include pygmy shrew with the commonest species amongst the birds being meadow pipit and red grouse. The invertebrate fauna is not well known but northern eggar moth and emperor moth are characteristic whilst green hairstreak and the bee *Bombus monticola* occur in areas with abundant bilberry.

Special species

The heather moors of the South West Peak are, together with the adjacent moorland of the Dark Peak Natural Area, of international importance for their bird communities. Three birds listed on Annex 1 of the EU Birds Directive breed in significant numbers. Merlin and golden plover, which also breed on the blanket bog have been described there. Up to 2% of the British population of short-eared owl nest also on the moors although numbers vary year by year depending on the vole population. This is the southernmost population to be found breeding on moors in Britain. Nightjar and hen harrier are also listed on Annex 1, but the South West Peak populations of both species are now uncertain.

In addition the natural area supports significant populations of the Red Data Book species red grouse, curlew and twite. The subspecies of red grouse that occurs in Britain is endemic to the country and numbers have been falling steadily over the last 25 years. The Peak District population of twite is the southernmost in Britain and is geographically distinct and isolated from others.

Two plant species of Natural Area significance occur: bog rosemary which has been found at the top of the Goyt Valley; and cloudberry which occurs at its southernmost location in England on Oliver Hill.

Issues

- Fragmentation and reduction in size of moorland blocks have occurred through agricultural improvement such as liming, mucking, ploughing and heavy grazing.

- The vegetation does not always exhibit the best balance of stand structure and species composition to cater for all wildlife needs. In places the heath has been replaced by poor acid grassland. Although grazing and burning are fundamental in maintaining

the structure of the heath, traditional management has been driven by factors unconnected with nature conservation and this has led to a poor balance of heathland components on parts of the moor. The current ESA mechanisms are important in redressing the balance. In the absence of such schemes future commercial pressures may worsen the situation on privately-owned moors.

- Accidental fires can cause extensive damage to vegetation and the underlying peat and may be followed by erosion.

- Atmospheric pollution over the last few hundred years has depleted the lichen and bryophyte flora and may be having an effect on dwarf shrubs.

- Some areas of wet heath have suffered from drainage, but this is a localised problem.

- Research on the impact of recreational disturbance on long-term success of breeding birds remains inconclusive. Restriction of recreational activities is a sensitive issue and there is no co-ordinated management across the moors.

Objectives

- *Reverse the fragmentation of blanket bog, mire, heath and grassland habitats by restoring gaps in their distribution to appropriate semi-natural habitats and recreating natural mosaics and transitions between them.*

- *Extend semi-natural moorland habitats onto lower-lying semi-improved agricultural land and restore hill-top grass moor in the west of the area.*

- *Safeguard and ensure the development of bryophyte and lichen communities by promoting appropriate improvements in air quality across the Natural Area.*

- Improve condition of dwarf shrub heaths so that they exhibit the full range of species and structural diversity by adapting traditional management techniques.

- *Establish and maintain a favourable conservation status for all moorland and migratory breeding birds through appropriate management supported by monitoring.*

- Increase populations of bird species including merlin, golden plover, twite and black grouse and encourage natural colonisation of hen harrier through appropriate heather management.

- Retain distribution and size of existing short-eared owl population.

- Reduce disturbance to roosting hen harrier and breeding merlin through management of recreational activities.

- Increase populations of nightjar by creating suitable nesting conditions on open ground in association with broad-leaved woodland on the moorland fringes.

5.3 Woodland and scrub

The majority of the semi-natural woodland remaining in the South West Peak comes into the category of upland oakwood. This is both a key biodiversity habitat and is listed in the EU Habitats Directive as a habitat requiring special conservation measures. Woodland cover, however, is restricted, now largely confined to the cloughs and moorland fringes and the steeper valley sides in the south west, such as those along the River Dane.

Small areas of wet woodland, also a biodiversity habitat, occur of varying types. Those dominated by alder characteristically occur on peaty flushed alluvium on the lower valley sides. Elsewhere small stands of other types occur in which either willow or birch are dominant.

Characteristic wildlife

The main tree species found are of course oaks, both sessile and pedunculate oak, but usually with some downy birch, silver birch and rowan. Holly and hazel are found as an understorey in some woods and in others relicts of once more common species such as lime and bird cherry occur. The ground flora consists essentially of wavy hair-grass and bilberry, often with a good range of bryophytes and lichens. Wet woodlands are in the main dominated by alder with opposite-leaved golden-saxifrage characteristic of flushed slopes.

The bird communities of these woodlands characteristically include breeding redstart, tree pipit, wood warbler, lesser spotted woodpecker and pied flycatcher.

Special species

A large number of epiphytic lichens have been recorded and although none are nationally scarce the grouping is significant.

Song thrush, a key biodiversity species suffering more than 50% declines over the last 25 years, is partly dependent on woodland in the Natural Area. A species doing rather better, though still a candidate RDB bird of medium conservation priority, is the buzzard. These have returned to breed in the South West Peak after a long absence following earlier persecution. Their range is gradually extending eastwards from strongholds in Wales.

Issues

- The former extensive cover of woodland has declined over many centuries to a situation where most semi-natural woodland is restricted to moorland cloughs and the steeper valley sides. This fragmentation has led to the ecological isolation of some woods and decline in diversity of trees and shrubs. Semi-natural wet woodland in the valley bottoms has been almost completely removed for agriculture.

- Woodlands are often unfenced and thus open to grazing. This has prevented regeneration and removed the shrub layer leaving a poorly balanced structure.

- Past management has left many woods with a lack of veteran trees and dead wood. This has reduced opportunities for hole-nesting birds, bats and deadwood invertebrates.

- Some woodland suffers from invasion by Rhododendron with consequent loss of ground flora diversity and tree regeneration.

- A history of poor air quality over several centuries has restricted the variety of the more sensitive mosses and lichens.

- Browsing by roe deer can restrict the spread of woodland.

Objectives

- *Reverse the decline and fragmentation of native woodland cover by encouraging woodland strongholds in cloughs and steeper valley sides to extend and link and to form mosaics with adjacent habitats.*

- Restore natural woodland sequences from valley floor to the limit of tree cover in some locations.

- Reinstate natural ecological processes in all semi-natural woodland types to maximise stand type diversity, age structure, species composition and populations of important species, aided in the short-term by appropriate conservation management.

- Allow appropriate scrub transitions to develop on woodland edges to provide habitat for bird and invertebrate species.

- Encourage natural regeneration of gorse and hawthorn scrub in mosaics with grassland on moorland margins and steeper valley sides.

- *Safeguard and ensure the development of bryophyte and lichen communities by promoting appropriate improvements in air quality across the Natural Area.*

- *Restore appropriate mosaics of habitats on the moorland fringe to encourage expansion of the population of black grouse.*

- Eliminate Rhododendron from semi-natural woodland and restrict its spread elsewhere.

5.4 Coniferous plantation

Recent plantations of conifers are found in the north of the Natural Area, some, such as Macclesfield Forest and the plantations of the Goyt Valley, covering extensive areas. They have mostly been planted either on open heath and grassland though in some cases ancient woodlands have been cleared of native trees and replanted with conifers. The latter may still retain a proportion of native broadleaved cover on steeper clough sides and around flushes and watercourses. The main species planted have been Scots pine, Corsican pine and sitka spruce, although larch has been used in some areas.

Apart from the presence of relict patches of semi-natural habitat and a few interesting species, mainly birds, this habitat is of limited importance for nature conservation, reflecting its artificial composition and largely recent origin.

Characteristic wildlife

The dense shade of these plantations restricts the variety of plant life on the forest floor, although ferns such as broad buckler, male and lady ferns and occasional wavy-hair grass or even bilberry survive as a sparse cover. The best opportunities however are in clearings, along forest tracks, streams and flushes and pockets of remnant broadleaved woodland where the vegetation may develop into richer communities equivalent to those that existed prior to planting.

Animal life is similarly restricted although large winter flocks of tits and other small birds frequently forage for insects in the canopy, some, like goldcrest and coal tit staying on to breed. Following felling revegetated areas can support large populations of voles which provide a temporary resource for foraging short-eared owl. The plantations are also home to an expanding population of sparrowhawks, the dense stands of conifers providing ideal secluded conditions for nesting.

Special species

Three species of Red Data Book bird occur within conifer plantations in the Natural Area. The small population of nightjar, which is also a key biodiversity species, is partly associated with recent clearfell and young stands of conifers and the margins of plantations where they adjoin open heath. Goshawk often breed in conifer plantations, preferring to nest in mature forked-topped trees. Recent sightings suggest it is recolonising the Natural Area as part of a general population expansion though it remains a high conservation priority species in England. Black grouse utilise a range of habitats which include areas of conifer plantation, but only in the early stages of planting when they are quite open. The population in the South West Peak has declined to a precarious state in recent years reflecting a national trend.

The plantations also hold a heronry and small populations of other regionally important breeding birds such as siskin and crossbill.

Red squirrel, another key biodiversity species, has been lost from the Natural Area through competition with greys.

Issues

- Conifer planting on former semi-natural habitats, including ancient woodlands has resulted in a decline in overall wildlife value of these areas. Replacement of conifers with broadleaves, or a return to other habitats, is complicated by the presence of some important species associated with the conifers.

- Breeding birds of prey suffer from egg-collecting and disturbance through recreation and forestry operations.

- Manipulation of management regimes can increase suitable habitat for species such as nightjar.

Objectives

- Maximise the contribution of semi-natural habitats such as rides, clearings, wetland and groups of native broadleaved trees within the plantations.
- Promote commercial management of plantations which favours the expansion of populations of species such as black grouse, goshawk, nightjar and crossbill.
- Allow appropriate scrub transitions to develop on woodland edges to provide habitat for bird species.
- Encourage a positive attitude towards the presence of breeding raptors and eliminate egg-collecting and disturbance.
- *Restore appropriate mosaics of habitats on the moorland fringe to encourage expansion of the population of black grouse.*

5.5 Acid grassland and bracken

Some very different types of acid grassland feature in the Natural Area. The most interesting are those dominated by sheep's fescue and common bent usually with a mixture of other species. Areas of short, fine turf in which wavy hair-grass is the main constituent can also be quite diverse with a component of dwarf shrubs. Those dominated by purple moor-grass and the extensive steep slopes where mat-grass is dominant are usually less rich.

The most widespread type in the Natural Area, particularly in the higher enclosed land where some form of base-richness occurs, is the sheep's fescue-common bent grassland. Some of these can be quite species-rich. Wavy hair-grass dominated grasslands occur in a few locations on the fringes of the moorland, particularly on steep slopes. The purple moor-grass grasslands are principally restricted to the higher moorland blocks in areas of impeded drainage where they form mosaics with other moorland habitats. The mat-grass grasslands seem, essentially, to be a product of many decades of heavy sheep grazing. As an unpalatable species high in silica, the plant is avoided by sheep, whilst other species are preferentially taken and therefore are reduced in the sward. These communities are common on the Cheshire Hills and open moorland fringes often in mosaics with heath. Bracken beds are frequent constituents of several of these grassland types, particularly on the dry slopes occupied by wavy hair-grass or mat-grass communities.

Characteristic species

The sheep's fescue-common bent grasslands are the most varied and amongst grasses such as sweet vernal grass and Yorkshire fog are sedges and herbs such as harebell, common cat's ear, pignut, lousewort and occasionally mountain pansy. Some have considerable interest for various types of fungi. Other types of acid grassland tend to be generally species-poor and not of high nature conservation value, except where they provide extensive habitats for some of the important upland bird breeding communities. The purple moor-grass and mat-grass communities tend to be the least diverse though they may include remnant dwarf shrubs such

as bilberry and heather. The wavy hair-grass swards often have an abundance of heath bedstraw and some support patches of common and western gorse.

Special species

Even in cases where they are botanically uninteresting, acid grasslands can support a number of important bird species. The wetter purple moor-grass beds support breeding curlew, and formerly also redshank, both Red Data Book birds of high conservation priority in England. They are also used by nesting snipe and occasionally short-eared owl, both medium priority, candidate RDB birds.

Tussocky grasslands of other types are used by nesting skylark and twite, both high conservation priority species. Whinchat prefer to nest where there is abundant bracken, whilst shorter turf amongst rocky cloughs and valley slopes provide suitable habitat for wheatear and ring ouzel. These last three species are all candidate RDB birds of medium conservation priority in England.

Finally, areas of rough acid grassland are important in supporting the dwindling population of black grouse, as part of a mosaic with other moorland fringe habitats.

Issues

- Areas of species-rich acid grassland continue to lose their value through agricultural activities such as liming, fertilizer application and reseeding.

- Heavy grazing, most often by sheep, is a common problem on many areas of acid grassland. In fact much of what is now acid grassland was formerly dwarf shrub heath. The short even nature of many swards and absence of heathy components severely restricts its wildlife value.

- Neglect and invasion of grassland by bracken is a problem in parts of the Natural Area. Whilst control of the fern is often desirable, in some situations it provides a nesting habitat for some important bird species. Its retention here may be hampered by the negative perception of its value.

Objectives

- *Reverse the fragmentation of blanket bog, mire, heath and grassland habitats by restoring gaps in their distribution to appropriate semi-natural habitats and recreating natural mosaics and transitions between them.*

- Maintain areas of botanically interesting acid grassland.

- Encourage areas of species-poor acid grassland on the moorland fringes to revert to heather moor.

- Where botanical interest is low, improve structure for mammals, birds and invertebrates by reducing the grazing intensity.

- Encourage control of bracken where it is invading species-rich grassland or heath. Where stable mosaics occur, maintain a proportion of bracken as suitable habitat for breeding birds such as whinchat and twite.

- *Restore appropriate mosaics of habitats on the moorland fringe to encourage expansion of the population of black grouse.*

5.6 Neutral and Wet Grasslands

Although grassland is abundant in the Natural Area very little retains the wildlife interest of the former permanent pastures and traditional hay meadows with their rich array of grasses, flowers, insects and birds. Generally those on the more neutral soils provide the richest variety in the South West Peak but even the best examples of these have been affected by agricultural treatments to some extent. Wet or marshy pastures with characteristic tussocky rushes can provide important feeding and breeding grounds for wading birds even when not rich in wild flowers.

Characteristic species

The hay meadows have a range of grasses mixed with ox-eye daisy, knapweed, self-heal, ribwort plantain and very occasionally great burnet or the diminutive adder's tongue fern. Wet or marshy grasslands are often characterised by soft rush and Yorkshire fog. Tall unmanaged grasslands of roadside verges, churchyards and the like can be rich in flowers including meadowsweet, red campion and knapweed.

Insect life can often be abundant, the wide range of food plants catering for a diverse array of different groups. Common butterflies such as meadow brown, or the sooty black moth the chimney sweeper, can breed in huge numbers.

Many common birds use unimproved grassland for feeding, relying on the abundant insects, seeds or soil invertebrates.

Special species

These meadows are important feeding and breeding places for waders: curlew, snipe and lapwing all make use of them. Traditional late cutting dates and an abundance of insect food provide ideal conditions for these species to rear their young. The British population of curlew constitutes a major proportion of the global population. They prefer taller or tussocky grassland providing some cover, whilst lapwing nest on short-cropped grassland with scattered tussocks for cover. Snipe tend to be commoner on the wetter grasslands. Other ground-nesting birds include skylark and grey partridge. They, along with the brown hare, are declining rapidly and are considered key biodiversity species. Barn owls hunt the rough grasslands of the lower limits of the Natural Area and are nationally rare. Whinchat capture insects in the grasses; they are declining in England and are a candidate Red Data Book species. Twite are particularly dependent on seeds of common grassland plants such as dandelion and sorrel.

Two species which used to occur in the meadows of the South West Peak but are now extinct locally are corncrake and redshank. Corncrake, a key biodiversity species of global conservation concern, was last recorded in the Natural Area as recently as the late 1970s.

Issues

- Extensive loss of species-rich grassland through agricultural improvement has occurred from activities including drainage, use of fertilizers and herbicides, cultivation and reseeding. Many of the remaining small fields are now isolated ecologically.

- Populations of ground-nesting birds have declined following changes from hay to silage management and regular ploughing and reseeding. Loss of broadleaved forage plants from grasslands on the moorland fringe has depleted an important resource for twite.

- The availability of suitable rushy/tussocky wet grassland for breeding birds has been limited by drainage and inappropriate grazing patterns. The situation is worsened during dry years which allow mechanical access to these wet pastures.

Objectives

- *Establish and maintain a diverse assemblage of migratory moorland and moorland fringe breeding birds through appropriate management supported by monitoring.*

- *Extend the distribution of grassland types by creating wet pastures and hay meadows in the flood plains of the larger valleys in the east of the Natural Area and rush pasture on the moorland fringes.*

- Encourage retention of species-rich unimproved grassland communities and seek to restore semi-improved neutral grasslands to more species-rich communities by reinstatement of traditional management.

- Maintain and reestablish suitably managed wet pasture to allow the expansion of existing populations of waders**.**

- Create suitable habitat conditions for the reestablishment of breeding populations of redshank.

- Encourage the expansion of hay meadow management to allow the recovery of populations of ground-nesting birds including grey partridge and the reestablishment of corncrake.

- Restore broad-leaved plants to semi-improved in-bye land on the moorland fringe as a food source for birds including twite.

- Avoid damage to ground-nesting birds by modifying grassland management.

- Retain and enhance associated features such as flushes, maintaining appropriate hydrological conditions.

5.7 Flushes and mires

Flushes characteristically occur in the cloughs and along the river valleys of the main moorland areas of the South West Peak. Although generally small-scale features, they have a specialised flora and fauna and make a great contribution to the diversity of the overall moorland habitat. Depending on the nature of the water that feeds them they can be divided into acid and basic flushes. Some of these flushes are part of the group of habitats called fens, now recognised as a key habitat in the Biodiversity Steering Group Report.

Mires usually occur as more extensive features on gently sloping ground on the moorland fringes and higher enclosed land.

Characteristic species

Acidic flushes are the most widespread type, developing below the margins of the blanket peat and across much of the higher in-bye land. They often have a luxuriant carpet of *Sphagnum* moss and often frequent soft rush and small sedges such as star sedge and carnation sedge. These flushes also support cross-leaved heath, cranberry, round-leaved sundew, bog asphodel and, where there are small patches of open water, bog pondweed .

The basic flushes, though more restricted in occurrence, tend to have a greater diversity of plants. They may have small sedges, including tawny sedge and flea sedge, tall herbs such as meadowsweet, marsh valerian and the trailing marsh bedstraw or even plants more familiar of grassland such as quaking-grass and cuckoo flower.

Most mires are characterised by soft rush and common marsh-bedstraw, but are often rich in herbs with ragged-robin, angelica, common valerian, marsh marigold and, in some, southern marsh-orchid. A more restricted type, occasionally found along old ditch lines, has bottle sedge and marsh cinquefoil.

Special species

Reed bunting nest in some of the vegetation associated with the flushes in the South West Peak. They have suffered a huge decline in numbers throughout their range recently and are listed as a key biodiversity species. Black grouse, curlew and lapwing, all declining species of high conservation priority in England, also make use of flushes for nesting as part of a mosaic of habitats. A third species of wader, snipe, is a candidate for inclusion in the Red Data Book also because of a rapid decline in population. Two species which used to occur in the flushes of the South West Peak but are now absent from the area are corncrake and redshank. Corncrake, a key biodiversity species of global conservation concern, was last recorded in the area as recently as the late 1970s.

At least two nationally scarce mosses, *Homalothecium nitens* and *Sphagnum subsecundum* occur in isolated locations in acid flushes within the in-bye land. Nationally scarce invertebrates including species of cranefly are also important.

A range of Natural Area significant plant species occur in both flushes and mires including bogbean, marsh cinquefoil, marsh lousewort and creeping willow.

Issues

- Past drainage of both in-bye and moorland flushes and current management practices on in-bye land such as excessive mechanical rush topping and overgrazing leading to excessive poaching have greatly reduced the extent and interest of flushes.

- Lack of appreciation of the importance of flushes to red grouse has led to poor management of flushes on the grouse moors, including burning and drainage.

- Better management of flushes for invertebrates and some birds, such as reed bunting, is hampered by a lack of knowledge of their requirements.

Objectives

- Maintain the full range and extent of soligenous and valley mires currently important for nationally and locally scarce plants and invertebrates by maintaining water quality and protecting from drainage and trampling damage.

- Increase the interest of poor quality flushes by improving vegetation structure and composition with an emphasis on reversing the decline of regionally important plant species.

- Maximise breeding wader populations by securing appropriate management of mires within their surrounding land use.

- Investigate the status of reed bunting and their use of scrub and open wet habitats. Promote a programme for their expansion.

- Restore flushes and mires which have been damaged by past drainage.

5.8 Rivers, streams, reservoirs and ponds

The upland streams which rise on the moorland edge are fast flowing with stony beds and can show considerable variation in flow rates after heavy rain. In their upper reaches they are of very good water quality but this declines as they reach the lowland valleys mainly through agricultural run off, sewage effluent and, locally, industrial discharges.

Reservoirs occur in some valleys both in the far north and south of the Natural Area as well as more isolated areas on the moorland edges around Buxton. Ponds are a scarce feature. A few can be found on the moorland, or in some valleys in the form of old oxbows and millponds, but field ponds in the in-bye land are generally infrequent; most occur around farms or in gardens. In some locations flooded bell-pits and sections of canal add to the variety of wetland features.

Characteristic species

Very few plants grow in the fast upland streams, although some have well-developed moss and lichen communities. The reservoirs are similarly unproductive apart from limited areas

of marsh around some of the inlet streams. Here various rushes, tufted hair-grass, marsh bedstraw, water mint and lesser spearwort provide an attractive cover often merging into surrounding tall, ungrazed vegetation. The margins of rivers are usually kept free from tall growth of vegetation and to an extent trees by management, usually grazing, of the adjacent land.

Frogs and, to a lesser extent, toads and palmate newts are characteristic of many ponds, whilst the reservoirs and unpolluted watercourses support brown trout. Characteristic birds include common sandpiper, grey wagtail and, locally, dipper. Dragonflies, including the common hawker, are often conspicuous among the wide variety of waterside insects.

Special species

The wetlands of the South West Peak support a number of important animals. Many of the lower reaches of streams and rivers have populations of water vole and one or two ponds have great crested newt colonies. Both these species have declined rapidly throughout England and are listed as key biodiversity species, as is otter which was also part of the wildlife of the rivers and streams until recently. Now considered to be globally threatened, otter seem close to recolonising the area, reaching out from strong populations to the west. Daubenton's bat is a regionally scarce species which spends much of its time feeding over water bodies including rivers and reservoirs.

The rivers and streams hold small numbers of kingfisher, which is listed in the EU Habitats and Species Directive and is of medium conservation priority in England. The populations of common sandpiper that nest alongside both flowing and standing water are part of the southernmost viable population in England and are thus of regional importance. Red breasted merganser which breed on the reservoirs in the Goyt Valley are regionally scarce birds also of significance to the Natural Area.

Upland streams, especially in the Goyt valley, are important for invertebrates. The dance-fly *Clinocera tenella* is nationally rare and the cranefly *Molophilus pusillus* is believed to be endemic to the British Isles.

Two reservoirs have nationally scarce mosses, *Physcomitrium sphaericum* and *Rhyncostegium lusitanicum,* growing in the draw-down zone around the water's edge. Floating water plantain, a key biodiversity species, has been recorded from the Macclesfield canal and several plants of Natural Area significance occur in exposed mud around reservoirs, including mudwort, shoreweed and water purslane.

Issues

- Although some improvement has been made in the last decade, water quality of rivers and streams generally has declined since the beginning of the century due to factors like the use of agricultural fertilizers, farmyard run off and sewage effluent. The effects of this pollution is made worse locally by abstraction which reduces water levels in rivers and streams and seasonal drought.

- Acidification through the influence of acid rain may be having an adverse effect on the wildlife of aquatic habitats

- Agricultural improvement and bankside grazing have led to the loss of complementary bankside habitats**.**

- There has been a gradual disappearance of field ponds as piped water supplies have taken their place. Ponds that do remain are often poorly managed with margins heavily grazed removing important marginal vegetation zones

- There is potential for conflict between recreation (canoeing, sailing, angling etc.) on reservoirs and their optimum use by birds.

Objectives

- *Establish and maintain a diverse assemblage of migratory moorland and moorland fringe breeding birds through appropriate management supported by monitoring.*

- *Restore hydraulic connection between watercourses and flood plain habitats where appropriate and improve the wildlife value of river corridors by creating areas of wet woodland and meadows.*

- Ensure best possible standards of water quality by mitigation of the adverse effects of land uses in the catchment, including both diffuse and direct pollution.

- Encourage development of complementary bankside habitats such as tall herb, scrub, bankside trees and woodland to encourage wide range of species including conditions favourable for water vole and reestablishment of otter populations.

- Maintain ephemeral bryophytes and Natural Area significant vascular plants of reservoir drawdown zones.

- Increase populations of breeding waterfowl and waders on reservoirs through maintenance and development of marginal and complementary bankside habitats.

- Improve the breeding success of sensitive waterside birds on reservoirs and their use by passage and wintering birds by managing recreational use to minimise disturbance.

- Maintain natural dynamics of river channels.

5.9 Farmland

Farmland is the principal habitat in the lower-lying southern and western part of the Natural Area, complementing the high moors to the north and east. Although some of the more valued specific habitats which form part of this landscape have already been considered, for example flower-rich hay meadows, the overall fabric of the farmed landscape is fundamental in supporting a wide range of wildlife, including some important species. It also contains two habitats not considered before which are key biodiversity types: ancient or species-rich hedgerows; and cereal field margins. Hedgerows, an uncommon feature across the higher parts of the Natural Area, have disappeared more slowly from the South West Peak than other parts of the country, but many that remain are poorly managed. Cereal fields are limited to

the western fringes of the Natural Area. Their margins and overwintering stubble are important in supporting a number of farmland birds. Aside from these, it is the general small-scale patchwork of varied habitats, permanent grassland, marshy field corners, ponds, scattered old trees and patches of scrub, that provides for the overall diversity of wildlife.

Special species

Owing to the wide scale and rapid progress of recent changes in farming practices many of the once familiar farmland animals have seen huge population losses over the last 25 years. Concern at the severity of this decline has seen the inclusion of many of these in the list of key biodiversity species. The biggest group is birds. They include species of hedgerow and scrub such as linnet, bullfinch, song thrush and tree sparrow as well as those of more open habitats - skylark, grey partridge and corn bunting. Brown hare, pipistrelle bat and great crested newt all make up part of the farmland fauna, though making use of quite different habitats. All have seen similar declines and are now cause for concern, again listed as key biodiversity species.

Other species of farmland are of national concern. Buzzard, barn owl and polecat, all formerly quite common on the farmland of the South West Peak are now extremely restricted, though buzzard is showing some increase in numbers. Some of the waders familiar on the moors, such as lapwing and curlew, were equally a part of the farmed landscape, but have suffered, along with other ground-nesting birds from changes in grassland management. All these are high conservation priority species in England.

Issues

- The general development of agriculture in the latter part of this century has seen a gradual change in scale of the countryside as size of holdings and fields have increased and mixed farming has been replaced by specialisation. This has lead to the separation of component habitats in place of the intimate mix of hedgerows, meadows, spinneys, ponds and cereal fields.

- Lack of management has led to poor quality of hedges.

- Change from hay to silage management, reseeding and increased intensity of grazing has led to a loss of breeding birds, especially early-nesting waders and a reduction in the species-richness of grasslands.

Objectives

- *Improve the value of the farmed landscape for a wide range of wildlife by promoting environmentally-friendly agriculture on semi-improved and improved grassland.*

- Maintain and extend the intimate mosaic of habitats that make up the farmed landscape.

- Retain and extend blocks of scrub as a balanced component of the landscape.

- Ensure optimal management of hedgerows, farmland trees and associated complementary habitats.

- Increase the populations of farmland birds by encouraging localised cereal farming in place of improved grassland, including retention of overwintering stubble fields and sympathetic management of cereal field margins.

5.10 Gritstone edges and boulder slopes

Gritstone tors and edges together with their boulder strewn slopes and screes are locally important landscape features in the South West Peak. Along with many less openly visible, smaller exposures on clough sides, they provide important habitats for some specialist wildlife.

Special species

The exposed rock is colonised by a lichen community which includes species of regional interest as well those which are nationally scarce. Some commoner species can equally be found on the many gritstone walls which cross the moorland fringe. Interest among higher plants is more limited though the regionally scarce beech fern and oak fern can be found on rock exposures in cloughs which were formerly wooded. The Killarney fern, a key biodiversity species which is listed in the British Red Data Book, occurs at one site. Its ecology is not fully understood but gametophytes have been found in wet rock fissures.

Nesting birds are important too. Raven is one species which is seeing a most welcome return to the South West Peak. Still a scarce bird in England and a candidate Red Data Book species, it has recolonised in small numbers over the last few years. The South West Peak population is entirely dependent on secluded gritstone edges for nesting. It is to be hoped that peregrine will make a similar recovery, as it has done in the Dark Peak. Other important species which nest among the rocks, often where there is plenty of bracken cover are ring ouzel, wheatear and whinchat, all species of medium conservation priority in England.

Issues

- Recreational activities such as rock climbing and boulder scrambling are a potential threat to important lichen communities and reduce the likelihood of birds such as peregrine and raven returning to the area to breed. Control of such activities is a sensitive issue.

- Atmospheric pollution over the last few hundred years has depleted the lichen and bryophyte flora.

- Whilst control of bracken is often desirable in some locations it provides a nesting habitat for important bird species and holds populations of other ferns. Its retention here may be hampered by the negative perception of its value.

Objectives

- *Safeguard and ensure the development of bryophyte and lichen communities by promoting appropriate improvements in air quality across the Natural Area.*
- Reverse the decline of breeding ring ouzel and re-establish viable populations of breeding peregrine and raven by managing recreational use to minimise disturbance.
- Increase populations of nationally scarce saxicolous lichens by minimising recreational disturbance in important areas.
- Investigate the autecology of the Killarney fern. Safeguard potential and known sites for gametophytes and promote management that allows for the development of sporophytes.

5.11 Earth Science

General geological character

The South West Peak Natural Area is dominated by scenery produced through the erosion of the underlying Carboniferous (Namurian, 333-318 million years before present) Millstone Grit Series. The Millstone Grit is part of a great arch-like structure in the rocks, which forms the backbone for the Southern Pennines at this point. The grit consists of a cyclic succession of marine banks in shales, siltstones, and cross-bedded sandstones. These represent river sediments deposited onto both delta slopes during delta migration and delta tops. Intermittent rises in sea level inundated these deposits, and the marine fossils, such as goniatites, which they contain are important for the stratigraphical correlation of these rocks. Following the marine inundation, further delta migration deposited large gritstone masses which now characterise parts of the area in the form of edges and tors.

Although the Natural Area was almost certainly covered by glaciations in the early Quaternary (the last two million years), there is little landform evidence of this episode. The area was not glaciated during the last (Devensian) glaciation but shows evidence of intense periglacial conditions in the form of ice wedge casts, sediment wedge polygons, solifluction and slope deposits. Tors formed on some summits as a result of deep chemical weathering in preglacial and interglacial times.

Today, much of the upland area of the South West Peak is covered by peat deposits up to two metres in depth.

Geological features

Exposures of Namurian Millstone Grit
A range of rock exposures, mainly in stream sections, provide excellent examples of layers of sandstones and shales originally laid down as part of a sequence of sediments deposited on a large delta built southwards by a major river which flowed from uplands to the north some 315 to 300 million years ago. The abundant fossils of marine animals, plant microorganism and non-marine bivalves they contain can be used to date the rocks accurately. This is

important in understanding the various stages of deposition of the parent materials. Some exposures are the best of their type and are considered internationally important.

Millstone Grit edges and tors
Tors and gritstone edges are characteristic of parts of the upland block of the South West Peak, though not as extensive as in the Dark Peak to the north. They reflect the development of the landscape under the harsh conditions at the edge of the ice-sheet during the last period of glaciation. They are important in demonstrating the development of the landscape of the Pennines during part of the Quaternary period.

Geological control of landslips and landslides
Some extensive landslips have developed on the gritstone edges, including the famous Lud's Church. Here all but the upper third of the valley side has slipped forward towards the River Dane leaving deep vertical fissures in the gritstone. Other features were created by the movement including hillside trenches below and Castle Cliff rocks, a tor shaped by the landslip.

Issues

- The natural development of vegetation, particularly scrub, is obscuring some important exposures
- Mineral and fossil collecting if uncontrolled may adversely affect some of the most important sites.
- The recent development of a schedule of Regionally Important Geological Sites has helped focus attention on a wide range of the most important areas.

Objectives

- Maintain all existing rock exposures and landforms that are important in understanding the origin and geological development of the Natural Area.
- Encourage a wide appreciation of the geology of the Natural Area and its links with landform and natural history.

6. Species of Conservation Concern

The South West Peak Natural Area holds populations of many species of plant and animal whose presence is particularly important. For some, their conservation is important at a Natural Area level, as they reflect in some way the special character of the area. Others may be significant at a national level, representing part of a population which is important throughout Britain. Conservation of a few of the species that occur is now considered to be internationally important. Species which fall into these differing categories are identified under the appropriate habitat type in the detailed habitat and species information that follows. Measures to ensure their conservation have largely been addressed by setting objectives which seek to conserve the habitat on which they depend. For a few we have recognised specific objectives tailored to their particular needs.

For one category, that is those species that are globally threatened or in rapid decline, we have paid particular attention to identifying measures that will ensure their well-being into the future. The table opposite is a list of all species which occur in the Natural Area which are globally threatened or rapidly declining. These have been taken from the 'short' and 'middle' lists in *Biodiversity: The UK Steering Group Report (1995)*. Alongside each is the habitat or habitats with which it is associated in the South West Peak and information about its international status and population trends. Information on these last two items is taken from the Biodiversity Report. Objectives for conservation of these species will be found under the relevant habitat in the following sections of the profile.

Following the table is a list of species included in the Biodiversity Report 'long list' for which the Natural Area has some measure of significance. It is not an exhaustive list of every species that might once have turned up eg. vagrant birds, but tries to focus on those that are genuinely part of the make-up of the area. The majority of these species will be catered for by the objectives set for their dependant habitats. At this stage we have not gone on to identify specific requirements for all long list species.

Short List of Globally Threatened / Declining Species in the South West Peak

	International Threat	International Importance	Decline	South West Peak Habitat
Mammals				
Water vole	0	0	1	Wetlands
Brown hare	0	0	1	Farmland; Neutral grassland
Otter	+2?	0	-1	Wetlands
Pipistrelle	1	0	1	Farmland; Woodland and scrub
Birds				
Grey Partridge	1	0	2	Farmland; Neutral grassland
Corncrake	2	0	2	Farmland; Neutral grassland
Skylark	1	0	2	Farmland; Neutral grassland
Song thrush	0	0	2	Woodland and scrub; Farmland
Amphibians				
Great Crested newt	1	0	1	Farmland
Vascular plants				
Floating water plantain	1	1	0	Wetlands
Killarney fern	2	0	0	Gritstone edges and boulder slopes

Middle List of Globally Threatened / Declining Species

	International Threat	International Importance	Decline	South West Peak Habitat
Birds				
Nightjar	1	0	2	Dwarf Shrub Heath; Conifer plantation
Linnet	0	0	2	Farmland; Dwarf Shrub Heath
Bullfinch	0	0	2	Farmland
Corn bunting	0	0	2	Farmland
Reed bunting	0	0	2	Dwarf shrub heath; Flush
Tree sparrow	0	0	2	Farmland
Spotted flycatcher	1	0	2	Farmland

Key

International Threat:

2	Species of global conservation concern
2?	Status uncertain - possibly 2
1	Unfavourable conservation status in Europe
0	Favourable conservation status in Europe

International Importance:

3*	Believed endemic
3*?	Possible endemic
3	5+% of the world population in the UK
2	50-74% of the world in the UK
1	25-49% of the world population in the UK
0	0-24% of the world population in the UK

Decline:	2	50-100% decline in numbers/range in GB in last 25 years
	1	25-49% decline in numbers/range in GB in last 25 years
	0	0-24% increase in numbers/range in GB in last 25 years
	-1	25-49% increase in numbers/range in GB in last 25 years
	-2	50+% increase in numbers/range in GB in last 25 years

Long List of Globally Threatened/Declining Species in the South West Peak

Mammals
Hedgehog
Badger
Stoat
Weasel
Daubenton's bat
Noctule
Brown long-eared bat
Common shrew
Pigmy shrew

Birds
Mallard
Teal
Wigeon
Tufted duck
Red breasted merganser
Goosander
Buzzard
Sparrowhawk
Hen harrier
Hobby
Peregrine
Merlin
Kestrel
Black grouse
Lapwing
Little ringed plover
Golden plover
Snipe
Woodcock
Curlew
Redshank
Dunlin
Barn owl
Tawny owl
Long-eared owl
Short-eared owl
Kingfisher
Green woodpecker
Great spotted woodpecker
L. spotted woodpecker
Swallow
House martin
Sand martin
Great tit
Blue tit
Coal tit
Marsh tit
Willow tit
Nuthatch
Treecreeper
Dipper
Ring ouzel
Wheatear
Stonechat
Whinchat
Redstart
Blackcap
Garden warbler
Whitethroat
Lesser whitethroat
Willow warbler
Chiffchaff
Wood warbler
Goldcrest
Pied flycatcher
Dunnock
Meadow pipit
Tree pipit
Pied wagtail
Grey wagtail
Greenfinch
Goldfinch
Siskin
Twite
Redpoll
Common crossbill
Yellowhammer

Amphibians
Common toad
Common frog
Smooth newt

Reptiles
Grass snake
Slow-worm

Moss

Physcomitrium sphaericum

Vascular plants
Bluebell

7. Detailed habitat and species information

The pages that follow include a summary of information relevant to each **Natural Area Habitat** in the South West Peak Natural Area.

The following notes should aid interpretation of the entries under each category of data:

Biodiversity Key Habitats - habitats listed in the UK Biodiversity Steering Group Report as Key Habitats.

EU Directive Annex 1 Habitat - natural habitat types of community interest whose conservation requires the designation of Special Areas of Conservation (SACs).

National Vegetation Classification Communities - the plant communities which make up the broad Natural Area habitat, classified in terms of the National Vegetation Classification. If an appropriate NVC code is not available, then Phase 1 habitat descriptions are used.

Significant species groups - a species group is significant if an assemblage of these species is an important factor in the value of a habitat.

Significant species
- *National context*; a species is significant if it is rare, scarce, scheduled or listed in the Biodiversity Report or the EU habitats and Species Directive.
- *Natural Area context*; a species is significant if it is rare or scarce in the Natural Area (following the definitions used in County Red Data Books).

Extinct/Declining species - species which are thought to have become extinct or to be declining within the Natural Area. As a rule of thumb, any such species might be considered for a species reintroduction/recovery programme.

Species may be listed under more than one category if they are for example significant but also declining. Those which are dependant on more than one habitat will similarly have duplicate entries under the relevant habitats.

Abbreviations used in the tables are as follows:

BAP	Habitats listed in UK Biodiversity Steering Group Report as Key Habitats.
RDB	Species which qualify for entry in the national Red Data Books.
rdb	Candidate for entry into the national Red Data Book (applies to birds only).
NS	Nationally scarce: recorded in between 11 (16 for plants) and 100 10km squares.
Na	Nationally Notable (Scarce) Category A: Invertebrates recorded in less than 30 10km squares.
Nb	Nationally Notable (Scarce) Category B: Invertebrates recorded in between 31 and 100 10km squares.
Nr	Regionally notable.
bap-s	UK Biodiversity Steering Group Report - Short List.
bap-m	UK Biodiversity Steering Group Report - Middle List.
bap-l	UK Biodiversity Steering Group Report - Long List.

Annx I	Included in Annex I of the EU Habitats and Species Directive.
Annx IIa	Included in Annex IIa of the EU Habitats and Species Directive.
Annx IVa	Included in Annex IVa of the EU Habitats and Species Directive.
Sch 5	Included in Schedule 5 of the Wildlife and Countryside Act 1981.
Sch 8	Included in Schedule 8 of the Wildlife and Countryside Act 1981.
Ext	Thought to have become extinct within the Natural Area.
Dec	Thought to be declining within the Natural Area.

Natural Area Habitat:
Blanket bog

Biodiversity Key Habitats

Blanket bog

EU Directive Annex 1 Habitat

Blanket bog

National Vegetation Classification Communities

M2b	*Sphagnum cuspidatum/recurvum* bog pool community: *Sphagnum recurvum* subcommunity
M3	*Eriophorum angustifolium* bog pool community
M19a	*Calluna vulgaris-Eriophorum vaginatum* blanket mire: *Erica tetralix* subcommunity
M19b	*Calluna vulgaris-Eriophorum vaginatum* blanket mire: *Empetrum nigrum* ssp. *nigrum* subcommunity
M20a	*Eriophorum vaginatum* blanket & raised mire: Species-poor subcommunity
M20b	*Eriophorum vaginatum* blanket & raised mire: *Calluna vulgaris-Cladonia* spp. subcommunity

Significant Species Groups

birds

Significant Species in a national context

Birds

Pluvialis apricaria	golden plover	Annx 1, RDB	bap-l
Numenius arquata	curlew	RDB	bap-l
Lagopus lagopus	red grouse	RDB	
Calidris alpina	dunlin	RDB	bap-l
Anas crecca	teal	RDB	bap-l
Asio flammaeus	short-eared owl	rdb, Annx 1, Sch 1	bap-l

Significant Species in a Natural Area context

Plants

Andromeda polifolia bog rosemary

Extinct/declining species

Birds			
Pluvialis apricaria	golden plover	RDB, dec ?	bap-l
Numenius arquata	curlew	RDB, dec ?	bap-l
Calidris alpina	dunlin	RDB, dec ?	bap-l

Natural Area Habitat:
Dwarf shrub heath

Biodiversity Key Habitats

Upland heathland

EU Directive Annex 1 Habitat

Northern Atlantic wet heaths with *Erica tetralix*; dry heaths (all subtypes)

National Vegetation Classification Communities

H8 *Calluna vulgaris-Ulex gallii* heath
H9a *Calluna vulgaris-Deschampsia flexuosa* heath: *Hypnum cupressiforme* subcommunity
H9b *Calluna vulgaris-Deschampsia flexuosa* heath: *Vaccinium myrtillus-Cladonia* spp. subcommunity
H9c *Calluna vulgaris-Deschampsia flexuosa* heath: Species-poor subcommunity
H12b *Calluna vulgaris-Vaccinium myrtillus* heath: *Vaccinium vitis-idaea-Cladonia impexa* subcommunity
H12c *Calluna vulgaris-Vaccinium myrtillus* heath: *Galium saxatile-Festuca ovina* subcommunity
M15a *Scirpus cespitosus-Erica tetralix* wet heath: *Carex panicea* subcommunity
M15b *Scirpus cespitosus-Erica tetralix* wet heath: Typical subcommunity
M15d *Scirpus cespitosus-Erica tetralix* wet heath: *Vaccinium myrtillus* subcommunity

Significant Species Groups

birds
lichens

Significant Species in a national context

Birds

Acanthis flavirostris	twite	RDB	
Falco columbarius	merlin	RDB, Annx 1, Sch 1	bap-l
Lagopus lagopus	red grouse	RDB	
Numenius arquata	curlew	RDB	bap-l
Asio flammeus	short-eared owl	rdb, Annx 1, Sch 1	bap-l
Caprimulgus europaeus	nightjar	RDB, Annx 1	bap-m
Tetrao tetrix	black grouse	RDB	bap-l
Circus cyaneus	hen harrier	RDB, Annx 1, Sch 1	bap-l
Carduelis cannabina	linnet	rdb	bap-m
Emberiza schoeniculus	reed bunting		bap-m

Significant Species in a Natural Area context

Plants

Andromeda polifolia	bog rosemary

Extinct/declining species

Natural Area Habitat: Dwarf shrub heath			
Plants			
Drosera anglica	great sundew	ext	
Extinct/declining species			
Birds			
Corvus corax	raven	rdb	
Numenius arquata	curlew	RDB, dec?	bap-l
Caprimulgus europaeus	nightjar	RDB	bap-m
Tetrao tetrix	black grouse	RDB, dec?	bap-l
Reptiles			
Vipera berus	adder	ext	bap-l

Natural Area Habitat:
Woodland and scrub

Biodiversity Key Habitats

Upland oakwood
Wet woodlands

EU Directive Annex 1 Habitat

Old oak woods with *Ilex* and *Blechnum* in the British Isles; residual alluvial forests

National Vegetation Classification Communities

W4c	*Betula pubescens-Molinia caerulea* woodland: *Sphagnum* spp. subcommunity
W7b	*Alnus glutinosa-Fraxinus excelsior-Lysimachia nemorum* woodland: Carex *remota-Cirsium palustre* subcommunity
W7c	*Alnus glutinosa-Fraxinus excelsior-Lysimachia nemorum* woodland: *Deschampsia cespitosa* subcommunity
W11a	*Quercus petraea-Betula pubescens-Oxalis acetosella* woodland: *Dryopteris dilatata* subcommunity
W11b	*Quercus petraea-Betula pubescens-Oxalis acetosella* woodland: *Blechnum spicant* subcommunity
W17b	*Quercus petraea-Betula pubescens-Dicranum majus* woodland: Typical subcommunity
U19	*Thelypteris limbosperma-Blechnum spicant* community

Significant Species Groups

epiphytic lichens

Significant Species in a national context

Birds

Turdus philomelos	song thrush	bap-s

Mammals

Pipistrellus pipistrellus	pipistrelle bat	Sch 5	bap-s

Invertebrates

Strymonidia w-album	white letter hairstreak	Nb
Swammerdamia compunctella	small ermine moth	Nb
Beris fuscipes	a soldier fly	Nb

Significant Species in a Natural Area context

Plants

Salix pentandra	baywillow

Birds

Ficedula hypoleucos	pied flycatcher		bap-l
Phoenicurus phoenicurus	redstart	rdb	bap-l
Dendrocopos minor	lesser spotted woodpecker		bap-l

Natural Area Habitat: Woodland and scrub			
Mammals			
Nyctalus leisleri	Leisler's bat		
Extinct/declining species			
Birds			
Buteo buteo	buzzard	rdb	bap-l
Corvus corax	raven	rdb	

Natural Area Habitat: Coniferous Plantation			
Biodiversity Key Habitats			
EU Directive Annex 1 Habitat			
National Vegetation Classification Communities			
Significant Species Groups birds			
Significant Species in a national context			
Birds			
Accipiter gentilis	goshawk	Sch 1, RDB	bap-l
Loxia curvirostra	crossbill	Sch 1	bap-l
Caprimulgus europaeus	nightjar	Annex 1, RDB	bap-m
Extinct/declining species			
Mammals			
Martes martes	pine marten	ext	bap-l
Sciurus vulgaris	red squirrel	ext	bap-s

Natural Area Habitat:
Acid Grassland and Bracken

Biodiversity Key Habitats
-

EU Directive Annex 1 Habitat
-

National Vegetation Classification Communities

U2a *Deschampsia flexuosa* grassland: *Festuca ovina-Agrostis capillaris* subcommunity
U2b *Deschampsia flexuosa* grassland: *Vaccinium myrtillus* subcommunity
U4a *Festuca ovina-Agrostis capillaris-Galium saxatile* grassland: Typical subcommunity
U4b *Festuca ovina-Agrostis capillaris-Galium saxatile* grassland: *Holcus lanatus-Trifolium repens* subcommunity
U5a *Nardus stricta-Galium saxatile* grassland: Species-poor subcommunity
U5b *Nardus stricta-Galium saxatile* grassland: *Agrostis canina-Polytrichum* commune subcommunity
U5c *Nardus stricta-Galium saxatile* grassland: *Carex panicea-Viola riviniana* subcommunity
U6a *Juncus squarrosus-Festuca ovina* grassland: *Sphagnum* spp. subcommunity
U6c *Juncus squarrosus-Festuca ovina* grassland: *Vaccinium myrtillus* subcommunity
U20a *Pteridium aquilinum-Galium saxatile* community: *Anthoxanthum odoratum* subcommunity
U20b *Pteridium aquilinum-Galium saxatile* community: *Vaccinium myrtillus-Dicranum scoparium* subcommunity
U20c *Pteridium aquilinum-Galium saxatile* community: Species-poor subcommunity

Significant Species Groups

birds

Significant Species in a national context

Birds

Acanthis flavirostris	twite	RDB	bap-l
Numenius arquata	curlew	RDB	bap-l
Oenanthe oenanthe	wheatear	rdb	bap-l
Saxicola rubetra	whinchat	rdb	bap-l
Turdus torquata	ring ouzel	rdb	bap-l
Tetrao tetrix	black grouse	RDB	bap-l

Extinct/declining species

Plants

Pseudorchis albida	small-white orchid	ext?	

Birds

Tetrao tetrix	black grouse	RDB, dec?	bap-l
Numenius arquata	curlew	RDB, dec?	bap-l

Natural Area Habitat: Neutral and wet grasslands			
Biodiversity Key Habitats			
EU Directive Annex 1 Habitat			
National Vegetation Classification Communities MG5 *Cynosurus cristatus-Centaurea nigra* grassland MG10 *Holcus lanatus-Juncus effusus* rush-pasture			
Significant Species Groups birds			
Significant Species in a national context **Birds**			
Alauda arvensis	skylark		bap-s
Perdix perdix	grey partridge	RDB	bap-s
Emberiza schoeniculus	reed bunting		bap-m
Acanthis flavirostis	twite	RDB	bap-l
Numenius arquata	curlew	RDB	bap-l
Vanellus vanellus	lapwing	rdb	bap-l
Gallinago gallinago	snipe	rdb	bap-l
Tetrao tetrix	black grouse	RDB	bap-l
Mammals			
Lepus europaeus	brown hare		BAP
Extinct/declining species **Birds**			
Tringa totanus	redshank	RDB, ext	bap-l
Crex crex	corncrake	RDB, ext	bap-s

Natural Area Habitat:
Flushes and mires

Biodiversity Key Habitats

Fens

EU Directive Annex 1 Habitat

Alkaline Fens

National Vegetation Classification Communities

M4	*Carex rostrata-Sphagnum recurvum* mire
M6a	*Carex echinata-Sphagnum recurvum/auriculatum* mire: *Carex echinata* subcommunity
M6b	*Carex echinata-Sphagnum recurvum/auriculatum* mire: *Carex nigra-Nardus stricta* subcom
M6c	*Carex echinata-Sphagnum recurvum/auriculatum* mire: *Juncus effusus* subcommunity
M6d	*Carex echinata-Sphagnum recurvum/auriculatum* mire: *Juncus acutiflorus* subcommunity
M9	*Carex rostrata-Calliergon cuspidatum/giganteum* mire
M10a	*Carex dioica-Pinguicula vulgaris* mire: *Carex demissa-Juncus bulbosus/kochii* subcommunity
M23a	*Juncus effusus/acutiflorus-Galium palustre* rush-pasture: *Juncus acutiflorus* subcommunity
M23b	*Juncus effusus/acutiflorus-Galium palustre* rush-pasture: *Juncus effusus* subcommunity
M21	*Narthecium ossifragum-Sphagnum papillosum* valley mire
M26b	*Molinia caerulea-Crepis paludosa* mire: *Festuca rubra* subcommunity
S27	*Carex rostrata-Potentilla palustris* tall-herb fen

Significant Species Groups

vascular plants
birds

Significant Species in a national context

Plants

Homalothecium nitens	moss	NS
Sphagnum subsecundum	moss	NS

Birds

Numenius arquata	curlew	RDB	bap-l
Gallinago gallinago	snipe	rdb	bap-l
Vanellus vanellus	lapwing	rdb	bap-l
Tetrao tetrix	black grouse	RDB	bap-l
Emberiza schoeniculus	reed bunting		bap-m

Natural Area Habitat: Flushes and mires			
Significant Species in a Natural Area context			
Plants			
Carex hostiana	tawny sedge		
Eriophorum latifolium	broadleaved cottongrass		
Menyanthes trifoliata	bogbean		
Pedicularis palustris	marsh lousewort		
Potentilla palustris	marsh cinquefoil		
Salix repens	creeping willow		
Drepanocladus revolvens	moss		
Extinct/declining species			
Birds			
Tringa totanus	redshank	RDB, ext	bap-l
Tetrao tetrix	black grouse	RDB, dec?	bap-l
Crex crex	corncrake	RDB, ext	bap-s

Natural Area Habitat:
Rivers, streams, reservoirs and ponds

Biodiversity Key Habitats

EU Directive Annex 1 Habitat

Habitats

Open water: mesotrophic running water
Open water: mesotrophic standing water
Reservoir drawdown zones

Significant Species Groups

birds
invertebrates

Significant Species in a national context

Plants				
Luronium natans	floating water-plantain		NS	bap-s
Rhynchostegium lusitanicum	moss	NS	bap-l	
Physcomitrium sphaericum	moss	NS	bap-l	
Birds				
Cinclus cinclus	dipper	rdb	bap-l	
Charadrius dubius	little ringed plover		bap-l	
Mammals				
Arvicola terrestris	water vole		bap-s	
Pipistrellus pipistrellus	pipistrelle bat	Sch 5	bap-s	
Invertebrates				
Neoascia obliqua	hoverfly	Nb		
Tetanocera punctifrons	snail-killing fly	Nb		
Clinocera tenella	dancefly	RDB3		
Molophilus pusillus	cranefly	RDB5	bap-l	

Significant Species in a Natural Area context

Plants	
Limosella aquatica	mudwort
Littorella uniflora	shoreweed
Lythrum portula	water-purslane

Significant Species in a Natural Area context

Birds	
Mergus serrator	red-breasted merganser

Tringa hypoleucos	common sandpiper		
Mammals			
Myotis daubentoni	Daubenton's bat		
Extinct/declining species			
Animals			
Lutra lutra	European otter	ext	bap-s
Austropotamobius pallipes	white-clawed crayfish	ext?	BAP

Natural Area Habitat: Farmland				
Biodiversity Key Habitats Ancient/species-rich hedgerow Cereal field margin				
EU Directive Annex 1 Habitat				
Habitats Scattered scrub Semi-improved acid grassland Semi-improved neutral grassland Tall herb and fern Arable Ephemeral/short perennial Hedge and tree Wall				
Significant Species Groups birds				
Significant Species in a national context				
Birds				
Alauda arvensis	skylark		bap-s	
Turdus philomelos	song thrush		bap-s	
Perdix perdix	grey partridge	RDB	bap-s	
Muscicapa striata	spotted flycatcher	rdb	bap-m	
Passer montanus	tree sparrow	rdb	bap-m	
Carduelius cannabina	linnet	rdb	bap-m	
Miliaria calandra	corn bunting	rdb	bap-m	
Pyrrhula pyrrhula	bullfinch		bap-m	
Tyto alba	barn owl	RDB	bap-l	
Hirundo rustica	swallow	rdb	bap-l	
Phoenicurus phoenicurus	redstart	rdb	bap-l	
Sylvia communis	whitethroat	rdb	bap-l	
Sylvia curruca	lesser whitethroat		bap-l	
Mammals				
Lepus europaeus	brown hare			bap-s
Pipistrellus pipistrellus	pipistrelle	Sch 5		bap-s
Amphibian				
Cristatus vulgaris	great crested newt	Sch 5	bap-s	
Extinct/declining species				
Birds				
Crex crex	corncrake	RDB, ext.	bap-s	

Natural Area Habitat:
Gritstone edges and boulder slopes

Biodiversity Key Habitats

EU Directive Annex 1 Habitat

National Vegetation Classification Communities

Significant Species Groups

Birds
Saxicolous lichens

Significant Species

Nationally Significant

Ferns

Trichomanes speciosum	Killarney fern		BAP	

Significant Species in a national context

Birds

Oenanthe oenanthe	wheatear		rdb	bap-l
Saxicola rubetra	whinchat		rdb	bap-l
Corvus corax	raven		rdb	
Turdus torquata	ring ouzel	rdb	bap-l	
Oenanthe oenanthe	wheatear		rdb	bap-l

Significant Species in a Natural Area context

Lichens

Acarospora veronensis	lichen		
Umbilicaria deusta	lichen		
Lecidea plana	lichen		
Huila hydrophila	lichen		
Schaereria cinereorufa	lichen		
Fuscidea praeruptorum	lichen		
Lecanora subaurea	lichen		
Cladonia fragiltissima	lichen	bap-l	
Trapeliopsis glaucolepidea	lichen		
Lepraria zonata	lichen		

Vascular Plants

Sedum anglicum	English stonecrop
Umbilicus rupestris	Navelwort

Extinct/declining species

Birds

Buteo buteo	buzzard	Ext	
Turdus torquata	ring ouzel	Dec	
Falco peregrinus	peregrine	RDB, Sch 1, Annx 1	bap-l

8. Glossary

Biodiversity
The variety of lifeforms we see around us. It encompasses the whole range of plant and animal life: mammals, birds, reptiles, amphibians, fish, insects and other invertebrates, plants, fungi and micro-organisms.

British Red Data Book
Plants and animals which are nationally rare (see definition below) are listed in the series of British Red Data Books.

EU Birds Directive
Birds of international importance are listed in this European Union Directive. Under the Directive they are protected by member states.

EU Habitats and Species Directive
Habitats and species of international importance are listed in this European Union Directive. Under the Directive they are protected by member states

Environmentally Sensitive Area (ESA)
The MAFF Environmentally Sensitive Area Scheme was introduced in 1987 to help safeguard areas of the countryside where landscape, wildlife or historic interest is of national importance. It operates through a system of incentives to landowners who are willing to manage their land to maintain the specific interest.

Favourable Conservation Status
Meeting a series of defined criteria designed to ensure optimal conservation of the species or habitat into the foreseeable future.

Key biodiversity habitat
One of the 38 key habitats listed in Table 1 of *Biodiversity: The UK Steering Group Report (1995)*.

Key biodiversity species
Species listed on the 'short/middle' list of *Biodiversity: The UK Steering Group Report (1995)*.

Semi-natural vegetation
Vegetation which, although modified by man, is still of significant nature conservation interest because it is composed of native species and is similar in structure to natural types.

Special Areas of Conservation (SAC)
Sites internationally important for their habitats and species (other than birds) and designated by the UK Government under the EU Habitats and Species Directive (see above).

Special Protection Area (SPA)
Sites internationally important for their bird populations and designated by the UK Government under the EU Birds Directive (see above).

Site of Special Scientific Interest (SSSI)
A series of statutory sites recognised as being of national importance for their wildlife or geological interest, where features are at their best and/or most concentrated. SSSIs are designated by English Nature and are protected under the Wildlife and Countryside Act 1981 (as amended).

Wildlife and Countryside Act 1981
The principle mechanism for the legislative protection of wildlife in Great Britain. Part I covers species protection. Part II covers the designation of protected areas.