Derbyshire Wildlife Trust

DERBYSHIRE LOCAL WILDLIFE SITES HANDBOOK

Volume 2

Guidelines for the Selection of Local Wildlife Sites

September 2003 (Revised 2026)



Derbyshire Wildlife Trust

Designed and produced by Derbyshire Wildlife Trust.
Cover photo: Morning light on Baslow Edge – Chris Maguire.

Copies of this document are available as a download from:
The Derbyshire Wildlife Trust website http://www.derbyshirewildlifetrust.org.uk/
https://www.derbyshirewildlifetrust.org.uk/projects/derbyshire-biological-records-centre

Derbyshire Wildlife Trust

Contents

Part A: Introduction 5

1. Introduction 5
2. Acknowledgements 5
3. Why Revise the Guidelines? 6
4. Aim of the Guidelines 6
5. The Format of the Guidelines 7
6. Principles behind the Guidelines 7
7. Application of the Local Wildlife Site Guidelines 12
8. Determining Local Wildlife Site Boundaries 12
9. National Character Areas 13
10. The Derby area 15

Part B: Guidelines for Site Selection 16

11.0 Section 1: Habitat Guidelines 16

11.1 Woodland 16

11.2 Wood Pasture, Parkland and Veteran Trees 25

11.3 Hedgerows and Scrub 28

11.4 Traditional Orchards 30

11.5 Grassland 32

11.6 Lead Rakes and Lead Spoil Heaps 44

11.7 Heathland, Blanket Bogs & Mires 45

11.8 Swamps, Reedbeds and Tall-herb Fens 49

11.9 Freshwater Habitats 54

11.10 Mixed Habitat and Structural Mosaics 68

11.11 Arable Plant Communities 72

12.0 Section 2: Species Guidelines 75

12.1 Lichen, Fungi and Lower Plants 76

12.1.1 Lichen Selection Guidelines 76
12.1.2 Fungi 78
12.1.3 Mosses and Liverworts 81
12.4.4 Stoneworts and other Algae 95
12.2 Flowering Plants, Ferns and Allies 96
12.3 Invertebrates 105
12.4 Amphibians 112
12.5 Reptiles 115
12.6 Fish 116
12.7 Birds 117
12.8 Mammals 123
13 References 126
14 Appendices 130
14.1 Appendix 1: Consultees 130
14.2 Appendix 2: Other Counties Local Wildlife Site Selection Criteria reviewed/consulted 132

Part A: Introduction

1. Introduction

This document provides guidance on the selection of Local Wildlife Sites in Derbyshire outside of the Peak District National Park. It sets out the detailed guidelines under which a site can be selected, and should be read in conjunction with Part 1 of the Derbyshire Local Wildlife Sites Handbook: Policies and Procedures.

These guidelines were first adopted by the Derbyshire Local Wildlife Sites Panel in 2003. The panel comprised Derbyshire Wildlife Trust, Natural England and Derbyshire County Council. Prior to adoption, an extensive consultation was carried out with local and national specialists, conservation organisations and each of the local authorities.

The distribution and status of habitats and species in Derbyshire is dynamic and changes over time. The state of our knowledge is also constantly improving. During the period 2010 - 2011 the guidelines were revised to take account of these changes. As with the original document, a similar extensive consultation has been carried out to inform the revision.

These revised guidelines are based on the best information available up until the end of 2026. We will continue to regularly review the guidelines to reflect future changes.

2. Acknowledgements

The 2003 version of these guidelines were developed by Derbyshire Wildlife Trust's Local Wildlife Sites Officers, Kieron Huston and Debbie Court, from an original draft by Pat Brassley. The members of the Derbyshire Local Wildlife Sites Panel, who contributed to the production of the guidelines, were:

Dan Abrahams (and previously Roger Catchpole) – Natural England
Jo Brown – Derbyshire Wildlife Trust
Annie Cooper – Derbyshire County Council
Nick Moyes – Derby Biological Record Centre

Many people provided advice and/or information to aid the production of the guidelines, and the panel is very grateful for the contributions of all of these people. A full list of consultees is included in Appendix 1.

In addition, the Trust reviewed the selection guidelines for other counties in England and were guided and informed by these documents. We owe a special debt of gratitude to the Selection Guidelines for Lancashire and North Yorkshire. In many instances their guidelines for habitats and species provided ideal templates which we were able to borrow and adapt to suit our own needs in Derbyshire. A full list is provided in Appendix 2.

This current revision of the guidelines has been undertaken by Derbyshire Wildlife Trust's staff, in addition, several local experts have been consulted for their specific knowledge of certain groups whilst working up the revision prior to wider consultation on the draft revision. Their contribution has been invaluable and for which the Trust is very grateful. Local Wildlife Site Panel Members who have reviewed and contributed to this current revision include:

Dan Abrahams (Natural England)
Debbie Alston (Derbyshire Biodiversity Officer)
Jo Brown (Derbyshire Wildlife Trust)
Ed Green (Derbyshire Wildlife Trust)
Beverley Rhodes (Derby City Council)
David Slinger (Derby City Council)
Chris Monk (Derbyshire Amphibian and Reptile Group)
Nick Moyes (Derbyshire Biodiversity Officer)
Dr Alan Willmot (County Plant Recorder)

Illustrations appear courtesy of Natural England.

3. Why Revise the Guidelines?

The 2003 guidelines replaced those set out in the Sites of Importance for Nature Conservation in Derbyshire Handbook (Derbyshire County Council, 1996). The need for periodic revisions to the guidelines for the selection of Local Wildlife Sites is necessary due to a combination of developments that include the following: -

- changes in knowledge and understanding of species, communities and habitats both nationally, regionally and locally;
- revisions of national and local Biodiversity Action Plans, identifying priority habitats and species for conservation;
- updates in Government guidance regarding Local Sites, specifically the publication of revised guidelines for the identification, selection and management of Local Sites (DEFRA, 2006)

4. Aim of the Guidelines

The aim of this document is to enable the identification of those sites that, together with statutory sites, make the most significant contribution to the biological diversity of Derbyshire, and can therefore be of county importance.

The network of Local Wildlife Sites should specifically:

- include the best examples of the full range of habitat types of nature conservation value in Derbyshire outside statutory sites;

- include habitats or species that are national, regional or county conservation priorities due to rarity, decline or degree of threat;
- reflect the geographical distribution of habitats and species in Derbyshire, by including notable isolated pockets of the more localised habitats or species, as well as sites across the full range of more widespread ones.

5. The Format of the Guidelines

The guidelines are divided into two sections. Section one provides the guidelines for the selection of Local Wildlife Sites on a habitat basis, while section two provides species-based guidelines.

For each type of habitat in section one there is a description of its status in an international, national and Derbyshire context. For the species groups in section two this is often not possible because of the numbers involved, but a brief overview for the smaller groups (e.g. amphibians) is provided.

This is followed by detailed guidelines on the selection of sites, with instructions on how these should be applied. For habitats, the relevant UK Priority Habitat Action Plan(s) (HAPS) are listed. Recent revisions of the Peak District Biodiversity Action Plan [PDBAP] (Peak District Biodiversity Partnership, 2011) and Lowland Derbyshire Action Plan [LDBAP] (Lowland Derbyshire Biodiversity Partnership, 2011) have seen a change in structure to more generic actions, broad targets and actions rather than specific Habitat or Species Action Plans. The 2003 version of these selection guidelines listed appropriate Local BAP HAPs in addition to the UK BAP HAPs. It has not been possible to follow this theme in the revised guidelines due to the changes in the structure of the LBAPS. However, the UK BAP provides the framework against which all LBAPS work and as such the LBAPS still act as the key focus to guide achievement of objectives and targets for achieving the overall aims of the UK BAP.

6. Principles behind the Guidelines

The Wildlife Sites Handbook advises that the criteria for the selection of Wildlife Sites on habitat grounds should consider the following primary elements:

- rarity
- size
- naturalness/typicalness
- diversity

and that secondary considerations could include:

- position in an ecological unit
- potential value
- fragility
- educational/social value

The following section describes the way these elements have been dealt within the guidelines.

6.1 Rarity

The Local Wildlife Sites selection guidelines for species are often based on the rarity of the plant or animal concerned. Rarity may be defined at different levels – a species common in Derbyshire may be rare in the rest of the UK – and we must consider our national and international responsibilities. In addition, there are species that are known to be in decline at an international, national or local scale and site designation may be an effective way of trying to halt and reverse these declines.

For the purposes of these guidelines the following definitions and sources apply:

- Internationally rare species. These species are identified in European Community Directives (e.g. The Habitats and Birds Directives).

- Nationally threatened, rare or scarce species. These species are identified in the UK Red Data Books. The term Nationally Threatened is generally used to refer to the three categories (critically endangered, endangered and vulnerable) as determined by the IUCN. Nationally Rare species occur in less than 16 10km grid squares while Nationally Scarce species occur 16 – 100 10km grid squares in the UK.

- Locally rare species in Derbyshire. These are identified in the County Red Data Book and subsequent supplements. Generally, rare species are those that are recorded from 3 or fewer localities or sites in the vice-county of Derbyshire since 1969.

- Locally Scarce or Locally Declining species in Derbyshire. These species are known to occur in between 4 – 10 localities or sites since 1969 or thought to be exhibiting serious local decline (for plants significant decline is based upon comparison of two adjacent 21 year periods: 1965 – 1986 versus 1987 – 2008 (Moyes. N.J. & Willmot, A. 2009). For fungi, lower plants and animal species a methodology for significant decline has not been produced and we rely on expert opinion and comparative data to guide us.

- UK Biodiversity Action Plan Species Priority List - as amended 2008. (JNCC, 2012)

- Birds of Conservation Concern 3 Red List - as amended. (Eaton et al,

Care must be taken when considering the rarity of some species, particularly those such as invertebrates or lower plants which are difficult to identify. Apparent rarity can be a feature of the coverage of survey rather than a true reflection of the occurrence of the species. This factor has been taken into

account in the production of these guidelines as far as possible, but a degree of discretion may be required in their application to certain species.

Habitat rarity has largely been addressed through the identification of individual habitat types which are considered to be threatened or of value either nationally or in the region, for example by reference to the UK BAP 'Priority Habitats' list, British Plant Communities (Rodwell 1991 et seq) and the Peak District and Lowland Derbyshire LBAPs.

6.2 Size

It is generally recognised that all other things being equal larger sites are preferable to smaller sites. However, for many habitats we have now reached a point where even the smallest of sites can often support something of value. Consideration needs to be given therefore to the abundance or scarcity of that habitat and species present within the locality, County, region or the UK.

Furthermore, some very small sites may support populations of very rare species, whilst others may be of value to very large numbers of common species simply by virtue of their large size. It is therefore impossible to assess the suitability of a site for Local Wildlife Site designation by consideration of its size alone, and it must be recognised that size thresholds are particularly subjective and open to challenge. Minimum size thresholds for Local Wildlife Site designation are therefore kept to a minimum within the guidelines. Providing that the quality of the site is sufficient, even the smallest of sites can then potentially be properly selected as a Local Wildlife Site. Further guidance can be found in the Site Boundary section.

6.3 Naturalness/Typicalness

Naturalness is determined by the extent to which natural factors rather than man-made or modified factors influence the physical and biological attributes of a landscape, ecosystem or habitat. However, both natural and semi-natural habitats can be of high value for wildlife and in Derbyshire most habitats are semi-natural.

Assessing how typical or natural a given habitat can be made by comparison with, for example, published sources such as the detailed descriptions of UK plant communities provided by the National Vegetation Classification (British Plant Communities, Rodwell 1991 et seq) or existing habitat data held within the LWS system itself. It is also possible to give a subjective, professional assessment of how much a habitat has been modified or degraded because of human activities, and to give preference to examples which are comparatively unmodified.

Features indicative of naturalness will vary from habitat to habitat and might include physical or ecological features. For example, oxbows, riffles and meanders are often considered natural features of rivers while low soil fertility is often a feature of species rich grasslands and heathlands.

6.4 Diversity

Many habitats are intrinsically diverse, and this element may therefore be addressed automatically by the existence of these habitats within the site, especially where these are 'good' examples. Other habitats (e.g. oligotrophic pools, acid grasslands) have a diversity which is naturally restricted, but which may nevertheless support specialized species which are otherwise rare. Diversity within habitats is therefore deemed to have been addressed provided the site comprises or contains 'good' examples of specified priority habitats.

The diversity of a site can be assessed by comparison with data collected on other sites by LWS surveys over the past 30 years. This data comprises species lists of typical plants or animals for habitat types and has been used wherever possible to draw up lists of selection species. These are species are considered good indicators of habitat quality. Further comparison for some habitats can be made with the relevant plant community tables of the NVC, whilst the NVC community tables also include figures for the average number of species per quadrat for each vegetation community.

Another aspect of diversity lies in the interaction between habitats. A potential Local Wildlife Site may contain several different, complimentary habitats, and in some cases, these may have a combined value which is greater than that of the individual elements when considered alone. In situations where the individual elements each qualify for Local Wildlife Site selection on their own merits this does not present a problem but merely reinforces the case for designation of the site. However, there may be some instances where the individual elements do not in themselves meet the guidelines, but which together have a combined value sufficient to warrant selection as a 'mosaic site'.

6.5 Secondary elements

It is anticipated that in almost all cases, consideration of the secondary elements is unlikely to result in a site being selected if it does not also meet or exceed one or more of the primary elements listed above. However, the secondary elements may provide powerful reinforcement of the case for selection, and they may be sufficient to merit promotion of a borderline site to Local Wildlife Site status.

6.6 Position in an ecological unit

This may be an important consideration, especially in circumstances where a site forms a valuable adjunct to another Local Wildlife Site or to a SSSI, for example, or where a site forms part of a linear complex joining several otherwise isolated sites together. This element is reflected in the approach taken to defining appropriate boundaries.

6.7 Potential value

It could be argued that almost any area of land is potentially of high nature conservation interest, provided that enough effort is expended on it. The designation of Local Wildlife Sites is intended to identify those which currently make the highest contribution to biodiversity. Therefore, the designation of sites should depend primarily on their current interest and not their potential value.

However, the guidelines do allow for the designation of degraded sites, where the habitat is essentially still classified as semi-natural but where change or damage, which is reversible, has occurred. Examples include heavily grazed woodlands or those where significant planting has taken place. In these cases, the site must retain enough of its ecological interest to qualify under the guidelines, with the potential for further improvement.

6.8 Fragility

The fragility of a given habitat is reflected largely in the overall current extent of the habitat and its rarity. As a result, fragility should not be a marked consideration provided the site meets the primary criteria at the time of selection. As with potential value, however, it is a valid point to bear in mind when considering the attributes of a given site and should be highlighted when considering the direction of management resources and funds in the future.

6.9 The Use of Non-Ecological Attributes

The attribute of 'intrinsic appeal' has not previously been used in the selection of Local Wildlife Sites in Derbyshire. Intrinsic appeal refers to the social or cultural values, such as visual attractiveness or amenity use which are often associated with Local Wildlife Sites and other areas of conservation importance.

As part of this revision Derby City Council requested that the selection guidelines should include a 'social value' criterion. The purpose of this criterion would be to enable the selection guidelines to accommodate some sites in urban settings which whilst not having the substantive nature conservation interest to warrant selection under the habitat and species criteria, are of great social value to local communities as places where they can enjoy wildlife on their doorstep, even though the nature conservation interest is not necessarily substantive in the context of the rest of the City or wider countryside.

As part of the consultation process for this revision this issue was discussed by the Local Wildlife Sites Panel at its meeting during March 2011 with the Panel reaching a majority decision that they could not approve the inclusion of a Social Value Criterion within the guidelines.

6.10 The National Vegetation Classification

Many of the selection criteria in these guidelines make use of the National Vegetation Classification (NVC) (British Plant Communities, Rodwell 1991 et seq). This provides a country-wide classification system for natural and semi- natural vegetation and is the most widely accepted and established way of identifying and describing habitat types. Each habitat type is identified by a code (e.g. W10) and defined by the presence of several indicator species and their relative abundance.

Assessment of habitats against the NVC is carried out using a standard methodology based on quadrat sampling. The presence and abundance of indicator species is then compared with the NVC definitions to determine the relevant habitat code.

In the use of the NVC, it must be remembered that habitats do not always neatly fit into one NVC code and often fall somewhere along a continuum between two habitat types. Where this is the case, a degree of discretion is required from the surveyor to assign the most appropriate code.

7. Application of the Local Wildlife Site Guidelines

7.1. Use of the Guidelines

In general, any area of land or water which meets one or more of the guidelines is eligible for designation as a Local Wildlife Site. However, there are notable exceptions, such as domestic gardens, and these are identified in the relevant sections.

Where a site meets more than one guideline, all of these should be included in its entry on the Local Wildlife Sites Register. Different species will have different habitat requirements, and this could influence management needs or potential development impacts. Habitats too have different management needs. The inclusion of all the relevant guidelines will highlight the range of interest associated with the site and assist in biodiversity auditing and reporting.

7.2 Relationship to Statutory Site Designations

The Local Wildlife Sites Register does not generally include statutory sites, such as Sites of Special Scientific Interest, since these are already subject to the highest level of protection. However where a SSSI has been designated entirely for its geological interest, it may also be considered for designation as a Local Wildlife Site. Local Nature Reserves, which are primarily designated for their local community value, are also eligible for selection.

7.3 Quality of Information

It is imperative that Local Wildlife Sites are designated based on the best available information. This should have been obtained through field survey by a suitably qualified and/or experienced person within the last ten years (unless otherwise stated). For difficult to identify species, verification by an acknowledged expert may be required.

8. Determining Local Wildlife Site Boundaries

Once a site has been assessed as being of Local Wildlife Site quality, careful consideration should be given to the identification of the boundaries of the designation. Care must be taken not to place an undue constraint on potential development and undermine the rigour of the Local Wildlife Sites system, by including significant areas of land that do not meet the selection guidelines. However, it may be necessary for the future viability of the site to include habitat that is of lesser value. Generally, at least 50% of the area of a Local Wildlife Site should consist of land which qualifies under the guidelines.

When determining Local Wildlife Site boundaries:

- The justification for the definition of the boundary must be clearly recorded.

- A single Local Wildlife Site may include adjacent areas of several habitats, each of which qualifies under different criteria.
- Where there is an aggregation of qualifying management units of the same general habitat type (e.g. grassland) that are not adjacent, but near each other, these may be defined by separate boundaries but designated as a single Local Wildlife Site.
- Where boundaries are indistinct and not all a site is of interest it may not be appropriate to designate the whole area. In this case a boundary may be drawn which is not visible on the ground but relates to visible features (e.g. a line between two landmarks). The site should include as little of the non-qualifying land as possible.
- For wetland Local Wildlife Sites, where water supply and quality are vital to maintaining their ecological interest, the boundary may be drawn to include an appropriate buffer zone and/or hydrologically linked habitats. In addition, adjacent habitats may be crucial for amphibian and invertebrate populations and may warrant inclusion despite not qualifying.
- Where a Local Wildlife Site is designated for a species, or group of species, which has a requirement for a different habitat at each stage of its life cycle (or at different times of year) the boundary should be drawn to include all of these habitats if they are adjacent or in close proximity to each other. For more mobile species such as birds, an area important for only part of the lifecycle / year may be designated, and this is explained in the appropriate section.
- For rivers a problem can occur with determining the boundaries of Local Wildlife Sites where the river is dynamic and may change course rapidly, thus quickly rendering the boundary out of date. Where the floodplain habitat either side of the river is of Local Wildlife Site quality, a corridor can be designated which allows for the movement of the river within it. If this is not appropriate, the limits of the Local Wildlife Site should be defined by fixed points upstream and downstream (with reference to other landscape features where appropriate), and the boundaries either side of the river assumed to change with the river course. It is helpful to provide a written definition of the boundary such as ‘the top of the bank of the main channel’. On less dynamic rivers, flood banks or other physical features can be used to determine Local Wildlife Site boundaries.

9. National Character Areas

England has been divided into areas with similar landscape character, which are called National Character Areas (NCAs) which were previously known as Joint Character Areas.

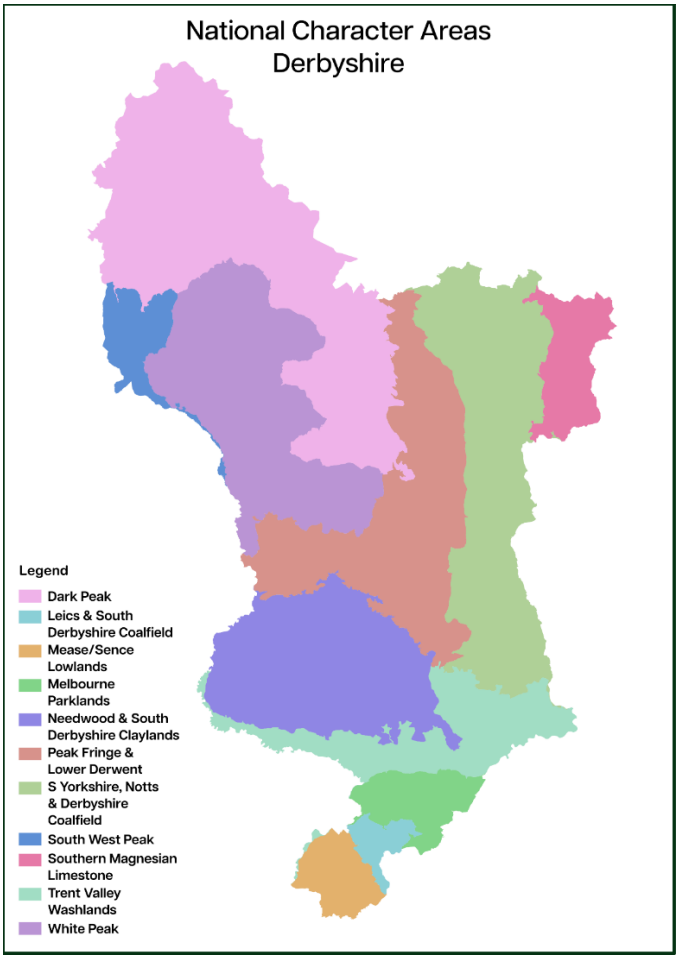
In Derbyshire there are 11 different National Character Areas:

- Dark Peak
- Leicestershire and South Derbyshire Coalfields
- Mease/Sence Lowlands
- Melbourne Parklands
- Needwood & South Derbyshire Claylands
- Peak Fringe & Lower Derwent

- South Yorkshire, Nottinghamshire and Derbyshire Coalfield
- South West Peak
- Southern Magnesian Limestone
- Trent Valley Washlands
- White Peak

Some of these National Character Areas occur over relatively small areas of Derbyshire, for example, Manchester Pennine Fringe and Yorkshire and South Pennine Fringe. The only area which is situated wholly within Derbyshire is the Derbyshire Peak Fringe and Lower Derwent NCA

There is considerable variation in the extent and quality of different habitats between the different National Character Areas in Derbyshire and the selection thresholds have attempted to take this into account. For example, good examples of semi-natural grasslands are especially scarce in the Coalfield National Character Areas, Trent Valley Washlands and Needwood and South Derbyshire Claylands Character Areas and the threshold for selection has been set slightly lower than for other Character Areas.



10. The Derby area

Since the last revision of the selection guidelines in 2003 there has been concern that the guidelines do not fully capture the nature conservation importance of many sites within Derby City when the urban setting of these sites is taken into consideration.

The need for differing threshold levels for site selection to account for the considerable variation in the extent and quality of habitats in different parts of the county is reflected in variations in threshold values for several habitat selection criteria within these guidelines as outlined in the previous section. It has therefore been possible to address these concerns relating to Derby City sites under the individual habitat selection guidelines by including threshold levels which more accurately reflect the importance of the City's sites. This approach follows DEFRA guidance (DEFRA, 2006).

Derby City continues to grow with its outer environs and zones for future development extending beyond the unitary boundary. For this reason, reference to the area where there is a need for differing site selection thresholds is better referred to as the Derby Area rather than specifically to Derby City. Such an approach will also enable these guidelines to remain appropriate for the foreseeable future whilst the inevitable growth of Derby continues.

Part B: Guidelines for Site Selection

11.0 Section 1: Habitat Guidelines

11.1 Woodland

Woodlands in Derbyshire
In Derbyshire woodland cover is estimated to be around 19,513 hectares covering 7.4% of the land compared to the East Midlands average of 5.1% (Forestry Commission, 2002). The national average, for comparison, is around 10% and in the south and west of the British Isles it is often higher. Derbyshire's woodlands are predominantly broadleaved (70%) with coniferous and mixed woodlands comprising the remainder.

Most of Derbyshire's woodlands tend to be small (< 10 ha) and are often isolated within intensively used agricultural land. However, the Derwent and Wye Valleys support significant areas of woodland especially north of Belper to Ladybower Reservoir and Buxton. Elsewhere more densely wooded areas occur in Northeast Derbyshire and in South Derbyshire, although here many of the woodlands are recent broadleaved plantations. In Bolsover several large woodlands of over 150 ha are present. In some cases, woodlands are adjacent or near other semi-natural habitats like hay meadows, unimproved pastures and moorland. Many woodlands include small but significant associate habitats within them like woodland rides, grassland glades, mires and ponds.

Defining Woodland Types

Ancient woodland
The term ancient woodland can be used for any woodland that has been present since 1600. Ancient woodlands tend to support a characteristic and often diverse range of plant and animal species and for many groups it is possible to identify species indicators for ancient woodland sites. Additionally, physical features associated with woodlands such as woodbanks and ditches as well as cartographic evidence from early maps such as the 1816 O.S. 1st Edition map can be used to identify these woods. Ancient woodlands will include both remnants of the original forests that developed after the last glacial period 10,000 years ago (primary forest) and ancient secondary forests that arose more recently. However, for practical purposes it is usually impossible to distinguish between these two woodland types.

The Ancient Woodland Inventory (Nature Conservancy Council, 1992) divides ancient woodlands into those composed of native broadleaved tree species and those that have been replanted with broadleaves or conifers. It is estimated that ancient woodland sites (in blocks over 2ha) cover 4,440 ha in Derbyshire. That is equivalent to 2% of the land cover in the county and 38% of the total woodland cover in the county. Of this it is estimated that 59% is semi-natural and 41% is replanted. There are 2,968 hectares of ancient woodland (in blocks of over 2 hectares) in the

Lowland Derbyshire BAP area. This equates to 34% of the total county woodland resource. 55% of this is semi-natural and 45% has been replanted with non-native species.

Secondary semi-natural woodland
Secondary woodlands occupy land that has not been continuously wooded since 1600. They include naturally regenerated woodlands and those created by planting. Secondary woodlands vary greatly in their ecological characteristics and their nature conservation value. Natural regeneration close to ancient woodlands perhaps on abandoned fields, commons and heaths, can result in quite rapid accumulation of species more typical of ancient woodlands. Typically, however, secondary woodlands support fewer species of plants and animals than ancient woodland because they have not had time for species to colonise from surrounding woodlands or because they are isolated. The age and geographical position of secondary woodland is therefore very important in determining their nature conservation value.

Wet woodland
Wet woodland, or carr, is often secondary in origin, but ancient sites are present within the county. Wet woodland occurs where the water table is permanently high or where there is significant surface flushing on slopes. The dominant tree species found in wet woodlands are those that can tolerate poorly drained soils, such as species of Willow, Alder and Birch.

Many of the remaining areas of semi-natural woodland are associated with flushed slopes and valley sides, valley bottoms including small brooks and stream courses and moorland cloughs. Within these woodlands wet woodland is often a significant feature especially in the Dark Peak, Derbyshire Peak Fringe and Lower Derwent and in the Needwood and South Derbyshire Claylands National Character Areas. In the Trent Valley Washlands previously extensive areas of wet woodland have declined to only a few sites, though some mineral extraction has allowed new wet woodlands to develop. Wet woodland has also developed on old railway sidings.

Woodland Selection Guidelines
Sites that meet one or more of the following guidelines will be eligible for designation as a Local Wildlife Site.

Wd1 Sites included on the Derbyshire Inventory of Ancient Woodland which support semi-natural woodland vegetation

UKBAP Habitat Action Plans- Wet Woodland, Upland Mixed Ashwood, Upland Oakwood, Lowland Mixed Deciduous Woodland

Application
All sites listed on the Derbyshire Ancient Woodland Inventory should be included except sites that have been replanted and/or have become degraded and lost most of their characteristic features.

This guideline can also be applied to ancient woodland sites that have been replanted with either broad-leaved or coniferous species. In these instances, consideration should be given to the other semi-natural features of the site such as the composition of the field layer and understorey and the extent of regeneration of broad-leaved tree and shrub species. The potential for restoring the woodland should be considered.

The woodland selected may have associated habitats such as ponds, hedges and grassland areas. These should be considered as part of the site so long as they are within the overall external physical boundary.

Justification
Ancient semi-natural woodlands are not re-creatable within any practical time frame. The ecological and physical features of a site will have developed over hundreds of years. They are an essential part of Derbyshire's 'critical natural capital' and a significant source of biodiversity in the county. Even small ancient woodland sites are of value.

Many woodlands which correspond to the woodland types which form Priority Habitats within the UK BAP are also ancient in origin.

Wd2 Other semi-natural woodlands where field evidence and/or map evidence indicates that they are ancient in origin

UKBAP Habitat Action Plans- Wet Woodland, Upland Mixed Ashwood, Upland Oakwood, Lowland Mixed Deciduous Woodland

Application
Ancient semi-natural woodlands not included in the Derbyshire Ancient Woodland inventory can be included here. Woods smaller than 2 hectares are included only if evidence of ancient origin is particularly strong and/ or they are especially good examples of semi-natural habitat types. Selection should be based on field data including species composition, woodland structure, and presence of woodbanks or earthworks or other features associated with ancient woodlands and examination of historical maps to demonstrate woodland continuity on the site. Ideally the wood should be present on the 1st Edition O.S. map series produced around 1816. Indicator species of higher plants are listed in Table 1

Justification
The 2-hectare minimum size requirement for inclusion in the inventory is a national standard. There are however several sites, which merit inclusion in terms of distinctiveness and species and/or habitat diversity, which are between 1 hectare and 2 hectares in extent.

Wd3 Areas of semi-natural woodland referable to one of the following National Vegetation Classification (NVC) types:

- ***W8 Ash (Fraxinus excelsior) – Field Maple (Acer campestre) – Dog's Mercury (Mercurialis perennis) woodland***
- ***W10 Pedunculate Oak (Quercus robur) – Bracken (Pteridium aquilinum) – Bramble (Rubus fruticosus) woodland***
- ***W11 Sessile Oak (Quercus petraea) – Downy Birch (Betula pubescens) – Wood Sorrel (Oxalis acetosella) woodland***
- ***W16 Oak spp. (Quercus spp) – Birch spp. (Betula spp.) – Wavy Hair Grass (Deschampsia flexuosa) woodland***

UKBAP Habitat Action Plans- Upland Mixed Ashwood, Upland Oakwood, Lowland Mixed Deciduous Woodland

Application
This guideline should be applied to semi-natural woodland and not plantation woodland. The woodland should display biological and physical features consistent with the NVC communities but does not have to be an ideal fit. For example, the dominant canopy species may not resemble the NVC community, whilst the field layer composition may be a better indication of the NVC community type.

Justification
Semi-natural non-ancient woodlands, especially the larger examples, are uncommon and may be important locally or as potential links between ancient woodlands. These woodland types are encompassed within the suite of UK BAP Priority Habitat woodlands. Older secondary woodlands (over 100 years old) have often developed significant biodiversity value.

Wd4 Secondary semi-natural woodland (or plantation woodland within the Derby) that scores 12 (8 for the Derby area woodlands) or more from the woodland vascular plant species listed in Table 1.

UKBAP Habitat Action Plans- Wet Woodland, Upland Mixed Ashwood, Upland Oakwood. Lowland Mixed Deciduous Woodland

Application
This guideline should be applied to secondary semi-natural woodland sites which are predominantly occupied by broad-leaved tree species.

This guideline can also be applied to older plantation woodlands exhibiting good secondary woodland development outside of the Derby area and to any plantation woodland within the Derby area.

Justification
Derbyshire has only 6% remaining land cover of woodland. Secondary semi- natural woodlands, especially the larger examples, are uncommon and may be important locally or as potential links

between ancient woodlands. Older plantation woodland (for example woods mapped on OS Maps from the late 1800s) often exhibit good secondary woodland regeneration beneath a mature plantation canopy which has often been long abandoned as a managed crop, or where the canopy has been thinned. Often these long-established woods, irrespective of their origin, can support a diverse woodland flora and be more diverse than woodlands qualifying under the other woodland selection criteria. Capturing these woodlands within the Local Wildlife Sites system is therefore considered to be important. Many of the important woodlands within the Derby area are of plantation origin, but woodland within the Derby area is a limited habitat and therefore of local importance, irrespective of their age.

Wd5 Areas of semi-natural wet woodland, spring and seepage woodlands referable to one of the following National Vegetation Classification (NVC) types:

- ***W1 Goat Willow (Salix cinerea) – Common Marsh Bedstraw (Galium palustre) woodland.***
- ***W2 Grey Willow (Salix cinerea) – Downy Birch (Betula pubescens) – Common Reed (Phragmites australis) woodland***
- ***W4 Downy Birch (Betula pubescens) – Purple Moor-grass (Molinia caerulea) woodland.***
- ***W5 Alder (Alnus glutinosa) – Greater Tussock-sedge (Carex paniculata)***
- ***woodland.***
- ***W6 Alder (Alnus glutinosa) – Common Nettle (Urtica dioica) woodland.***
- ***W7 Alder (Alnus glutinosa) – Ash (Fraxinus excelsior) – Yellow Pimpernel (Lysimachia nemorum) woodland.***

Or has more than 7 notable wet woodland species present in Table 1.

UKBAP Habitat Action Plan – Wet woodland

Application
This guideline should be applied to semi-natural woodland and not plantation woodland. The woodland should display biological and physical features consistent with the NVC communities, but does not have to be an ideal fit. For example, the dominant canopy species may not resemble the NVC community, whilst the field layer composition may be a better indication of the NVC community type.

Justification
Wet woodland is a UK BAP Priority Habitat.

Table 1 Woodland Plant Species
Scoring
All species score 1 with the exception of those species in bold (Derbyshire Vascular Plant Red Data List Species - 2009) which score 2.

Indicator value (ASNW = Ancient semi-natural woodland; WW = wet woodland notable)

Table 1. Woodland Plant Species		
Scientific Name	**Common Name**	**Indicator value**
Acer campestre	Field Maple	ASNW
Adoxa moschatellina	Moschatel	ASNW, WW
Ajuga reptans	Bugle	ASNW, WW
Allium ursinum	Ramsons	ASNW, WW
Anemone nemorosa	Wood Anemone	ASNW, WW
Angelica sylvestris	Wild Angelica	WW
Apium nodiflorum	Fool's-water-cress	WW
Aquilegia vulgaris	Columbine	ASNW
Arctium lappa	Greater Burdock	
Arctium minus	Lesser Burdock	
Arctium nemorosum	Wood Burdock	ASNW
Arum maculatum	Lords-and-Ladies	
Asplenium scolopendrium	Hart's-tongue	ASNW
Athyrium filix-femina	Lady-fern	
Betonica officinalis	Betony	ASNW
Blechnum spicant	Hard-fern	ASNW
Brachypodium sylvaticum	Wood False-Brome	
Bromopsis ramosa	Hairy-brome	ASNW
Calamagrostis epigejos	Wood Small-reed	ASNW
Calluna vulgaris	Heather	
Caltha palustris	Marsh-marigold	WW
Campanula trachelium	Nettle-leaved Bellflower	ASNW
Cardamine amara	Large Bittercress	ASNW, WW
Cardamine impatiens	**Narrow-leaved Bittercress**	ASNW
Carex laevigata	Smooth-stalked Sedge	ASNW
Carex pallescens	Pale Sedge	ASNW, WW
Carex pendula	Pendulous Sedge	ASNW, WW
Carex remota	Remote Sedge	ASNW, WW
Carex strigosa	**Thin-spiked Wood-sedge**	ASNW, WW
Carex sylvatica	Wood-sedge	ASNW, WW
Ceratocapnos claviculata	Climbing Corydalis	
Chrysosplenium alternifolium	Alternate-leaved Golden-saxifrage	ASNW, WW
Chrysosplenium oppositifolium	Opposite-leaved Golden-saxifrage	ASNW, WW
Circaea x intermedia	**Upland Enchanter's-nightshade**	
Conopodium majus	Pignut	ASNW
Convallaria majalis	Lily-of-the-valley	ASNW

Table 1. Woodland Plant Species		
Scientific Name	**Common Name**	**Indicator value**
Cornus sanguinea	Dogwood	
Crataegus laevigata	Midland Hawthorn	ASNW
Cytisus scoparius	Broom	
Daphne laureola	Spurge Laurel	ASNW
Daphne mezereum	**Mezereon**	ASNW
Deschampsia cespitosa	Tufted Hair-grass	WW
Digitalis purpurea	Foxglove	
Dipsacus pilosus	**Small Teasel**	ASNW
Dryopteris affinis	Scaly Male-fern	WW
Dryopteris carthusiana	**Narrow Buckle-fern**	ASNW, WW
Dryopteris dilatata	Broad Buckler-fern	
Dryopteris filix mas	Male-fern	
Elymus caninus	Bearded Couch	ASNW
Epipactis helleborine	Broad-leaved Helleborine	ASNW
Equisetum fluviatile	Water Horsetail	WW
Equisetum hyemale	**Rough Horsetail**	ASNW, WW
Equisetum palustre	Marsh Horsetail	WW
Equisetum sylvaticum	Wood Horsetail	ASNW, WW
Equisetum telmateia	Great Horsetail	WW
Erica cinerea	Bell Heather	
Euonymus europaeus	Spindle	
Eupatorium cannabinum	Hemp-agrimony	WW
Euphorbia amygdaloides	Wood Spurge	ASNW
Festuca altissima	**Wood Fescue**	ASNW
Filipendula ulmaria	Meadowsweet	WW
Fragaria vesca	Wild Strawberry	
Frangula alnus	Alder Buckthorn	ASNW, WW
Gagea lutea	**Yellow Star-of-Bethlehem**	ASNW
Galium odoratum	Sweet Woodruff	ASNW
Geum rivale	Water Avens	WW
Geum urbanum	Wood Avens	
Gymnocarpium dryopteris *	Oak Fern	
Helleborus foetidus	**Stinking Hellebore**	ASNW
Helleborus viridis	**Green Hellebore**	ASNW
Holcus mollis	Creeping Soft-grass	ASNW
Hordelymus europaeus	**Wood Barley**	ASNW
Hyacinthoides non-scripta	Bluebell	ASNW
Hydrocotyle vulgaris	Marsh Pennywort	WW
Hypericum hirsutum	Hairy St John's-wort	
Hypericum pulchrum	Slender St John’s-wort	ASNW

Table 1. Woodland Plant Species		
Scientific Name	**Common Name**	**Indicator value**
Hypopitys monotropa	**Yellow Bird's-nest**	
Ilex aquifolium	Holly	ASNW
Iris pseudacorus	Yellow Iris	WW
Lamiastrum galeobdolon ssp montanum	Yellow Archangel	ASNW, WW
Lathraea squamaria	Toothwort	ASNW
Lathyrus montanus	Bitter Vetch	ASNW
Lathyrus sylvestris	**Narrow-leaved Everlasting Pea**	ASNW
Ligustrum vulgare	Wild Privet	
Listera ovata	Common Twayblade	
Lithospermum officinale	**Common Gromwell**	
Lonicera periclymenum	Honeysuckle	
Luzula pilosa	Hairy Wood-rush	ASNW
Luzula sylvatica	Great Wood-rush	ASNW
Lysimachia nemorum	Yellow Pimpernel	ASNW
Lysimachia nummularia	Creeping Jenny	WW
Malus sylvestris	Crab Apple	ASNW
Melampyrum pratense	Common Cow-wheat	ASNW
Melica nutans	Mountain Melick	
Melica uniflora	Wood Melick	ASNW
Mercurialis perennis	Dog's Mercury	WW
Milium effusum	Wood Millet	ASNW
Moehringia trinerva	Three-nerved Sandwort	ASNW
Molinia caerulea	Purple Moor-grass	
Myosotis sylvatica	Wood Forget-me-not	ASNW
Narcissus pseudonarcissus	Wild Daffodil	ASNW
Neottia nidus-avis	**Bird's-nest Orchid**	ASNW
Oenanthe crocata	Hemlock Water-dropwort	WW
Ophrys insectifera	**Fly Orchid**	
Orchis mascula	Early-purple Orchid	ASNW
Oreopteris limbosperma	Lemon-scented Fern	
Oxalis acetosella	Wood Sorrel	ASNW, WW
Paris quadrifolia	**Herb Paris**	ASNW, WW
Phegopteris connectilis	Beech Fern	
Phragmites australis	Common Reed	WW
Pimpinella major	Greater Burnet-saxifrage	
Platanthera chlorantha	**Greater Butterfly Orchid**	
Poa nemoralis	Wood Meadow-grass	ASNW
Polygonatum multiflorum	Solomon's-seal	ASNW
Polypodium vulgare agg	Polypody	ASNW

Table 1. Woodland Plant Species		
Scientific Name	**Common Name**	**Indicator value**
Polystichum aculeatum	Hard Shield-fern	ASNW
Polystichum setiferum	Soft Shield-fern	ASNW
Potentilla sterilis	Barren Strawberry	ASNW
Primula veris	Cowslip	
Primula vulgaris	Primrose	ASNW, WW
Prunus avium	Wild Cherry	ASNW
Pyrola minor	Common Wintergreen	ASNW
Ranunculus auricomus	Goldilocks Buttercup	ASNW
Ranunculus flammula	Lesser Spearwort	WW
Ranunculus lingua	Greater Spearwort	WW
Rhamnus catharticus	Purging Buckthorn	
Ribes alpinum	**Mountain Currant**	ASNW
Ribes nigrum	Blackcurrant	ASNW
Ribes rubrum	Redcurrant	ASNW
Rosa arvensis	Field Rose	ASNW
Rumex sanguineus	Wood dock	
Salix aurita	Eared Willow	
Sanicula europaea	Sanicle	ASNW
Schedonorus giganteus	Giant Fescue	ASNW
Scirpus sylvatica	**Wood Club-rush**	ASNW
Scrophularia nodosa	Common Figwort	
Serratula tinctoria	Saw-wort	ASNW
Silene flos-cuculi	Ragged Robin	WW
Sorbus rupicola	**Rock Whitebeam**	ASNW
Sorbus torminalis	Wild Service-tree	ASNW
Stellaria alsine	Bog Stitchwort	WW
Stellaria holostea	Greater Stitchwort	
Tamus communis	Black Bryony	ASNW
Teucrium scorodonia	Wood Sage	
Tilia cordata	Small-leaved Lime	ASNW
Tilia platyphyllos	**Large-leaved Lime**	ASNW
Vaccinium myrtillus	Bilberry	ASNW
Vaccinium oxycoccus	Cranberry	
Veronica chamaedrys	Germander Speedwell	
Veronica montana	Wood Speedwell	ASNW
Viburnum opulus	Guelder-rose	ASNW
Vicia sylvatica	**Wood Vetch**	ASNW
Viola hirta	Hairy Violet	
Viola odorata	Sweet Violet	
Viola palustris	Marsh Violet	ASNW, WW

Table 1. Woodland Plant Species		
Scientific Name	**Common Name**	**Indicator value**
Viola reichenbachiana	Early Dog-violet	ASNW
Viola riviniana	Common Dog-violet	ASNW

11.2 Wood Pasture, Parkland and Veteran Trees

Wood pasture and parkland are defined by a vegetation structure, rather than a particular plant community; usually many veteran trees growing above grassland, heathland or woodland ground floras. Tree management, usually by pollarding, has maintained the characteristic veteran trees, whilst grazing by domestic livestock or deer has maintained the vegetation structure. Both habitats may have been converted to other land uses such as arable fields, woodland or amenity uses but may still retain trees and be of value for nature conservation where the specialist species supported by veteran trees have survived.

The national HAP definition includes lowland wood pasture and parklands derived from mediaeval forests and emparkment, wooded commons, parks and pastures with trees in them. Some have subsequently had a designed landscape superimposed on them in later centuries. Parkland may originate in landscaping of estates around country houses two or three hundred years ago. Some parkland may be only 100-150 years old but may contain veteran trees from an earlier landscape.

Veteran trees are of interest biologically, culturally and aesthetically because of their age, size or condition. Trees can be considered veterans if they are exceptionally old for their species and have reached or passed their peak growth rate. Long-lived species such as Oak and Beech reach this point at around 150 – 200 years at the earliest. Veteran trees may be either indigenous or introduced species. Generally, however it is the associated features of the tree e.g. dead wood and sap runs which are of importance, rather than the species. Where veteran trees are isolated, this increases their vulnerability.

A rough rule of thumb can be adopted for species such as Oak as follows:
Trees with a girth of 3.2m are potentially interesting
Trees with a girth of more than 4.7m are valuable in terms of conservation
Trees with a girth of more than 6.25m are truly ancient

It has been estimated that Britain holds 80% of Europe's resource of veteran trees. Veteran trees are important for the many niches they provide for birds, bats, and mammals and for the dead wood and sap run habitats, which are valuable for invertebrates and fungi. Many of the species found on veteran trees are rare, endangered dead wood specialists, making veteran trees an important BAP habitat. Veteran trees are also of value historically, culturally and visually as an integral part of the English landscape.

Associate habitats such as flowering shrubs, especially Hawthorn, together with grassland and tall herbs such as umbellifers and various composite species are important as they provide

nectar and/or pollen for saproxylic invertebrate species such as Longhorn Beetles and flies. Other relevant HAPs are those for hedgerows, unimproved grasslands of all types, field margins and woodlands.

Wood pasture and parkland & veteran trees in Derbyshire
In Derbyshire, wood pasture and parkland is characterised by Pedunculate Oak, occasionally Ash and a variety of planted species such as Beech, Sycamore and Sweet Chestnut which are not considered to be native in Derbyshire. Lime used to be an important species in the natural forests of this region. Wych Elm was also important in some locations until Dutch Elm disease reduced the numbers; the initial result was an increase in dead wood habitats, reflected in a rise in records of some species locally, but subsequently many trees were felled. In Lowland Derbyshire the distribution of parkland is very scattered, but with most parks in the southern half of the area.

Though rare fungi, lichens and bryophytes are associated with veteran trees and parklands in Derbyshire, high levels of pollution affect the distribution of the lichens. Parklands may be important sites for bats, such as Noctule, Natterer's bat and Leisler's bat, and for birds including hole-nesting species such as Woodpeckers, Spotted Flycatcher, Tit species, Redstart and Tree Sparrow. Parklands may retain areas of unimproved grassland as seen at Hardwick Hall.

In the Needwood and South Derbyshire Claylands National Character Area (NCA) Kedleston Park, originally a mediaeval deer park is now owned by the National Trust and designated as a SSSI. Other estates, where parkland exists include Osmaston Park, Sudbury Hall and Shirley Park. Some parkland dates from the seventeenth and eighteenth centuries, but some originates earlier, since this part of the county had several deer parks in mediaeval times. In some cases, there has been no survey work to evaluate wildlife. Some parkland is associated with other valuable habitats such as ancient woodland, valley marshes and streams and lakes.

In the Derbyshire Peak Fringe and Lower Derwent NCA, the main remaining parks include those at Wigwell Grange, Windley Hall, Alderwasley Hall and Alton Manor, all privately owned. The only equivalent of a royal forest in this area is Duffield Frith, which was deforested early in the Middle Ages, but remnants can still exist for example Belper Park.

On the South Magnesian Limestone NCA the main area of parkland is the Deer Park associated with Hardwick Hall. On the ‘Coalfield’ NCAs there are smaller parks at Ogston, Stubben Edge, Locko Park and Stubbing Court. Examples at Renishaw Hall and Breadsall Priory are now altered because of their use as golf courses. In the Melbourne Parklands NCA Calke Abbey parkland is a SSSI and National Nature Reserve and parkland at Elvaston Castle still supports mature and veteran trees and has significant wildlife value.

Of the veteran trees in the wider countryside, Beech, Sweet Chestnut, Horse- chestnut and Sycamore are commonly found as well as native species of Oak, Ash, Yew, and Small-leaved Lime. There are a few veteran Black Poplar and some ancient Willow pollards. Though little studied, some distribution patterns between the NCA in Derbyshire can be discerned. Some woodlands will have many veteran trees e.g. Crich Chase and Bow Wood.

Solitary Limes, for example, can be found occasionally in the Derbyshire Peak Fringe and Lower Derwent NCA.

Oaks are more common in the Needwood and South Derbyshire Claylands NCA, especially in hedgerows. Here there are also some veteran Willow pollards

Within the 'Coalfield' NCAs veteran trees of all species are very scarce, the few remaining, usually Beech or Oak, often associated with long destroyed parkland landscapes.

On the South Magnesian Limestone NCA veteran trees occur very occasionally in hedgerows with fewer in woodlands.

In the Trent Valley Washlands NCA Oaks occur in hedgerows and Yew in churchyards. Here again, some veterans occur where there were wood pasture and parkland but where this landscape may have disappeared. There are also some large Willow pollards and native Black Poplar occurs only in this NCA.

Application
Natural England has developed a site assessment protocol for veteran tree sites (Castle & Mileto, 2005 A & B). These protocols should be referred to when sites are being considered for selection against the Local Wildlife Site Wood Pasture and Veteran Trees criteria to provide context and guidance.

Wood-pasture, Parkland and Veteran Tree Selection Guidelines
Sites that meet one or more of the following guidelines will be eligible for designation as a Local Wildlife Site.

Pk1 Parkland or wood pasture sites greater than 2 ha.

UKBAP Habitat Action Plan - Wood Pasture and Parkland

Application
This guideline should be applied to sites that support habitats and species that are traditionally associated with Parkland or wood pasture and/or support blocks, groupings, scattered old (>150 years) or veteran trees in combination with either grazed woodland or grassland and or in combination. Associated features of sites may also be included such as grassland, ponds, woodland and old walls. Parkland sites may also be considered under the species guidelines.

Justification
Wood pasture and parkland are priority habitats within the UK BAP.

Pk2 Groupings of 5 or more trees exhibiting features indicative of veteran or ancient status within 0.25 ha

UKBAP Habitat Action Plan - Wood Pasture and Parkland

Application
This guideline should be applied to old/veteran trees (at least 150 years old) that are known to support fungi and or invertebrates and/or lichens that are either characteristic or specialist species of veteran trees. Associated features of sites may also be included such as grassland, ponds, woodland and old walls.

Justification
Wood pasture and parkland are priority habitats at UK level and feature within both the Lowland Derbyshire and Peak District BAPs.

11.3 Hedgerows and Scrub

Ancient and/or species rich hedgerows
Ancient hedgerows are those that have continually existed since at least 1600 and are associated with early land enclosure. Some ancient hedgerows are associated with parish boundaries and can be traced back hundreds of years. Ancient hedgerows usually support a greater number of tree and shrub species and can also have woodland field flora species including ancient woodland indicator species associated with them. Late enclosure and more recent hedgerows were planted with very few species and are often dominated by Hawthorn. Colonisation by other trees and shrubs is slow and consequently there are fewer species in younger hedgerows. Some species rich hedgerows may be of more recent origin either through enlightened planting or where they occur adjacent to ancient woodland thus allowing colonisation, particularly of field layer species.

In Derbyshire many species rich hedgerows have been removed, especially in the 'Coalfield' and South Magnesian Limestone National Character Areas. More intact patterns of old species rich hedgerows exist in the Needwood and South Derbyshire Claylands and parts of the Derbyshire Peak Fringe and Lower Derwent.

Scrub
The importance of scrub communities for nature conservation is poorly researched, but recent commentators (Hopkins, 1996) have increasingly highlighted the value of these habitats for wildlife especially birds and invertebrates. Scrub can vary from relatively common, species-poor types through to species-rich or rare scrub types of great ecological interest. Between these extremes lie many intermediate scrub types where conservation judgements are finely balanced. Scrub can make a significant contribution to the value of a site through associated species, structural diversity and provide an extra dimension to the physical conditions by creating a more varied ecotone between habitats. Scrub is commonly perceived as a threat to more valued habitat such as unimproved grassland, especially acid and calcareous grassland types.

Common scrub communities in Derbyshire include those characterised by Hawthorn, Blackthorn, Bramble and Gorse sometimes with scattered Oak, Ash and Sycamore. They may occur in mosaics with other habitats or as homogeneous stands. Scrub can be an important associate habitat for birds such as Stonechat, Whinchat, Redstart, Spotted Flycatcher, Willow Warbler, Whitethroat, Grasshopper Warbler, Chiffchaff, Blackcap and Yellowhammer.

Hedgerow and Scrub Selection Guidelines
Sites that meet one or more of the following guidelines will be eligible for designation as a Local Wildlife Site.

H1 Hedgerows of at least 50m that fulfil one of the following:

- ***An ancient woodland 'ghost hedge' i.e. formerly part of an ancient woodland that has since been cleared.***
- ***Supports 3 or more veteran trees***
- ***Is on an old parish boundary and supports 5 or more woody native species, 3 or more of which must be frequent throughout.***
- ***Supports 7 or more woody native species, with at least 4 frequent throughout the hedge***

UKBAP Habitat Action Plan - Ancient and/or species-rich hedgerows

Application
This guideline should be applied to all hedgerows that are known not to have been planted in the last 30 years. The boundary of the site must include a buffer zone of at least 2 metres around the hedgerow.

Justification
Hedgerows originating from pre-Enclosure Acts are considered by the UK Habitat Action Plan for Hedgerows to be ancient hedgerows. Hedgerows are protected by the Hedgerow Regulations 1997 under section 97 of the Environment Act 1995. However, protection is not always sufficient since it is the way in which the hedgerow and the associated field margin (headland) is managed that is critical.

Sc1 Sites supporting 'retrogressive hazel scrub' over an area greater than 0.25ha.

Application
This guideline only applies to 'retrogressive Hazel scrub' found in the dales within the Peak District. Examples of this habitat may be present in White Peak outside of the Peak District National Park. This type of scrub usually occurs in a mosaic with other priority habitats, however, in some circumstance isolated patches may be present within relatively species poor grassland.

Justification
Retrogressive hazel scrub is thought to derive from ancient Ash woodland and consists mainly of Hazel and can have a rich associate flora of herbs and ferns. It is also favoured by bird species like Redstart, Song Thrush and Whitethroat.

Sc2 Scrub communities that include the following features: -

- ***At least three shrub species present***
- ***Complex three-dimensional structure with shrubs varying in height, canopy shape, age and spacing.***
- ***Clearings and sunny glades present within the scrub, giving a high boundary/area ratio.***
- ***A well-developed marginal zone which contains a range of rare, local or uncommon tall herbs and other grazing sensitive species not found in adjoining habitats***

Application
This guideline applies to any scrub community either occurring in a mosaic with other priority habitats or as more isolated patches within relatively species poor grassland or at the edge of woodland. Selection should consider the relative merits of the scrub habitat against any threat it may pose to habitats of value.

11.4 Traditional Orchards

Traditional orchards are defined by their habitat structure - open grown trees within grassland. This is both structurally and ecologically not dissimilar to wood- pasture and parkland, and in many respects traditional orchards resemble small wood-pasture, parkland or woodland edge habitat. But there are defining differences between these two broad habitat types, with traditional orchards having:

- A predominance of fruit trees
- Generally, a denser cover of trees
- A more frequent occurrence within the countryside and usually as smaller units compared to wood-pasture and parkland sites
- Management of trees for fruit production rather than for timber

The management of the herbaceous field layer beneath the trees is similar between these two habitat types with grazing and cutting of the grassland integral to both orchard and wood-pasture and parkland management.

Other similarities include the presence of scrub, formed mainly by boundary hedgerows or as shrubs amongst the trees (particularly in abandoned orchards). Ponds, often a feature in wood-pasture and parkland, are also often present. But it is the usually old trees and their importance

for wildlife where these two habitat types share the greatest similarity in terms of their biodiversity importance.

Unlike most trees in wood-pasture and parkland, fruit trees are relatively short- lived and as such they tend to exhibit features indicative of veteran trees at a relatively young age. Features include hollowed trunks and limbs, split trunks, rot holes and various tears. The resulting deadwood is then often present in well-lit, sunny conditions making the overall habitat excellent for many specialist deadwood invertebrate species. Survey work has recorded a very diverse deadwood invertebrate fauna which includes nationally rare and scarce species along with UK BAP Priority Species like the Noble Chafer *Gnorimus nobilis*, a wood-decay specialist beetle which is restricted almost entirely to traditional orchards.

Within individual orchards, the trees can sometimes support a high diversity of lichens, epiphytic bryophytes and deadwood fungi, adding greatly to the overall biodiversity. Orchards provide important nesting and feeding habitat for many species of bird, (Wedge & Robertson, 2007).

Other habitats within traditional orchards can be of some conservation significance. One example is the grassland. Long periods of sustained low intensity management of grasslands has, in some orchards, resulted in species rich grassland of sufficient diversity to be considered a UK BAP Priority Habitat (Lowland Meadow).

Traditional Orchards in Derbyshire

Prior to the recent inclusion of traditional orchards in the UK BAP Priority Habitats list there had been little attention paid to this habitat type within Derbyshire. An initial attempt to quantify the extent of traditional orchards in lowland Derbyshire has been undertaken by Derbyshire Wildlife Trust using desktop analysis of Ordnance Survey data and satellite imagery combined with a sampling 'ground truthing' field survey. The desktop results suggested that 474 traditional orchards occupying 100 ha remained, but the 'ground truthing' survey then found that only 65% of the sample of orchards surveyed on the ground remained intact. Ongoing work by the People's Trust for Endangered Species (PTES) to nationally map traditional orchards will eventually add to our current knowledge of the resource in Derbyshire.

In contrast to traditional orchards in other parts of the country where fruit production has historically formed an important component of land use, (i.e. Kent, Herefordshire, Cambridgeshire etc.) the orchards of lowland Derbyshire are generally very small, the largest being 1.2 ha. Historically they appear to be generally associated with larger country houses on estates and farmhouses rather than for commercial fruit production. Given their comparative small size, it is possible that the biodiversity interest associated with traditional orchards elsewhere in the UK may not be present within Derbyshire's remaining orchards, or their biodiversity interest might be very different but equally important. However, no detailed assessment of the specific biodiversity interest of the Derbyshire orchards has been undertaken.

Traditional Orchard Selection Guidelines

Sites that meet the following guideline will be eligible for designation as a Local Wildlife Site.

TO1 Any site which supports a traditional orchard, defined by the features listed below:

- ***50% of the trees should be domestic fruit or nut species***
- ***there must be at least 5 fruit trees which show features indicative of old age within the orchard area***

UKBAP Priority Habitat – Traditional Orchards

Application
Whilst the actual biodiversity interest of the lowland Derbyshire orchards is yet un-quantified the physical structure of the habitat can be defined. Following guidance within the UK BAP Priority habitat descriptions (UK BAP, 2007) and Natural England's 'Orchard Project' traditional orchards within Derbyshire can be defined by the qualifiers listed above.

Natural England suggest that in addition to a minimum of 5 trees being present their crown edges should be within 20m of each other. However, given that all the orchards likely to be considered by these guidelines are going to be very small, it is considered that this qualifier is of less relevance than if it were being applied to much larger orchards.
New orchards, or old orchard sites with less than 5 trees which have been replanted, if managed without the use of chemicals or inorganic fertilisers, would essentially still be considered a traditional orchard. However, until the trees reach a reasonable age and begin to exhibit features associated with veteran trees, it is unlikely that they would have sufficient biodiversity interest to warrant selection. It is possible that a young traditional orchard might contain species rich un-improved grassland or other features such as ponds. In these circumstances sites should be considered for selection under other habitat selection guidelines, (e.g. grassland and wetland).

Many traditional orchards now form part, or all the garden of residential properties. Where this is the case the overarching policy to not designate domestic gardens should be applied. For some sites, whether an orchard forms part of a garden or not might prove difficult to determine. In these cases, there may be a need to consult with local planning officers.

Justification
Recently there have been large declines in the total area of traditional orchards across the country. Concerns about the resulting loss in biodiversity have resulted in traditional orchards being made a UK BAP Priority Habitat.

11.5 Grassland

Grassland communities included under this set of habitat guidelines include traditionally managed meadows and pastures of lowland and upland situations on neutral, acid and calcareous soils. Also included are rush-pastures and mire communities that are closely associated with grasslands.

Grassland terminology

Grassland that has not been significantly altered by agricultural treatments, such as the application of inorganic fertilisers, herbicides, re-seeding and drainage is typically referred to as unimproved grassland. Where there has been a slight to moderate degree of agricultural improvement grassland is referred to as semi- improved. In many cases these semi-improved grasslands remain relatively species-rich retaining many of the characteristics of the unimproved grassland. Both types of grassland can be of significant nature conservation interest because they have evolved over long periods of time in conjunction with traditional pastoral practices. Collectively unimproved and semi-improved grassland can be referred to as semi-natural grassland.

Many species of plant and animal are associated with these grasslands but tend to disappear from more intensively managed grasslands.

Losses of unimproved grassland and current extent in Derbyshire

The decline in semi-natural grassland has been periodically documented over the past twenty years. Fuller (1987) estimated that in 1984 lowland grassland of conservation interest occupied just 3% of the area it formerly occupied in 1930 in England and Wales. English Nature (Jefferson & Robertson, 1996) estimate the total remaining extent of botanically interesting neutral, calcareous and acid grasslands in England to be between 45,000 and 57,000 hectares.

In lowland Derbyshire it is estimated that only 1500 - 2000 ha of botanically interesting grassland remains which represents an estimated loss of 80 – 95 % of semi-natural grassland since 1983 (Huston, 2001). In the Peak District National Park there has been a 50 % loss of flower rich hay meadows between the mid-1980s and 1995 – 97 (Buckingham & Chapman, 1997). Sheffield Wildlife Trust report a 75.5% loss in hay meadows and pastures between 1980 and 2001 (Jones & Eades, 2002).

The remaining areas of semi-natural grassland in the lowlands of Derbyshire are to be found predominantly in the Derbyshire Peak Fringe and Lower Derwent, the White Peak (outside of the Peak District National Park) and the northern part of the Nottinghamshire, Derbyshire & Yorkshire Coalfield. In the south and east of lowland Derbyshire semi-natural grassland has all but disappeared. Further north in High Peak there is an estimated 350 ha of semi-natural grassland distributed through White Peak, Southwest Peak, Dark Peak and the Manchester Pennine Fringe National Character Areas.

The remaining semi-natural grasslands are predominantly neutral to slightly acidic in character and include both meadows and pastures. However, calcareous grassland is to be found on the Carboniferous Limestone of the White Peak with small, isolated outliers in Derbyshire Peak Fringe, Trent Valley Washlands, Melbourne Parklands and to a much lesser degree the Magnesian Limestone in the east. Acid grassland is also present and is characteristic of the uplands on the Gritstone of the Dark Peak and Southwest Peak and also within the Derbyshire Peak Fringe and Lower Derwent National Character Area. Acid grasslands also occur within White Peak associated with the higher slopes of some dales, on north-facing dale-sides and along the tops

and ridges of the dales. It is also associated with spoil tips and former mineral workings at scattered locations throughout Derbyshire. Wet grassland can be found in floodplains, stream side 'water meadows', areas with impeded drainage, spring line flushes and the lower slopes of steep valleys and dales. Most wet grasslands are neutral in character.

In many cases elements of calcareous, neutral and acid floras can be present at a single site and can grade into one another forming an intimate grassland mosaic.

General application guidance

The boundaries of grassland Local Wildlife Sites should typically be determined by the existing borders of the field or common. Where only part of the area is of sufficient interest to meet the guideline/s it may be impractical to create artificial boundaries that may not be obvious on the ground to landowners and could make the implementation of any special management measures difficult. However, in some cases it may be necessary to define the area of interest possibly using contour lines or other physical features on the ground. Where a group of adjacent fields is surveyed each field will need to be assessed individually against the guidelines.

Grassland Selection Guidelines

Sites that meet one or more of the following guidelines will be eligible for designation as a Local Wildlife Site.

Gr1 Areas of semi-natural neutral and calcareous grasslands that support stands identified as one or more of the NVC community types listed below.

- ***MG1e False Oat-grass (Arrhenatherum elatius) grassland, Common Knapweed (Centaurea nigra) sub-community.***
- ***MG2 False Oat-grass (Arrhenatherum elatius) - Meadowsweet (Filipendula ulmaria) tall-herb grassland (all sub-communities)***
- ***MG4 Meadow Fox-tail (Alopecurus pratensis) – Great Burnet (Sanguisorba officinalis) grassland***
- ***MG5 Crested Dog's-tail (Cynosurus cristatus)- Common Knapweed (Centaurea nigra) grassland (all sub-communities)***
- ***MG8 Crested Dog's-tail (Cynosurus cristatus) – Marsh Marigold (Caltha palustris) grassland.***
- ***CG2 Sheep's Fescue (Festuca ovina) – Meadow Oat-grass (Avenula pratensis) grassland – all sub-communities.***
- ***CG3 Upright Brome (Bromus erectus) grassland.***
- ***CG4 Heath False-brome (Brachypodium pinnatum) grassland.***
- ***CG5 Upright Brome (Bromus erectus) – Tor Grass (Brachypodium pinnatum) grassland.***
- ***CG7 Sheep's Fescue (Festuca ovina) – Mouse-ear Hawkweed (Hieracium pilosella) – Wild Thyme (Thymus praecox/pulegiodes) grassland.***

UKBAP Habitat Action Plans – Lowland Meadows & Upland Hay Meadows, Lowland Calcareous Grassland, Coastal and Floodplain Grazing Marsh.

Application
This guideline will be applied to areas of semi-natural grassland that have been identified as supporting the NVC communities listed above. Classification of the community should be based on field assessment by a competent surveyor. The guideline can be applied to sites of any size.

Justification
These grassland communities represent some of the rarest and most threatened grassland types in the UK and Derbyshire. The presence of these communities also indicates that the grassland has not been improved through intensive agricultural management. Consequently, these grasslands support a rich diversity of flowering plants, some of which are restricted to these habitats. Many of these grassland communities are now restricted to small areas but often continue to support rare or localised species.

Vegetation stands, such as roadside verges, which are not within agricultural units often support similar grassland communities that can be of considerable nature conservation value.

Gr2 Areas of semi-natural grassland including grassland mosaics that score the following values from the plant species within Table 2:

a) 10 or more if in the following National Character Areas

- ***South West Peak***
- ***Dark Peak***
- ***Manchester Pennine Fringe***
- ***White Peak,***
- ***Derbyshire Peak Fringe & Lower Derwent,***
- ***Yorkshire & South Pennine Fringe***
- ***South Magnesian Limestone***

b) 8 or more if in the following National Character Areas or in the Derby area:

- ***Needwood and South Derbyshire Claylands***
- ***Potteries and Churnet Valley***
- ***Mease/Sence Lowlands***
- ***Melbourne Parklands***
- ***Trent Valley Washlands***
- ***Leicestershire & South Derbyshire Coalfield***
- ***Nottinghamshire, Derbyshire & Yorkshire Coalfield***

UKBAP Habitat Action Plans – Lowland Meadows, Upland Hay Meadows, Lowland Calcareous Grassland, Coastal and Floodplain Grazing Marsh.

Application
The species listed in Table 2 include both common and widespread species and more local or rare species that are characteristic or confined to species-rich semi-natural grasslands. It includes species of neutral, calcareous and wet grassland (including flushes) and good examples of these grassland types, either singly or in combination can be identified using this table. For all areas, except the Derby area, the species concerned should be at least occasional or locally frequent over a significant part of the site. Localised areas of interest that can be

reasonably defined can also be considered. Sites which support the required number of grassland plant species, but where a high proportion of those species are rare within the site or restricted to non-typical patches or the edges of the site should not normally be included. Within the Derby area the presence of the indicator species is sufficient regardless of their abundance across the site.

Justification
Ancient species-rich semi-natural grasslands are an important part of Derbyshire's critical natural capital, which is difficult or impossible to replace once destroyed. The southern and eastern National Character Areas have been subject to widespread agricultural intensification and/or mining activities resulting in very high losses of unimproved grassland community types. In some areas only a very few patches of semi-natural grassland remain. In recognition of this a lower threshold score of 8 has been selected for these National Character Areas and for sites within the Derby area.

Gr3 Areas of semi-natural acid grassland (as defined by the NVC) that score 8 or more from the grassland plant species list in Table 2.

UKBAP Habitat Action Plan – Lowland Dry Acid Grassland

Application
This guideline is applicable to any area of acidic grassland, irrespective of origin. These communities may occur in association with lowland heath and mire habitats. The guideline can be applied to sites of any size.

Justification
Acid grassland has also declined considerably in recent years, and good examples of acid grassland communities are now very scarce in lowland Derbyshire and becoming less common elsewhere.

Gr4 Areas of semi-natural grassland that have arisen within post- industrial sites that are at least 0.25 ha in size and score the following values from the plant species within Table 2:

a) 10 or more if in the following National Character Areas

- ***Southwest Peak***
- ***Dark Peak***
- ***Manchester Pennine Fringe***

- *White Peak,*
- *Derbyshire Peak Fringe & Lower Derwent*
- *Yorkshire & South Pennine Fringe*
- *South Magnesian Limestone*

b) 8 or more if in the following National Character Areas or in the Derby area:

- *Needwood and South Derbyshire Claylands*
- *Potteries and Churnet Valley*
- *Mease/Sence Lowlands*
- *Melbourne Parklands*
- *Trent Valley Washlands*
- *Leicestershire & South Derbyshire Coalfield*
- *Nottinghamshire, Derbyshire & Yorkshire Coalfield*

UKBAP Habitat Action Plans – Lowland Meadows & Upland Hay Meadows, Lowland Calcareous Grassland, Coastal and Floodplain Grazing Marsh.

Application
This guideline can be applied to grassland communities that occur on post-industrial sites. These grasslands have often arisen over the past 30 years on nutrient poor or mildly toxic substrates such as quarry or mining waste, exposed rock surfaces or overburden. The community composition tends to include a variety of characteristic grassland plant species and ephemeral species such as annual grasses.

Justification
Some grasslands of relatively recent origin within post-industrial sites have attained quite high botanical diversity and often provide a refuge for many grassland species that have declined in the wider countryside due to agricultural change. These sites can make a significant contribution to the grassland resource of an area and to biodiversity overall. Often there can be a mosaic of acid, neutral and calcareous grassland communities especially where there are gradients in slope, transitions from one geological type to another and a variety of hydrological conditions. These grasslands can be extremely valuable and diverse, but also atypical. This guideline is intended to ensure such sites are not undervalued.

Gr5 Areas of created grassland that score 10 or more from the grassland plant species list in Table 2

Application
This guideline can only be applied to created grasslands (created through the addition of seed mixes, plug plants or green hay) that have been established for five years or more and are in positive management. The indicator species should be well distributed across the site and indicator diversity within a minimum of 10 randomly placed 2 x 2m quadrats should average at least 4 indicator species per quadrat.

Justification
Created grassland sites now play an important role in re-establishing wildflowers in the countryside and can quickly support a thriving associated fauna of invertebrates, fungi, small mammals and birds.

Table 2. Vascular Plant species of semi-natural grasslands in Derbyshire
Scoring
All species score 1 except for those species in bold (Derbyshire Vascular Plant Red Data List Species - 2009) which score 2.

Table 2. Vascular Plant Species	
Scientific Name	**Common Name**
Achillea ptarmica	Sneezewort
Agrimonia eupatoria	Agrimony
Agrimonia procera	**Fragrant Agrimony**
Agrostis canina	Velvet Bent
Agrostis vinealis	Brown Bent
Aira praecox	Early Hair-grass
Ajuga reptans	Bugle
Alchemilla filicaulis	Lady's Mantle
Alchemilla filicaulis ssp, vestita	Lady's Mantle
Alchemilla glabra	Lady's Mantle
Alchemilla xanthochlora	Lady's Mantle
Allium oleraceum	Field Garlic
Allium scorodoprasum	**Sand Leek**
Alopecurus aequalis	**Orange Foxtail**
Anacamptis morio	**Green-winged Orchid**
Anacamptis pyramidalis	Pyramidal Orchid
Anemone nemorosa	Wood Anemone
Angelica sylvestris	Wild Angelica
Antennaria dioica	**Mountain everlasting**
Anthyllis vulneraria	Kidney Vetch
Aphanes australis	Slender Parsley-piert
Aquilegia vulgaris	Columbine
Arabis hirsuta	Hairy Rock-cress
Arenaria serpyllifolia	Thyme-leaved Sandwort
Astragalus glycyphllylos	Wild Liquorice
Betonica officinalis	Betony
Blackstonia perfoliata	Yellow-wort
Blysmus compressus	**Flat Sedge**
Botrychium lunaria	Moonwort

Table 2. Vascular Plant Species	
Scientific Name	**Common Name**
Briza media	Quaking Grass
Bromopsis erectus	Upright Brome
Bromus racemosus	Smooth Brome
Calluna vulgaris	Heather
Caltha palustris	Marsh Marigold
Campanula glomerata	Clustered Bellflower
Campanula rotundifolia	Harebell
Cardamine pratensis	Cuckoo Flower
Carduus nutans	Musk Thistle
Carex acutiformis	Lesser Pond-sedge
Carex binervis	Green-ribbed sedge
Carex caryophyllea	Spring Sedge
Carex demissa	Common Yellow Sedge
Carex disticha	**Brown Sedge**
Carex echinata	Star Sedge
Carex ericetorum	Rare Spring-sedge
Carex flacca	Glaucous Sedge
Carex hostiana	**Tawny Sedge**
Carex laevigata	Smooth-stalked Sedge
Carex leporina	Oval Sedge
Carex montana	**Soft-leaved Sedge**
Carex muricata ssp. lamprocarpa	**Prickly Sedge**
Carex nigra	Common Sedge
Carex panicea	Carnation Sedge
Carex pilulifera	Pill Sedge
Carex pulicaris	Flea Sedge
Carex spicata	Spiked Sedge
Carlina vulgaris	Carline Thistle
Catapodium rigidum	Fern Grass
Centaurea nigra	Common Knapweed
Centaurea scabiosa	Greater Knapweed
Centaurium erythraea	Common Centaury
Cerastium arvense	Field Mouse-ear
Cirsium acaule	Dwarf Thistle
Cirsium dissectum	**Meadow Thistle**
Cirsium eriophorum	Woolly Thistle
Cirsium heterophyllum	Melancholy Thistle
Clinopodium acinos	**Basil Thyme**
Clinopodium vulgare	Wild Basil
Coeloglossum viride	**Frog Orchid**

Table 2. Vascular Plant Species	
Scientific Name	**Common Name**
Colchicum autumnale	**Meadow Saffron**
Conopodium majus	Pignut
Crepis capillaris	Smooth Hawk's-beard
Crepis paludosa	Marsh Hawk's-beard
Dactylorhiza fuchsii	Common Spotted-orchid
Dactylorhiza hybrids	Hybrid orchids
Dactylorhiza incarnata	**Early Marsh-orchid**
Dactylorhiza maculata	Heath-spotted-orchid
Dactylorhiza praetermissa	Southern Marsh-orchid
Dactylorhiza purpurella	Northern Marsh-orchid
Danthonia decumbens	Heath-grass
Daucus carota	Wild Carrot
Deschampsia flexuosa	Wavy Hair-grass
Dianthus deltoides	**Maiden Pink**
Digitalis purpurea	Foxglove
Eleocharis palustris	Common Spike-rush
Epilobium palustre	Marsh Willowherb
Epilobium parviflorum	Hoary Willowherb
Epipactis atrorubens	**Dark-red Helleborine**
Epipactis palustris	**Marsh Helleborine**
Equisetum palustre	Marsh Horsetail
Equisetum sylvaticum	Wood Horsetail
Erica cinerea	Bell-heather
Erica tetralix	Cross-leaved Heather
Erigeron acris	Blue Fleabane
Erodium cicutarium	Common Stork's-bill
Eupatorium cannabinum	Hemp-agrimony
Euphrasia anglica	**Eyebright**
Euphrasia confusa	Eyebright
Euphrasia nemorosa	Eyebright
Euphrasia officinalis ssp. pratensis	**Eyebright**
Festuca ovina	Sheep's fescue
Ficaria verna	Lesser Celandine
Filago vulgaris	**Common Cudweed**
Filipendula ulmaria	Meadowsweet
Filipendula vulgaris	Dropwort
Fragaria vesca	Wild Strawberry
Galeopsis angustifolia	**Red Hemp-nettle**
Galium cruciata	Crosswort
Galium palustre	Common Marsh-bedstraw

Table 2. Vascular Plant Species	
Scientific Name	**Common Name**
Galium saxatile	Heath Bedstraw
Galium sterneri	Limestone Bedstraw
Galium uliginosum	**Fen Bedstraw**
Galium verum	Lady's Bedstraw
Genista anglica	**Petty Whin**
Genista tinctoria	**Dyer's Greenweed**
Gentianella amarella	Autumn Gentian
Gentianella campestris	**Field Gentian**
Geranium columbinum	Long-stalked Crane's-bill
Geranium pratense	Meadow Crane's-bill
Geranium pusillum	Small-flowered Crane's-bill
Geranium sanguineum	Bloody Crane's-bill
Geum rivale	Water Avens
Gnaphalium sylvaticum	**Heath Cudweed**
Gymnadenia conopsea	Fragrant Orchid
Helianthemum nummularium	Common Rock-rose
Helictotrichon pratensis	Meadow Oat-grass
Helictotrichon pubescens	Downy Oat-grass
Hieracium spp.	any Hawkweed
Hippocrepis comosa	**Horseshoe Vetch**
Hordeum secalinum	Meadow Barley
Hyacinthoides non-scripta	Bluebell
Hydrocotyl vulgaris	Marsh Pennywort
Hypericum hirsutum	Hairy St John's-wort
Hypericum humifusum	Trailing St John's-wort
Hypericum maculatum	Imperforate St John's-wort
Hypericum montanum	**Pale St John's-wort**
Hypericum perforatum	Perforate St John's-wort
Hypericum pulchrum	Slender St John's-wort
Hypericum tetrapterum	Square-stalked St John's-wort
Hypochaeris radicata	Cat's-ear
Inula conyzae	Ploughman's Spikenard
Isolepis setacea	Bristle Club-rush
Jasione montana	**Sheep's-bit**
Juncus acutiflorus	Sharp-flowered Rush
Juncus bulbosus	Bulbous Rush
Juncus compressus	**Round-fruited Rush**
Juncus squarrosus	Heath Rush
Juniperus communis	**Juniper**
Knautia arvensis	Field Scabious

Table 2. Vascular Plant Species	
Scientific Name	**Common Name**
Koeleria macrantha	Crested Hair-grass
Lathyrus linifolius var. montana	Bitter Vetch
Lathyrus nissolia	**Grass Vetchling**
Lathyrus pratensis	Meadow Vetchling
Leontodon hispidus	Rough Hawkbit
Leontodon saxatilis	**Lesser Hawkbit**
Leucanthemum vulgare	Oxeye Daisy
Linum catharticum	Fairy Flax
Lotus corniculatus	Common Bird's-foot-trefoil
Lotus pedunculatus	Large Bird's-foot-trefoil
Lotus tenuis	**Narrow-leaved Bird's-foot-trefoil**
Luzula campestris	Field Wood-rush
Luzula mulitiflora	Heath Wood-rush
Lysimachia nummularia	Creeping Jenny
Malva moschata	Musk Mallow
Medicago lupulina	Black Medick
Mentha aquatica	Water Mint
Molinea caerulea	Purple Moor-grass
Myosotis discolor	Changing Forget-me-not
Myosotis ramosissima	Early Forget-me-not
Myosotis scorpiodes	Water Forget-me-not
Myosotis secunda	Creeping Forget-me-not
Narcissus pseudonarcissus	Daffodil
Nardus stricta	Mat-grass
Neotina ustulata	**Burnt Orchid**
Neottia ovata	Common Twayblade
Ononis repens	Common Restharrow
Ononis spinosa	**Spiny Restharrow**
Ophioglossum vulgatum	Adder's-tongue Fern
Ophrys apifera	Bee Orchid
Ophrys insectifera	**Fly Orchid**
Orchis mascula	Early Purple Orchid
Origanum vulgare	Marjoram
Ornithopus perpusillus	**Bird's-foot**
Parnassia palustris	Grass-of-Parnassus
Pedicularis sylvatica	Lousewort
Persicaria bistorta	Common Bistort
Phleum bertolonii	Smaller Cat's-tail
Picris hieracioides	Hawkweed Oxtongue
Pilosella officinarum	Mouse-ear Hawkweed

Table 2. Vascular Plant Species	
Scientific Name	**Common Name**
Pimpinella major	Greater Burnet-saxifrage
Pimpinella saxifraga	Burnet-saxifrage
Plantago media	Hoary Plantain
Platanthera chlorantha	**Greater Butterfly Orchid**
Poa compressa	Flattened Meadow-grass
Poa humilis	Spreading Meadow-grass
Polemonium caeruleum	Jacob's-ladder
Polygala serpyllifolia	Heath Milkwort
Polygala vulgaris	Common Milkwort
Potentilla anglica	Trailing Tormentil
Potentilla anserina	Silverweed
Potentilla argentea	**Hoary Cinquefoil**
Potentilla crantzii	**Alpine Cinquefoil**
Potentilla erecta	Tormentil
Potentilla neumanniana	**Spring Cinquefoil**
Potentilla reptans	Creeping Cinquefoil
Potentilla sterilis	Barren Strawberry
Poterium sanguisorba	Salad Burnet
Primula veris	Cowslip
Primula vulgaris	Primrose
Prunella vulgaris	Selfheal
Pulicaria dysenterica	Common Fleabane
Ranunculus bulbosus	Bulbous Buttercup
Ranunculus flammula	Lesser Spearwort
Rhinanthus minor	Hay Rattle
Rumex acetosella	Sheep's sorrel
Sagina nodosa	Knotted Pearlwort
Sanguisorba officinalis	Great Burnet
Saxifraga granulata	Meadow Saxifrage
Saxifraga tridactylites	Rue-leaved saxifrage
Scabiosa columbaria	Small Scabious
Scorzoneroides autumnalis	Autumn Hawkbit
Scuttellaria galericulata	Skullcap
Sedum acre	Biting Stonecrop
Sedum anglicum	English Stonecrop
Senecio aquaticus	Marsh Ragwort
Senecio erucifolius	Hoary Ragwort
Serratula tinctoria	Saw-wort
Silaum silaus	**Pepper-saxifrage**
Silene flos-cuculi	Ragged Robin

Table 2. Vascular Plant Species	
Scientific Name	**Common Name**
Solidago virgaurea	Goldenrod
Stachys palustris	Marsh Woundwort
Stellaria alsine	Bog Stitchwort
Stellaria graminea	Lesser Stitchwort
Stellaria palustris	**Marsh Stitchwort**
Succissa pratensis	Devil's-bit Scabious
Teucrium scorodonia	Wood Sage
Thalictrum flavum	**Common Meadow-rue**
Thalictrum minus	Lesser Meadow-rue
Thymus polytrichus	Wild Thyme
Tragopogon pratensis	Goat's-beard
Trifolium arvense	Hare's-foot Clover
Trifolium campestre	Hop Trefoil
Trifolium medium	Zigzag Clover
Trifolium micranthum	Slender Trefoil
Trifolium striatum	Knotted Clover
Trifolium subterranean	**Subterranean Clover**
Triglochin palustris	Marsh Arrowgrass
Trisetum flavescens	Yellow Oat Grass
Trollius europaeus	**Globe Flower**
Vaccinium myrtillus	Bilberry
Valeriana officinalis	Common Valerian
Veronica chamaedrys	Germander Speedwell
Veronica officinalis	Heath Speedwell
Veronica scutellata	**Marsh Speedwell**
Vicia cracca	Tufted Vetch
Vicia sativa ssp. sativa	Common Vetch
Vicia sativa subsp. nigra	Narrow-leaved Vetch
Viola canina	Heath Dog-violet
Viola hirta	Hairy Violet
Viola lutea	Mountain Pansy
Viola reichenbachiana	Early Dog-violet
Viola riviniana	Common Dog-violet

11.6 Lead Rakes and Lead Spoil Heaps

Centuries of mining the mineral veins in the White Peak (and to a lesser degree the Derbyshire Peak Fringe) have resulted in a distinctive landscape of hillocks and hollows referred to by the Peak District Biodiversity Action Plan (Peak District Biodiversity Partnership, 2011) as lead rakes. Lead rakes support a complex mosaic of vegetation types reflecting their great range of topography and the varied nature of waste material. The toxic nature of some of the lead rake

material results in unique 'metallophyte' vegetation communities (metal tolerant) which are internationally important.

Lead Rake Selection Guideline
Sites that meet one or more of the following guidelines will be eligible for designation as a Local Wildlife Site.

LeRa1 Lead rakes and spoil heaps supporting semi-natural grassland vegetation communities including elements of open vegetation referable to the NVC community: -

OV37 Sheep's Fescue (*Festuca ovina*) – Spring Sandwort (*Minuartia verna*) community.

UKBAP Habitat Action Plans – Lowland Meadows and Upland Hay Meadows, Lowland Dry Acid Grassland, Lowland Calcareous Grassland, Calaminarian Grasslands.

Application
This guideline can be applied to vegetation associated with former lead mine workings in White Peak or rarely Derbyshire Peak Fringe and Lower Derwent. The grassland communities should be agriculturally unimproved and usually there will be an element of open vegetation referable to the OV37 NVC community. Typically, this community is found in mosaics with other grassland types including calcareous, acid or neutral communities and rarely heathland.

Justification
This community is a local community restricted to the spoil heaps or outcrops of veins of heavy metals among calcareous bedrocks around the upland fringes of northern and western Britain. It is especially associated with the Carboniferous Limestone of the Derbyshire Dales in the White Peak. The community has declined by 50% this century in the Peak District.

11.7 Heathland, Blanket Bogs & Mires

Heathland vegetation occurs on acidic mineral soils and thin peats (<0.5 m deep) and is characterised by the presence of plants such as heathers and dwarf gorses. Lowland heathland generally occurs below 300m and is limited in its distribution and extent in Derbyshire. Upland heathland generally occurs above 30m and is far more extensive occurring widely in the Peak District. Blanket bog occurs where peat layers are deeper (> 0.5 m deep) and is characterised by a mixture of Heather, Cross-leaved Heath, Cottongrass, Deergrass and bog mosses (Sphagnum species). Mires are closely related and often these habitats comprise a complex series of inter-related vegetation communities occurring along gradients or in mosaics. Other mire habitats are characterised by rushes and are more likely to occur in association with grassland vegetation stands. For some heathland sites the wildlife value is related to size and small sites may be of limited interest, but where wet heath and/or moorland flushes are present the botanical and invertebrate interest may be high. Lowland mire communities in Derbyshire are typically small and restricted in distribution, generally occurring below 300m. There is a far greater range of upland mire communities, which generally occur above 300m, and several are relatively

widespread. Most of the upland mire communities are within the Peak District National Park and therefore not covered by these guidelines. However, High Peak outside the Park may support examples of some of these mire communities.

Application (all heathland and mire guidelines)
These habitats are of recognised international and national importance for their flora and fauna. Whilst most of the larger stands of these vegetation types have already been included within SSSIs and SPAs, smaller areas have sometimes been excluded. Much of the heathland, blanket bog and mire habitat that remains outside the National Park is in small areas often in a matrix of acid grassland and should be assessed accordingly. The presence of breeding populations of waders or significant assemblages of
invertebrates or other faunal interest should be assessed according to the Species Guidelines.

Justification (all heathland and mire guidelines)
These habitats are of great value and interest for their flora and fauna, and even small stands may support excellent examples of the habitat types or provide a home for breeding birds, mammals and/or invertebrates. Lowland heathland is very rare and any stands, however small, may have nature conservation value.

Heathland and Mires Selection Guidelines
Sites that meet one or more of the following guidelines will be eligible for designation as a Local Wildlife Site.

HM1 Areas in which the vegetation is dominated by assemblages of dwarf shrubs (Calluna vulgaris and/or Erica cinerea and/or Erica tetralix) and/or Vaccinium myrtillus (Bilberry), Empetrum nigrum (Crowberry) and Vaccinium vitis-idaea (Cowberry).

UKBAP Habitat Action Plan – Upland Heathland

Application
This guideline should be applied to any site supporting lowland heathland or upland heathland.

Justification
Small areas of heathland vegetation along road verges and in the corner of fields and post-industrial sites like disused railway lines may still be of value and interest despite being potentially small and fragmented.

HM2 Areas of blanket bog, typically referable to the NVC types listed below:

- ***M1, M2, M3, M15, M17, M18, M19 and M20 and M25***

UKBAP Habitat Action Plan – Blanket Bog

Application
Small areas of blanket bog and mire may occur on the fringes of the Peak District National Park in High Peak, Derbyshire Dales and North-east Derbyshire. Any area of blanket bog found on the fringes of the National Park can be considered under this guideline.

Justification
There is little detailed information on the extent of these vegetation communities outside of the National Park boundary. It is likely that only small examples are present, but they may still be of substantial ecological interest within their locality.

HM3 Upland (above 300m) areas that support vegetation referable to or characteristic of the NVC mire communities listed below;

- ***M4 Bottle Sedge (Carex rostrata) – Sphagnum recurvum mire.***
- ***M6 Star sedge (Carex echinata) - Sphagnum recurvum/auriculatum mire.***
- ***M9 Bottle Sedge (Carex rostrata) – Calliergon cuspidatum/giganteum***
- ***mire***
- ***M10 Dioecious sedge (Carex dioica) - Common Butterwort (Pinguicula vulgris) mire***
- ***M21b Bog Asphodel (Narthecium ossifragum) – Sphagnum papillosum***
- ***valley mire***
- ***M22 Blunt-flowered Rush (Juncus subnodulosus) – Marsh Thistle (Cirsium palustre) fen-meadow.***
- ***M26b Purple Moor-grass (Molinia caerulea) – Marsh Hawk's-beard (Crepis paludosa) mire, Red Fescue (Festuca rubra) sub-community.***
- ***M32 Philonotis fontana – Saxifraga stellaris spring.***
- ***M35 Round-leaved Crowfoot (Ranunculus omiophyllus) - Blinks (Montia fontana) rills.***
- ***M37 Cratoneuron commutatum- Festuca rubra (Red Fescue) spring.***

UKBAP Habitat Action Plans –Lowland Fens, Purple Moor Grass and Rush Pastures
LDBAP – Generic Action Plan
PDBAP – Rush Pasture, Heather Moorland, Blanket Bog, River Corridor Habitats

Application
This guideline should be applied to upland mire communities found in High Peak outside the Peak District National Park. These sites should be evaluated in relation to the extent of the habitat within the Peak District National Park. Other NVC mire communities may be present in the area covered by the guidelines and if identified should be assessed in relation to their known conservation interest and value.

Justification
The extent and distribution of these communities in this area is not known in any detail. It is probable that they are relatively rare, but some rush-pasture and wet heath communities may occur more frequently.

HM4 Upland (above 300m) areas that support vegetation referable to or characteristic of the following NVC communities and that include 10 or more plant species listed in Table 3:

- ***M23b Soft-rush-Common Marsh-bedstraw rush-pasture.***
- ***M23a Sharp-flowered Rush- Common Marsh-bedstraw rush-pasture.***

UKBAP Habitat Action Plan – Purple Moor Grass and Rush Pasture

Application
This type of rush-pasture is present both as discrete stands of vegetation but also in transitions with wet rush dominated grassland and unimproved grassland communities. In some cases, the wet grassland guideline may be more appropriate, but where the community is a reasonably good fit for the NVC M23 or M25 community this guideline should be used. Sites supporting this community should be assessed in terms of their overall ecological attributes. Plant diversity should be considered for the site.

Justification
These types of rush-pasture often occur in mosaics with other habitats especially grasslands. They are a distinctive semi-natural vegetation community and can be relatively species rich both in terms of plants, invertebrates, mammals and birds.

HM 5
(a) Lowland (below 300m) areas that support a mire community referable to any listed in the NVC
or
(b) Vegetation scoring 10 or more from the species listed in Table 3.

UKBAP Habitat Action Plans – Lowland Fens, Wet Woodland, Coastal and Floodplain Grazing Marsh

Application
This guideline can be applied to all sites supporting lowland mire communities. Very degraded sites should be excluded.

Justification
Lowland mires are very rare and any sites supporting such vegetation may be of nature conservation significance. They should be assessed in terms of the site and community attributes listed above.

11.8 Swamps, Reedbeds and Tall-herb Fens

Swamp and reedbeds are generally dominated by bulky grasses and sedges and are often quite species-poor. They are characteristic of extensively flooded but stable sites around (typically) freshwater. They often form transitional vegetation communities between open water and grassland, moorland or various types of woodland habitat. They are fed mainly from groundwater sources and occur on the margins of both standing waters in natural lakes and pools and around artificial water bodies including ponds, canals, stagnant dykes and some reservoirs, and also alongside moving waters in the wetter parts of flood-plain as well as valley bottoms and flushes and in the shallows along rivers and streams. Of the 21 communities identified in the NVC many have a scattered but widespread distribution throughout lowland England and Wales and at least 15 are thought to occur in Derbyshire but these are typically scattered, often quite small and generally poorly recorded.

Reedbeds are botanically species poor fens dominated by large dense stands of Common Reed, Phragmites australis, but can have areas of open water, ditches, wet grassland and wet woodland. The water table must be at or above ground level most of the year for this vegetation community to be maintained. Reedbeds are one of the most important habitats for breeding birds in the UK.

Derbyshire has no large reedbeds but has smaller localised patches in the Trent Valley Washlands and 'Coalfield' National Character Areas that are valuable for local bird and invertebrate populations and birds migrating along river valleys.

An important community often associated with swamps and reedbeds is the NVC S23 other water-margin vegetation community. This is typically formed by a heterogeneous assemblage of water margin plants and therefore not easily defined but with a highly distinctive structure. Away from running waters this vegetation is often present fringing, and sometimes intergrading with, stands of swamp and reedbed.

Tall-herb fen vegetation communities tend to be more diverse and together with the bulky grass and sedge species there are often bulky herbaceous plants and an understorey of smaller herbaceous species. They occur in seasonally or periodically flooded topogeneous mires adjacent to fresh waters especially in the shallows of open-water transitions and flood plain mires but also in some basin mires. They are predominantly lowland in distribution. In Derbyshire 3 (possibly 4) of the 5 communities identified by the NVC are thought to occur. Though again, like the swamps and reedbeds, they are typically small scattered and poorly recorded.

Swamps, reedbeds and tall-herb fens Selection Guidelines
Sites that meet one or more of the following guidelines will be eligible for designation as a Local Wildlife Site.

We1 Swamps, reedbeds and tall-herb fens occurring either as single stands > 1 ha or mosaics > 1 ha referable to any NVC community listed below: -

S4 Common Reed (Phragmites australis) swamp and reedbeds
S5 Reed Sweet Grass (Glyceria maxima) swamp
S6 Greater Pond Sedge (Carex riparia) swamp
S7 Lesser Pond Sedge (Carex acutiformis) swamp
S8 Common Club-rush (Schoenoplectus lacustris) swamp
S9 Bottle Sedge (Carex rostrata) swamp
S10 Water Horsetail (Equisetum fluviatile) swamp
S12 Common Reedmace (Typha latifolia) swamp
S13 Lesser Bulrush (Typha angustifolia) swamp
S14 Branched Bur-reed (Sparganium erectum) swamp
S16 Arrowhead (Sagittaria sagittifolia) swamp
S17 Cyperus Sedge (Carex pseudocyperus) swamp
S19 Common Spike-rush (Eleocharis palustris) swamp
S20 Grey Club-rush (Schoenoplectus tabernaemontani) swamp
S22 Floating Sweet Grass (Glyceria fluitans) swamp
S23 Other water-margin vegetation
S25 Common Reed (Phragmites australis) – Hemp-agrimony (Eupatorium cannabinum) tall-herb fen
S26 Common Reed (Phragmites australis) – Common Nettle (Urtica dioica) tall herb fen
S27 Bottle Sedge (Carex rostrata) – Marsh Cinquefoil (Potentilla palustris) tall-herb fen
S28 Reed Canary Grass (Phalaris arundinacea) tall herb fen

UKBAP Habitat Action Plans – Lowland Fens, Reedbeds

Application
This guideline should be applied to all swamp, reedbed and tall-herb fen sites that are over 1ha in size and either consist of a single vegetation community type (as listed above) or a combination of community types from the list above.

Justification
Though widespread, swamps and tall-herb fens are typically small and fragmented in Derbyshire, whilst reedbeds are relatively uncommon. Many sites supporting these vegetation communities have disappeared due to drainage and agricultural improvements to land. Any sites meeting the guideline are therefore of significant nature conservation value. The excluded NVC types are generally of less nature conservation interest and in some cases can be more easily re- created. Some sites will be of greater interest and will be considered on the full range of ecological attributes, but in general they should not automatically be considered for Local Wildlife Site selection.

We2 Swamps and tall-herb fens smaller than 1 ha will be considered where they score at least 8 from Table 3 AND meet one or more of the following: -

- ***The site is part of a series of swamp, reed-bed or tall herb habitats along a watercourse***
- ***the site is part of a hydrosere of vegetation types***

UKBAP Habitat Action Plans – Fens, Reedbeds

Application
This guideline can be applied to any site that is smaller than 1 ha.

Justification
The extent of most of these community types is not known and most sites are now isolated and small. Consideration will therefore be given to any site supporting these habitats and selection based on the factors outlined above.

We3 Vegetation communities characteristic of open wetland habitats will be considered where they score at least 8 from Table 3 AND meet one or more of the following: -

- ***the site is part of a series of wetland vegetation types or habitats along a watercourse***
- ***the site is part of a hydrosere of vegetation types***

UKBAP Habitat Action Plans – Lowland Fens, Reedbeds

Application
The guideline should be applied to sites that are dominated by vegetation characteristic of open, disturbed habitats in wetland situations, like periodically inundated ground, ephemeral ponds and drawdown zones by standing water, rather than other wetland vegetation types. Sites under 0.5 ha should be assessed by the selection panel in relation to their wider role in the locality.

Justification
Vegetation communities of open wetland habitats are widespread and often occur in mosaics or ecotone with swamps, fens and wet grassland. They can form distinctive and important wetland communities in Derbyshire and support a diversity of faunal groups most notably invertebrates.

Table 3. Plants of mires, swamps, reedbeds and tall-herb fens and vegetation communities of open wetland habitats
Scoring
All species score 1 except for those species in bold (Derbyshire Vascular Plant Red Data List Species - 2009) which score 2

Table 3. Plants of mire, swamps, reedbeds and tall-herb ferns	
Scientific Name	**Common Name**
Achillea ptarmica	Sneezewort

Table 3. Plants of mire, swamps, reedbeds and tall-herb ferns	
Scientific Name	**Common Name**
Ajuga reptans	Bugle
Anagallis tenella	Bog Pimpernel
Angelica sylvestris	Wild Angelica
Athyrium filix-femina	Lady-fern
Berula erecta	Lesser Water-parsnip
Blysmus compressus	Flat Sedge
Caltha palustris	Marsh Marigold
Cardamine pratensis	Cuckooflower
Carex spp.	any sedge
Cirsium dissectum	Meadow Thistle
Comarum palustre	Marsh Cinquefoil
Dactylorhiza incarnata	Early Marsh-orchid
Eleocharis spp.	Spike-rushes
Epilobium hirsutum	Great Willowherb
Epilobium palustre	Marsh Willowherb
Epilobium parviflorum	Hoary Willowherb
Epipactis palustris	Marsh Helleborine
Equisetum fluviatile	Water Horsetail
Equisetum palustre	Marsh Horsetail
Equisetum telmateia	Giant Horsetail
Eriophorum latifolium	Broad-leaved Cotton Grass
Eriophorum spp.	any other Cotton Grass
Eupatorium cannabinum	Hemp-agrimony
Filipendula ulmaria	Meadowsweet
Galium palustre	Common Marsh-bedstraw
Galium uliginosum	Fen Bedstraw
Geranium pratense	Meadow Crane's-bill
Geum rivale	Water Avens
Hydrocotyle vulgaris	Marsh Pennywort
Hypericum tetrapterum	Square-stalked St John's-wort
Iris pseudacorus	Yellow Flag
Isolepis setacea	Bristle Club-rush
Juncus compressus	Round-fruited Rush
Juncus subnodulosus	Blunt-flowered Rush
Lathyrus montanus	Bitter Vetch
Leontodon saxatilis	Lesser Hawkbit
Lotus corniculatus	Common Bird's-foot-trefoil
Lotus pedunculatus	Large Bird's-foot-trefoil
Lycopus europeaus	Gipsywort
Lysimachia nemorum	Yellow Pimpernel

Table 3. Plants of mire, swamps, reedbeds and tall-herb ferns	
Scientific Name	**Common Name**
Lysimachia nummularia	Creeping Jenny
Lysimachia vulgaris	Yellow Loosestrife
Lythrum portula	Water Purslane
Lythrum salicaria	Purple Loosestrife
Mentha sp. (inc. hybrids)	Any mint
Menyanthes trifoliata	Bog Bean
Molinia caerulea	Purple Moor-grass
Montia fontana	Blinks
Myosotis spp.	any Water Forget-me-not
Nasturtium officinale	Water-cress
Ophioglossum vulgatum	Adder's-tongue
Parnassia palustris	Grass-of-Parnassus
Pedicularis palustris	Marsh Lousewort*
Pedicularis sylvatica	Lousewort
Persicaria amphibia bistorta	Amphibious Bistort
Persicaria hydropiper	Water-pepper
Phragmites australis	Common Reed
Pinguicula vulgaris	Common Butterwort
Potentilla anserina	Silverweed
Pulicaria dysenterica	Common Fleabane
Ranunculus flammula	Lesser Spearwort
Rorippa amphibia	Great Yellow-cress
Rorippa palustris	Marsh Yellow-cress
Rorippa sylvestris	Creeping Yellow-cress
Sanguisorba officinalis	Great Burnet
Scirpus sylvaticus	Wood Club-rush
Scutellaria galericulata	Skullcap
Scutellaria minor	Lesser Skullcap
Silene flos-cuculi	Ragged Robin
Sparganium emersum	Unbranched Bur-reed
Sparganium erectum	Branched Bur-reed
Stachys palustris	Marsh Woundwort
Stellaria palustris	Marsh Stitchwort
Thalictrum flavum	Common Meadow-rue
Triglochin palustris	Marsh Arrowgrass
Trollius europeaus	Globeflower
Valeriana dioica	Marsh Valerian
Valeriana officinalis	Common Valerian
Veronica beccabunga	Brooklime
Veronica scutellaria	Marsh Speedwell

Table 3. Plants of mire, swamps, reedbeds and tall-herb ferns	
Scientific Name	**Common Name**
Viola palustris	Marsh Violet
Any other orchid	Count each species separately

11.9 Freshwater Habitats

Derbyshire supports a diverse range of flowing water ranging from large rivers such as the Trent, Erewash, Dove, Derwent and Wye to small tributaries at the upper margins of river catchments. The large lowland rivers often have extensive floodplains and associated features such as oxbows. Fast flowing smaller upland watercourses occur over hard silicaceous rocks and the limestone areas, though better drained, support a number of limestone streams and rivers that can support a diverse flora and fauna.

Freshwater Habitats - Rivers and Streams Selection Guidelines Sites that meet one or more of the following guidelines will be eligible for designation as a Local Wildlife Site.

Ri1. A stretch of river or similar water course that has 1 or more of the following a) – d);

a) ***a high and/or near natural water quality as determined by Biological General Quality Assessment methodology used by the Environment Agency.***

b) ***A suite of 3 or more natural river habitat features that should normally occur in the stretch of watercourse being evaluated from those listed below:***

- ***cascades***
- ***islands***
- ***oxbows***
- ***pools***
- ***rapids***
- ***riffle and run systems***
- ***sand, mud, shingle or gravel banks***
- ***unmodified bank profiles***
- ***unvegetated point bars***
- ***vegetated point bars***

c) ***A score of 12 or more from the species listed in Table 4a - c***

d) ***Significant water-crowfoot beds***

UKBAP Habitat Action Plan – Rivers

Application
This guideline can be applied to any flowing watercourse and should include the full length of the watercourse for which the features (a – d) are associated.

Justification
Rivers and streams are an important part of our critical natural capital, but information and knowledge of these habitats in terms of their nature conservation value in Derbyshire requires further work. However, for rivers and streams where detailed information is available designation as a Local Wildlife Site can be considered.

Ri2 Any stretch of river that is identified as a high-quality representation of its type as specified within the Vegetation Communities of British Rivers classification system (Holmes, Boon and Rowell, 1999).

UKBAP Habitat Action Plan –Rivers

Application
This should be applied to stretches of river that are usually 1km or more in length as this is the standard length used by the classification system. Key river types and sub-communities within Derbyshire are eligible. Liaison with Environment Agency ecologists and biologists will be necessary whilst assessing riverine sites using this guideline.

Justification
Rivers that are observed to be representative of their national type are valued as true examples of the expected river quality for the respective environmental conditions local to the river corridor such as geology and geomorphology etc. They reflect primary criteria including typicalness, diversity and naturalness. Good examples of high-quality rivers are scarce within England, as many rivers no longer present their natural state due to various man-induced physical or chemical modifications. Unmodified near natural watercourses support more characteristic plant and animal species than those watercourses that have been physically modified and have a degraded quality of water.

Table 4a Flowing Water vascular plants
Scoring
All species score 1 except for those species in bold (Derbyshire Vascular Plant Red Data List Species - 2009) which score 2.

- Species marked with an asterisk are characteristic of calcareous streams.
- Species with common names in italics have no post 1987 records in the county.

Table 4a. Flowing Water vascular plants	
Scientific Name	**Common Name**
Alisma lanceolatum	**Narrow-leaved Water-plantain**
Alisma plantago-aquatica	Water-plantain
Apium nodiflorum	Fool's-water-cress
Berula erecta	Lesser Water-parsnip*
Butomus umbellatus	Flowering-rush
Callitriche spp.	Water-starworts*

Table 4a. Flowing Water vascular plants	
Scientific Name	**Common Name**
Carex acuta	**Slender Tufted-sedge**
Carex acutiformis	Lesser Pond-sedge
Carex paniculata	Greater Tussock-sedge*
Carex riparia	Greater Pond-sedge
Ceratophyllum demersum	Rigid Hornwort
Chara sp.	Stoneworts
Eupatorium cannabinum	Hemp-agrimony
Glyceria spp.	Sweet-grasses
Groenlandia densa	**Opposite-leaved Pondweed***
Hippuris vulgaris	Marestail*
Hottonia palustris	**Water Violet**
Iris pseudacorus	Yellow Flag
Lythrum salicaria	Purple Loosestrife
Mentha aquatica	Water Mint
Menyanthes trifoliata	**Bog Bean***
Myosotis laxa	Tufted Forget-me-not
Myosotis scorpioides	Water Forget-me-not
Myosotis secunda	Creeping Forget-me-not
Myriophyllum alterniflorum	**Alternate Water-milfoil**
Myriophyllum spicatum	Spiked Water-milfoil
Myriophyllum verticillatum	**Whorled Water-milfoil**
Nasturtium officinale	Water-cress*
Nuphar lutea	Yellow Water-lily
Nymphaea alba	White Water-lily
Oenanthe aquatica	**Fine-leaved Water-dropwort**
Oenanthe crocata	Hemlock Water-dropwort
Oenanthe fistulosa	**Tubular Water-dropwort**
Oenanthe silaifolia	Narrow-leaved Water-dropwort
Phragmites australis	Common Reed
Potamogeton spp.	Pondweeds
Ranunculus circinatus	**Fan-leaved Water-crowfoot**
Ranunculus fluitans	River Water-crowfoot*
Ranunculus penicillatus	Stream Water-crowfoot*
Ranunculus spp.	Other water-crowfoot species*
Rumex hydrolapathum	Water Dock
Sagittaria sagittifolia	Arrowhead
Schoenoplectus lacustris	Common Club-rush
Schoenoplectus tabernaemontani	Grey Club-rush
Sparganium emersum	Unbranched Bur-reed
Sparganium erectum	Branched Bur-reed

Table 4a. Flowing Water vascular plants	
Scientific Name	**Common Name**
Spirodela polyrhiza	Greater Duckweed
Veronica anagallis-aquatica	Blue Water-speedwell*

Freshwater Habitats – Standing open water

Standing open water includes lakes, ponds, flashes, ditches, drains, canals and reservoirs. Some of these are natural features of the landscape whilst others are created by human activity. Most standing water habitats support areas of open water with associated submerged, floating and marginal plant communities where the water table is permanently above the sediment surface. However temporary water bodies can also be very important for wildlife and include seasonal ponds and ditches.

Standing water sites can be broadly categorised into eutrophic, mesotrophic and oligotrophic water bodies based on the nutrient status of the water. Eutrophic water bodies are relatively common throughout the UK and can be found throughout much of Derbyshire. They are characterised by high levels of plant nutrients. Phosphorus levels are typically greater than 0.035mg/l and inorganic nitrogen concentrations are greater than 0.5mg/l. Concentrations can be far higher than this and algal blooms can occur in some sites during summer.

Mesotrophic waterbodies are relatively infrequent in the UK and confined to the margins of the upland areas in the north and west of the country. In Derbyshire they are most likely to be encountered within the Peak District and upland fringes. They are characterised by a moderate level of nutrients that can support a diverse macrophyte flora but with relatively clear water and limited growth of planktonic or filamentous algae. Macrophyte communities will include at least some vascular plants or charophytes intolerant of nutrient-enriched conditions particularly nitrogen and phosphorus. Typically, mesotrophic waters have a narrow range of nutrient levels inorganic nitrogen concentrations of 0.3-0.65 mg/l and total phosphorus concentrations of 0.01 – 0.035mg/l. Because of eutrophication this habitat is becoming increasingly rare. Mesotrophic waters can support the highest diversity of submerged water plants of any waterbody type. They also often support nationally threatened, scarce or declining plant species.

Oligotrophic water bodies are primarily found in upland areas in association with hard, nutrient poor rocks where waters tend to be mineral poor. Productivity is often low due to low concentrations of dissolved nutrients, in particular nitrogen and phosphorus. Oligotrophic waters are usually clear, there is little accumulation of organic matter, and the substrate is often comprised of hard acidic rocks and mineral material. Marginal and submerged vegetation is often characterised by a suite of species restricted and adapted to acidic waters.

There is little data on the occurrence of oligotrophic water bodies in Derbyshire. Conditions are most favourable in the upland areas of Dark Peak and South-west Peak.

Lastly dystrophic waterbodies occur where the water is acid, brown and peaty and the dead vegetation does not decompose but settles at the bottom to form peat. This type of waterbody is likely to be associated with upland peat bogs and moorlands.

Types of standing water in Derbyshire
Natural lakes. Lakes formed within a natural basin. Many such lakes will have been modified or altered by human activities e.g. dams.

Oxbow ponds – Oxbow ponds develop after a river cuts a new path leaving behind the former meander which over time becomes isolated. Several oxbows are present on the River Trent.

Peatland pools – Usually small and temporary forming as a result of the topography of the mire or fen. They lie mainly within the upland fringes.

Field ponds – Constructed on farms for watering stock and often associated with the Enclosure Acts. Survey in 1989 (Derbyshire Wildlife Trust, 1989) revealed that 77% of the ponds present in the county in 1899 had disappeared. This decline is thought to have continued since 1989.

Dew ponds – Dew ponds occur on the carboniferous limestone of the White Peak and were originally intended as a method of watering stock in areas with little above ground drainage. They were designed to create a basin to capture rainfall and surface run-off. Today many are no longer used for stock and have attracted species like great crested newt or been colonised by a variety of wetland species.

Reservoirs – Constructed for irrigation and water storage. Often of significant ornithological interest. Some support a specialised drawdown zone flora. Examples include Carsington Reservoir and Foremark Reservoir.

Borrowpits – Associated with river corridors they have been created through flood bank construction and excavated for materials used in railway and road construction. Examples include Forbes Hole LNR in Long Eaton, Erewash.

Mineral extraction sites – clay pits, gravel pits, sandpits, brickpits and limestone quarries. These sites are very variable ranging from large deep gravel pits and flooded quarries to relatively small wetlands in brickpits and limestone quarries. These sites become more natural in time through natural colonisation of plants and animals. Many sites are relatively isolated and free from human impacts such as pollution and recreational disturbance. This can be very beneficial for plants, birds and mammals. Examples include Drakelow Wildfowl Reserve, Witches Oak Water and Steetley Quarry.

Flashes – standing water bodies created through subsidence of land over former coal workings.

Mill lodges and ponds – Originally constructed to store water to power mills. Nature conservation interest can be very variable. Some sites are associated with rare aquatic flora and fauna. Examples exist in New Mills, Matlock and Pleasley.

Ornamental lakes – Often associated with large estates or a parkland landscape. These sites can be of significant biological interest. They are usually eutrophic and can support submerged, floating and marginal wetland vegetation, diverse invertebrate assemblages and wetland birds. Some sites are also important for Water Vole. Examples include lakes at Hardwick Hall, Allestree Park and Markeaton Park.

Fishponds – Historic fishponds may support a range of features such as rich marginal vegetation, areas of relic fen, swamp or secondary wet woodland. They are often present as a series of interconnecting ponds.

Canals – The canals in Derbyshire include both disused canals such as Cromford Canal those still in use such as High Peak Canal and those under restoration such as Chesterfield Canal. Disused canals can be of great ecological interest due to the lack of disturbance.

Ditches – Artificially created and maintained drainage channels usually associated with local agricultural land drainage. Depending upon their location they may be permanently watered or may become dry at different times of the year.

Balancing ponds and lagoons – Artificially created and maintained waterbodies designed to attenuate surface water drainage from built developments. These can develop interest for both fauna and flora.

Garden ponds – Garden ponds can support a range of flora and fauna and in some areas make a significant contribution to local wildlife. However, garden ponds are excluded from these guidelines.

General application of Standing Water Guidelines

The guidelines for standing waters should be applied to areas of permanent or seasonal open water and associated swamp habitats of natural and artificial origin. Subsidiary habitats such as wet woodland and fen that may be associated with standing water sites may also be included within the Local Wildlife Site if they warrant designation. If they do not warrant designation they may also be included within the Local Wildlife Site if they are hydrologically contiguous with the standing water or provide important habitat for part of the life cycle of species of interest that are associated with the Local Wildlife Site. There is no minimum size threshold for selection; however linear sites such as canals should be assessed in sections between readily identifiable features such as bridges or locks.

Standing Open Water Selection Guidelines

Areas of standing water with any integral marginal vegetation that meet any one or more of the following guidelines will be eligible for selection as a Local Wildlife Site.

Stw1 A eutrophic standing water site that scores 10 or more from the species listed in Table 4b with at least one species recorded from two of the following habitats:

- ***submerged***
- ***floating***
- ***and swamp/marginal.***

UKBAP Habitat Action Plan – Eutrophic Standing Waters

Application
Most of the species recorded from Table 4b should be well distributed throughout the site. If they are rare or restricted to a few areas the site should not be designated.

Justification
The species listed in Table 4b provide an indication of a diverse and good quality standing water habitat, with a range of different vegetation communities from open water through to marginal swamp vegetation that is of nature conservation value. The species present should be relatively well distributed within the site.

Stw2 A mesotrophic standing water that scores 5 or more from the species listed in Table 4c or 10 from Table 4b and 4c.

UKBAP Habitat Action Plan – Mesotrophic Lakes

Application
Most of the species recorded from Table 4c should be well distributed throughout the site. If they are rare or restricted to a few areas the site should not be designated based on this guideline.

Justification
The species listed in Table 4c are indicative of good examples of nutrient poor (mesotrophic, oligotrophic through to dystrophic) water bodies with a variety of habitat)

Stw3 A standing water body that supports one of the following rare aquatic habitats or communities in Derbyshire as follows:

a) 5 or more submerged native aquatic plants
b) stable charophyte communities

UKBAP Habitat Action Plans – Eutrophic Standing Waters, Mesotrophic Standing Lakes

Application
This guideline is to be applied to those key habitats that are known to be rare and are valued within the county.

Justification
The above are rare habitats or vegetation community types in Derbyshire and are worthy of protection.

Charopytes are green algae which grow completely submerged in most types of wetlands, but which are most typically found in standing or slow moving waterbodies. Most species require high water quality and therefore they are useful indicators of mesotrophic conditions. They can absorb nutrients and clarify water and provide suitable habitat for many invertebrates. Most species decline when conditions become eutrophic.

Stw4 A standing water site that supports seasonal drawdown zones and vegetation of open habitat characterised by:

a) the presence of at least 5 species listed in Table 4d

b) OR one of the following NVC communities:

OV28 Agrostis stolonifera – Ranunculus repens
OV29 Alopecurus geniculatus – Rorippa palustris
OV30 Bidens tripartita – Persicaria amphibia
OV31 Rorippa palustris – Gnaphalium uliginosum
OV32 Myosotis scorpioides – Ranunculus sceleratus
OV35 Lythrum portula – Ranunculus flammula
MG13 Agrostis stolonifera – Alopecurus geniculatus grassland

UKBAP Habitat Action Plans – Eutrophic Standing Waters, Mesotrophic Lakes, Coastal and Floodplain Grazing Marsh, Lowland Fens

Application
This guideline applies to sites that hold standing water due to prolonged or seasonal flooding or standing water sites where the water table levels fluctuate. These may be floodplain grasslands or fens or reservoirs. These habitats can occur in quite localised patches, and consideration should be given to size and transitions to other habitats. Special consideration should also be given to sites supporting one or more of the specialised plant species highlighted in Table 4d.

Justification
Vegetation communities of the drawdown zone and marginal wetland open habitats are typically uncommon in Derbyshire and can support specialised flora and fauna. They often form important transitional habitats contributing to the overall biodiversity of an area.

Stw5 Any pond (standing water of < 2ha in size) that has a minimum PSYM score of 65% or more.

UKBAP Habitat Action Plans – Ponds

Application
This guideline can be applied to any pond that has been surveyed using the standardised PSYM survey methodology. PSYM is the recognised standard pond survey methodology developed by Pond Conservation and the Environment Agency. It provides an assessment of the overall ecological quality of the site based on several features including environmental data together with aquatic plant and macroinvertebrate data. (PCTPR, 2009)

Justification
Sites achieving a score of 75% or more are a UK BAP Priority Habitat. However, many standing water sites with scores less than this can be of considerable local importance and this criterion aims to reflect this importance and capture such sites. Use of the PSYM survey methodology enables some assessment of the aquatic invertebrate value of sites; something not reflected in the other standing water criteria.

Stw6 A standing water site that meets the criteria of a priority pond in the proposed National Pond HAP, either for species of high conservation importance or for exceptional assemblages of key biotic groups.

UKBAP Habitat Action Plans – Ponds

Application
This guideline can be applied to any standing water site that is found to support good populations of Red Data Book species, UK BAP priority species, species

fully protected under the Wildlife and Countryside Act Schedules 5 and 6, Habitats Directive Annex ll species, a Nationally Scarce wetland plant species or supports exceptional populations or numbers of key species (i.e. supports 30 or more wetland plant species or 50 or more aquatic macroinvertebrate species). Good populations of amphibian BAP species are defined in Table 10 of the amphibian, reptiles and fish chapter

Justification
Data from the Countryside Survey 2007 (Carey, P.D. et al, 2008) provided consistent evidence that ponds in England and Wales are widely degraded with around 80% of ponds in poor or very poor condition and that there had been a marked decline in quality since the Lowland Pond Survey in 1996. It is therefore important to protect those ponds across Derbyshire that are still valuable for wildlife.

Table 4b Indicative species list for nutrient rich standing waters (eutrophic through to mesotrophic)
Scoring

All species score 1 except for those species in bold (Derbyshire Vascular Plant Red Data List Species - 2009) which score 2.

- Species marked with an asterisk are characteristic of mesotrophic conditions.
- Species with common names in italics have no post 1987 records in the county .

Table 4b. Indicative species list for nutrient rich standing waters	
Scientific Name	**Common Name**
Alisma lanceolatum	**Narrow-leaved Water-plantain**
Alisma plantago-aquatica	Water-plantain
Apium inundatum	**Lesser marshwort***
Apium nodiflorum	Fool's-water-cress
Berula erecta	Lesser Water-parsnip
Butomus umbellatus	Flowering-rush
Callitriche brutia ssp. molliformis	**Intermediate Water-starwort**
Callitriche hermaphroditica	**Autumnal Water-starwort**
Callitriche obtusangula	**Blue-fruited Water-starwort**
Callitriche platycarpa	**Various-leaved Water-starwort**
Callitriche stagnalis	Common Water-starwort
Callitriche truncata	**Short-leaved Water-starwort**
Carex acuta	**Slender Tufted-sedge**
Carex acutiformis	Lesser Pond-sedge
Carex disticha	**Brown Sedge**
Carex paniculata	Greater Tussock-sedge
Carex pseudocyperus	Cyperus Sedge
Carex riparia	Greater Pond-sedge
Carex rostrata	Bottle Sedge
Carex vesicaria	**Bladder Sedge**
Catabrosa aquatica	**Whorl-grass**
Ceratophyllum demersum	Rigid Hornwort
Chara sp.	Stoneworts*
Eleocharis acicularis	**Needle Spike-rush**
Eleocharis palustris	Common Spike-rush
Equisetum fluviatile	Water Horsetail
Glyceria declinata	Small Sweet-grass
Glyceria fluitans	Floating Sweet-grass
Glyceria notata	Plicate Sweet-grass
Groenlandia densa	**Opposite-leaved Pondweed**
Hippuris vulgaris	Marestail
Hottonia palustris	**Water Violet***
Hydrocotyle vulgaris	Marsh Pennywort
Iris pseudacorus	Yellow Iris
Lemna gibba	Fat Duckweed

Table 4b. Indicative species list for nutrient rich standing waters	
Scientific Name	**Common Name**
Lemna trisulca	Ivy-leaved Duckweed
Littorella uniflora	Shoreweed*
Luronium natans	**Floating Water-plantain**
Lythrum salicaria	Purple Loosestrife
Mentha aquatica	Water Mint
Menyanthes trifoliata	**Bog Bean***
Myosotis laxa	Tufted Forget-me-not
Myosotis scorpioides	Water Forget-me-not
Myosotis secunda	Creeping Forget-me-not
Myriophyllum alterniflorum	**Alternate Water-milfoil**
Myriophyllum spicatum	Spiked Water-milfoil
Myriophyllum verticillatum	**Whorled Water-milfoil***
Nasturtium officinale	Water-cress
Nitella spp.	Any stonewort
Nuphar lutea	Yellow Water-lily
Nymphaea alba	White Water-lily
Oenanthe aquatica	**Fine-leaved Water-dropwort**
Oenanthe crocata	Hemlock Water-dropwort
Oenanthe fistulosa	**Tubular Water-dropwort**
Oenanthe silaifolia	Narrow-leaved Water-dropwort
Persicaria amphibia	Amphibious Bistort
Phalaris arundinacea	Reed Canary-grass
Phragmites australis	Common Reed
Potamogeton alpinus	**Red Pondweed***
Potamogeton berchtoldii	Small Pondweed
Potamogeton compressus	**Grass-wrack Pondweed**
Potamogeton crispus	Curled Pondweed
Potamogeton friesii	**Flat-stalked Pondweed**
Potamogeton lucens	**Shining Pondweed**
Potamogeton natans	Broad-leaved Pondweed
Potamogeton obtusifolius	**Blunt-leaved Pondweed***
Potamogeton pectinatus	Fennel Pondweed
Potamogeton perfoliatus	**Perfoliate Pondweed**
Potamogeton polygonifolius	Bog Pondweed
Potamogeton praelongus	**Long-stalked Pondweed**
Potamogeton pusillus	Lesser Pondweed
Ranunculus aquatilus	Common Water-crowfoot
Ranunculus circinatus	**Fan-leaved Water-crowfoot**
Ranunculus fluitans	River Water-crowfoot
Ranunculus hederaceus	Ivy-leaved Crowfoot

Table 4b. Indicative species list for nutrient rich standing waters	
Scientific Name	**Common Name**
Ranunculus omiophyllus	Round-leaved Crowfoot
Ranunculus peltatus	Pond Water-crowfoot
Ranunculus penicillatus	Stream Water-crowfoot
Ranunculus trichophyllus	Thread-leaved Water-crowfoot
Rumex hydrolapathum	Water Dock
Rumex maritimus	Golden Dock
Sagittaria sagittifolia	Arrowhead
Schoenoplectus lacustris	Common Club-rush
Schoenoplectus tabernaemontani	Grey Club-rush
Scirpus sylvaticus	**Wood Club-rush**
Sparganium emersum	Unbranched Bur-reed
Sparganium erectum	Branched Bur-reed
Spirodela polyrhiza	Greater Duckweed
Typha angustifolia	Lesser Bulrush
Typha latifolia	Bulrush
Veronica anagallis-aquatica	Blue Water-speedwell
Veronica beccabunga	Brooklime
Veronica catenata	Pink Water-Speedwell
Veronica scutellata	**Marsh Speedwell**
Zanichellia palustris	**Horned Pondweed**

Plants of Wetlands

Table 4c Indicative species list for nutrient poor standing waters (dystrophic, oligotrophic through to mesotrophic)

All species score 1 except for those species in bold (Derbyshire Vascular Plant Red Data List Species - 2009) which score 2.

- Species marked with an asterisk are characteristic of mesotrophic conditions.

Table 4c. Indicative species list for nutrient poor standing waters	
Scientific Name	**Common Name**
Apium inundatum	**Lesser Marshwort***
Callitriche brutia ssp. hamulata	**Intermediate Water-starwort**
Carex limosa	Mud Sedge
Carex paniculata	Greater Tussock-sedge
Carex rostrata	Bottle Sedge*
Chara sp.	Stoneworts*
Comarum palustre	**Marsh Cinquefoil**
Equisetum fluviatile	Water Horsetail
Eriophorum sp.	Any species of cotton grass
Hippuris vulgaris	Marestail

Table 4c. Indicative species list for nutrient poor standing waters	
Scientific Name	**Common Name**
Hottonia palustris	**Water Violet***
Juncus bulbosus	Bulbous Rush
Litorella uniflora	Shoreweed*
Menyanthes trifoliata	**Bog Bean***
Myriophyllum alterniflorum	**Alternate Water-milfoil***
Nitella spp.	Stonewort
Nymphaea alba	White Water-lily
Potamogeton alpinus	**Red Pondweed***
Potamogeton berchtoldii	Small Pondweed
Potamogeton compressus	**Grass-wrack Pondweed**
Potamogeton friesii	**Flat-stalked Pondweed**
Potamogeton natans	Broad-leaved Pondweed
Potamogeton obtusifolius	**Blunt-leaved Pondweed***
Potamogeton pectinatus	Fennel Pondweed
Potamogeton perfoliatus	**Perfoliate Pondweed**
Potamogeton polygonifolius	Bog Pondweed
Potamogeton praelongus	**Long-stalked Pondweed**
Potamogeton pusillus	Lesser Pondweed
Ranunculus aquatilus	Common Water-crowfoot
Ranunculus circinatus	**Fan-leaved Water-crowfoot**
Ranunculus flammula	Lesser Spearwort
Ranunculus fluitans	River Water-crowfoot
Ranunculus hederaceus	Ivy-leaved Crowfoot
Ranunculus omiophyllus	Round-leaved Crowfoot
Ranunculus peltatus	Pond Water-crowfoot
Ranunculus penicillatus	Stream Water-crowfoot
Ranunculus trichophyllus	Thread-leaved Water-crowfoot
Schoenoplectus tabernaemontani	Grey Club-rush

Table 4d: Indicative species list for drawdown zones and vegetation of inundation open habitat.
Scoring
All species score 1 except for those species in bold (Derbyshire Vascular Plant Red Data List Species - 2009) which score 2.

- Species marked with an asterisk are specialist species of these conditions.

Table 4d. Indicative species list for drawdown zone and vegetation of inundation open habitat	
Scientific Name	**Common Name**
Agrostis stolonifera	Creeping Bent
Alisma plantago aquatica	Water-plantain

Table 4d. Indicative species list for drawdown zone and vegetation of inundation open habitat	
Scientific Name	**Common Name**
Alopecurus aequalis	Orange Foxtail*
Alopecurus geniculatus	Marsh Foxtail
Bidens cernua	Nodding Bur-marigold
Bidens tripartita	Trifid Bur-marigold
Blysmus compressus	Flat Sedge
Callitriche spp.	Water-starworts
Chenopodium polyspermum	Many-seeded Goosefoot*
Chenopodium rubrum	Red Goosefoot
Eleocharis acicularis	Needle Spike-rush*
Eleocharis palustris	Common Spike-rush
Glyceria declinata	Small Sweet-grass
Glyceria fluitans	Floating Sweet-grass
Glyceria notata	Plicate Sweet-grass
Gnaphalium uliginosum	Marsh Cudweed
Hydrocotyle vulgaris	Marsh Pennywort
Isolepis setacea	Bristle Club-rush
Juncus articulatus	Jointed Rush
Juncus bufonius	Toad Rush
Juncus bulbosus	Bulbous Rush
Limosella aquatica	Mudwort*
Littorella uniflora	Shoreweed*
Lycopus europaeus	Gypsywort
Lysimachia nummularia	Creeping-Jenny
Lythrum portula	Water Purslane*
Mentha aquatica	Water Mint
Myosotis spp.	Water Forget-me-nots
Nasturtium microphyllum	Narrow-fruited Water-cress
Persicaria amphibia	Amphibious Bistort
Persicaria hydropiper	Water-pepper
Persicaria lapathifolia	Pale Persicaria
Persicaria maculosa	Redshank
Persicaria minor	Small Water-pepper*
Potentilla anserina	Silverweed
Pulicaria dysenterica	Common Fleabane
Ranunculus flammula	Lesser Spearwort
Ranunculus hederaceus	Ivy-leaved Crowfoot
Ranunculus omiophyllus	Round-leaved Crowfoot
Ranunculus sceleratus	Celery-leaved Buttercup
Ranunculus trichophyllus	Thread-leaved Water-crowfoot

Table 4d. Indicative species list for drawdown zone and vegetation of inundation open habitat	
Scientific Name	**Common Name**
Rorippa palustris	Marsh Yellow-cress
Rorippa sylvestris	Creeping Yellow-cress
Rumex maritimus	Golden Dock*
Rumex palustris	Marsh Dock*
Stachys palustris	Marsh woundwort
Stellaria palustris	Marsh Stitchwort
Stellaria uliginosum	Bog Stitchwort
eurospermum inodorum	Scentless Mayweed
Veronica scutellata	Marsh Speedwell

11.10 Mixed Habitat and Structural Mosaics

In many places habitats occur as mosaics and contain structural variation in the vegetation. Sites may contain habitats that are individually or collectively of conservation value, but do not necessarily satisfy specific habitat selection guidelines. Sites may also support an excellent and/or highly varied structure between different habitats or within the same habitat that provides a range of micro-habitat niches that are valuable for invertebrate groups. These sites can make an important contribution to the local biodiversity value of an area. These guidelines aim to address:

- Sites containing a variety of habitats which individually fail to meet the relevant thresholds for Local Wildlife Site designation, or which are not covered by specific guidelines elsewhere, but which are none the less important for their floristic or faunal value.

These habitats are often important for the range of habitat types, physical conditions and structural variation they provide.

Mixed habitat and structural mosaics may occur in a variety of semi-natural and artificial situations including,

1) Post-industrial sites on the following land types: -

a) Railway cinder beds/tracks
b) PFA Settlement lagoons
c) Quarries and Mines
d) Sewage works
e) Derelict land
f) Spoil tips and landfill sites

2) Former agricultural land, urban fringes or river corridors.

In many cases the animals and plants that appear on post-industrial sites are characteristic of early-successional vegetation communities but over time the vegetation can be expected to succeed to more permanent communities such as grassland, under-scrub and/or scrub and woodland (Shaw, P.J.A. 1992). However, in some cases these successional processes may be very slow due to a combination of the extreme physical conditions imposed by the substrates of some sites and/or the activities of grazing animals such as sheep and rabbits.

Post-industrial sites often become quite floristically and faunally diverse within a relatively short time. Plant communities commonly include a range of typical grassland species together with pioneer and ruderal plant species. Orchid species can sometimes become a significant feature.

In some localities, especially where the substrate is calcareous, the communities can over time approximate to ones of recognised nature conservation importance and make a significant contribution to the extent of those habitats in the county.

Post-industrial and semi-natural mosaic sites are often very important for lower plants (post-industrial especially), invertebrates, birds and small mammals. Invertebrates can often require different parts of vegetation mosaics and structure at different stages of their life cycles or for daily feeding or cover. Such variation for invertebrates is important to their survival. Structural heterogeneity can be considered on different scales. The more complex the vegetation structure, the greater the niche diversity and therefore, the greater the number of insects likely to be present (Speight. M.R et al, 1999). This includes neglected or unmanaged habitats, which can also be of conservation importance for invertebrates.

Invertebrate ecologists are aware that if a site supports varied structural features, then it is worthy of survey for its invertebrate fauna and is likely to support a more diverse range of species than a site with homogeneous vegetation. For example, a rough possibly unmanaged grassland supporting tussocky grasses, bare ground, scrub and varied sward height is likely to be more diverse for invertebrates than a grassland that is grazed so that sward height is constant. At a smaller scale, spiders, for example, use specific features of vegetation for web spinning, construction of cocoons, hunting and aerial dispersal. It is the combination of niches or microhabitats and structure within a localised area that is important for invertebrates as opposed to large uniform habitat blocks. This variation can be equally or more important than the juxtaposition of different habitats within a site.

Structural complexity is generally a function of vegetation architecture, although it may also refer to substrate architecture. Complex vegetation architecture may be an attribute of a dominant plant species (e.g. the densely woven structure of Chara beds in open water). It may also be as a result of different species growing together, for example where small sedges, spike rushes, rushes and mosses form a close mosaic in some types of fens and water margin vegetation. In almost all standing water habitats the vast majority of macro-invertebrate biomass is associated with richly vegetated shallow water margins.

General application
A habitat mosaic can broadly be defined as an area where a range of contiguous habitats occur in transition with one another often displaying considerable ecotone habitat gradients and often at a fairy fine scale. By this definition a habitat mosaic cannot be formed by the presence of distinct habitats that happen to occur adjacent to each other i.e. an area of woodland adjacent to a field and a stream.

Habitat Mosaic Selection Guidelines
Sites that meet one or more of the following guidelines will be eligible for designation as a Local Wildlife Site.

Mh1 Sites of 0.25 ha or more in size that support a combination of two or more individual habitats that are of borderline Local Wildlife Site quality, and which occur in transition with one another .

Application
This guideline should be applied to any area that supports a mosaic of semi- natural vegetation. Sites should support at least two habitat types that meet at least 80% of the relevant selection guidelines.

Justification
Typically, mixed habitat sites will support different stages in vegetation succession. Often the individual habitat types that are part of the mosaic do not qualify as Local Wildlife Sites either because they are too small or because they do not support a sufficient number of indicator or character species. In combination, however, these habitat types can support a significant diversity of habitats and species that can make a significant contribution to local biodiversity and nature conservation objectives.

Mh2 Sites of 0.25 ha or more in size that support a mosaic of habitat types from those listed in Table 5 that collectively have a minimum habitat diversity score of 8 (or 6 in the Derby area).

UKBAP Habitat Action Plans – Open mosaic habitats on previously developed land

Application
This guideline should be applied to any area supporting semi-natural vegetation in combination with artificial habitats. For sites outside of the Derby area, reference should be made to the relevant Local Biodiversity Action Plan to identify whether the site makes an important contribution to the Plan's geographical area or National Character Area.

Justification
The combination of different habitat types near each other and the gradation from one habitat to another often provides a much a higher diversity of niches for plants and animals than other sites that may be dominated by one particular habitat. These sites are particularly valuable for species

that utilise more than one habitat type throughout the day and night for feeding, roosting and protection. The juxtaposition of some of these habitats can also be important for the survival of animal species that require two or more habitats at different times during their life cycle such as amphibians and a range of invertebrates. These habitat mosaic sites are often important reservoirs of biodiversity particularly in areas of the county where there is intensive land-use and/or a lack of sites of Local Wildlife Site quality for individual habitat types. Habitat mosaics are of particular significance within the Derby area. The lower threshold score for the Derby area sites reflects their often-small size and the consequent limitations for a diversity of features within these sites.

Mh3 Sites which meet the definition and criteria for field recognition of the UK BAP Priority Habitat - Open Mosaic Habitats on Previously Developed Land

Application
This guideline should be applied to any area which meets the published criteria for this UK BAP Priority Habitat (JNCC, 2010) including any subsequent updates.
In summary the 5 criteria are as follows:

1. The area of open mosaic habitat is at least 0.25 ha in size.
2. Known history of disturbance at the site or evidence that soil has been removed or severely modified by previous use(s) of the site. Extraneous materials/substrates such as industrial spoil may have been added.
3. The site contains some vegetation. This will comprise early successional communities consisting mainly of stress-tolerant species (e.g. indicative of low nutrient status or drought). Early successional communities are composed of
   (a) annuals, or (b) mosses/liverworts, or (c) lichens, or (d) ruderals, or (e) inundation species, or (f) open grassland, or (g) flower-rich grassland, or (h) heathland.
4. The site contains unvegetated, loose bare substrate and pools may be present.
5. The site shows spatial variation, forming a mosaic of one or more of the early successional communities (a)–(h) above (criterion 3) plus bare substrate, within 0.25 ha.

Justification
The 2005-08 review of the UK BAP resulted in the inclusion of this habitat on the list of UK BAP Priority Habitats. The Local Wildlife Site selection guidelines aim to capture all UK BAP Priority Habitats.

Table 5. Habitat Mosaics	
Habitat	**Score**
Unimproved neutral grassland	4
Unimproved calcareous grassland	4
Unimproved acid grassland	4
Ancient semi-natural woodland	4
Wet heath or mire	4

Table 5. Habitat Mosaics	
Habitat	**Score**
Marsh or fen (species-rich)	4
Swamp	3
Dry heath	3
Open water (running or standing)	2
Temporary water	2
Semi-improved grassland (acid, neutral or calcareous)	2
Secondary semi-natural woodland	2
Ruderal/bare ground communities	2
Rush-pasture	1
Rough grassland	1
Marsh or fen (species poor)	1
Scrub	1
Tall herb open vegetation	1
Other habitat types covered by these guidelines	1

11.11 Arable Plant Communities

Many plant species classed as arable weeds have declined throughout their former ranges in the British Isles and are now widely perceived as rare and threatened. Modern intensive farming methods including seed cleaning techniques, use of selected herbicides, greater use of fertilisers and changes to traditional crop rotations have all affected the diversity and abundance of arable weeds. Today these plant communities are typically restricted to field margins and abandoned or derelict land. Often, they occur as impoverished communities consisting only of the more resilient species.

Designating fields or parts of fields that support elements of this flora as Local Wildlife Sites has not previously been undertaken in Derbyshire, although sites have been designated elsewhere in the UK. The transitory nature of some of these weeds creates problems in the selection of sites and good sites may vary from year to year depending upon management and physical conditions.

Arable Plant Selection Guideline
Sites that meet one or more of the following guidelines will be eligible for designation as a Local Wildlife Site.

Ar1 Arable plant communities that score 8 or more from Table 6.

UKBAP Habitat Action Plan – Arable Field Margins

Application
Any arable plant community present within a field or field margin that meets the above guideline can be selected. Arable plants should ideally be present as part of an agricultural crop rotation

system that allows the community to persist. Community composition may change during the crop rotation.

Justification
Arable plant species and communities have been undergoing national declines since the 1950s and probably before. Many species typical of arable land-use are now rare nationally and in Derbyshire. Arable plants are a distinctive part of our flora and culture and often provide a valuable food source for farmland invertebrates, birds and mammals.

Table 6: Arable plants of Derbyshire
Scoring
All species score 1 except for those species in bold (Derbyshire Vascular Plant Red Data List Species - 2009) which score 2.
Species marked with * have no post 1987 records in Derbyshire.

Table 6. Arable plants of Derbyshire	
Scientific Name	**Common Name**
Aethusa cynapium	Fool's Parsley
Agrostemma githago	Corncockle
Agrostis gigantea	Black Bent
Aira praecox	Early Hair-grass
Anagallis arvensis ssp. arvensis	Scarlet Pimpernel
Anagallis arvensis ssp.foemina	Blue Pimpernel
Anagallis minima	**Chaffweed***
Anchusa arvensis	Bugloss
Apera interrupta	Dense Silky-bent
Apera spica-venti	Loose Silky-bent
Aphanes arvensis agg.	Parsley Piert
Avena fatua	Wild Oat
Avena sativa	Oat
Centaurea cyanus	Cornflower
Cerastium arvense	Field Mouse-ear
Cerastium semidecandrum	Little Mouse-ear
Chaenorhinum minus	Small Toadflax
Chenopodium album agg.	Fat Hen
Chenopodium polyspermum	Many-seeded Goosefoot
Chenopodium rubrum	Red Goosefoot
Erodium cicutarium agg	Common Stork's-bill
Euphorbia exigua	**Dwarf Spurge**
Euphorbia helioscopia	Sun Spurge
Filago vulgaris	**Common Cudweed**
Fumaria muralis	**Common Ramping-fumitory**
Fumaria officinalis	Common Fumitory

Table 6. Arable plants of Derbyshire	
Scientific Name	**Common Name**
Galeopsis bifida	Bifid Hemp-nettle
Galeopsis speciosa	**Large-flowered Hemp-nettle**
Geranium pusillum	Small-flowered Crane's-bill
Glebionis segetum	Corn Marigold
Kickxia elatine	**Sharp-leaved Fluellen**
Lamium amplexicaule	Hen-bit Dead-nettle
Legousia hybrida	**Venus's-looking-glass**
Lepidium campestre	Field Pepperwort
Lepidium heterophyllum	**Smith's Pepperwort**
Lepidium ruderale	Narrow-leaved Pepperwort
Lepidium squamatum	Swine-cress
Lithospermum arvense	**Field Gromwell**
Mentha arvensis	Corn Mint
Ornithopus perpusillus	**Bird's-foot**
Papaver argemone	**Prickly Poppy**
Papaver dubium	Long-headed Poppy
Papaver rhoeas	Common Poppy
Persicaria lapathifolia	Pale Persicaria
Ranunculus arvensis	**Corn Buttercup**
Ranunculus sardous	**Hairy Buttercup**
Scandix pecten-veneris	**Shepherd's-needle**
Sherardia arvensis	Field Madder
Silene latifolia	White Campion
Silene noctiflora	Night-flowering Catchfly
Sinapis arvensis	Charlock
Solanum nigrum	Black Nightshade
Spergula arvensis	Corn Spurrey
Stachys arvensis	Field Woundwort
Thlaspi arvense	Field Penny-cress
Trifolium arvense	Hare's-foot Clover
Urtica urens	Small Nettle
Valerianella carinata	Keeled-fruited Cornsalad
Valerianella dentata	Narrow-fruited Cornsalad*
Valerianella locusta	Common Cornsalad
Viola arvensis	Field Pansy
Veronica agrestis	Green Field-speedwell
Veronica polita	Grey Field-speedwell

12.0 Section 2: Species Guidelines

Application
Sites selected based on the habitats which they contain will also support a large part of the County's biodiversity i.e. plants and animals. However, it is recognised that to conserve some species, site selection specifically on the basis of their presence will be important. The species guidelines are principally related to species that occur naturally in the county. However, species which are native in Great Britain and which become established in the county without human intervention are also included. In the future the guidance might be revised to include species which are the subject of Natural England accredited species recovery/introduction programmes.

In most cases, each species guideline is followed by a list of species to which the guideline applies in Derbyshire. Such lists generally include only those species which are known or believed at the time of writing to be extant in Derbyshire. For some of the less well-recorded groups of plants and animals these lists may include species that were last recorded in Derbyshire some time ago, but which may still be present. In some cases, however, species that are likely to have become extinct in recent years, are included too, as are a few species that are in the process of extending their geographical range to include Derbyshire. Records of species new to the County or of species previously considered to be extinct which are not included in the lists will also be eligible if they satisfy the terms of the guideline concerned. Hybrids have only been included in the lists where one or both parents are extinct or rare within the County.

To these guidelines a 'locality' is defined as an area not exceeding one square kilometre in extent (a monad). It is important to note that Local Wildlife Sites should only be identified based on reliable field records which have been appropriately verified and that often records made within a period of not more than five years prior to the time of first assessment will be required. Species records made before this time will be taken into consideration and can add weight to the selection of a site.

Many species are of course mobile and can move. Use of the term 'regularly' in those guidelines relating to animal species means that the species should have been recorded on the site for a minimum of 3 separate years (not necessarily consecutive) since 1987, unless otherwise stated. In some cases, sites may be designated based on less regular evidence, where there are reasonable grounds to assume that the species concerned is still present or continues to use the site in question.
Sometimes priority species (as defined by the UK BAP) are associated with areas with little other ecological interest, such as buildings, private gardens, improved grassland or arable fields. In these cases, it may be impractical to designate Local Wildlife Sites for these species, and these habitats may be specifically excluded from designation.

12.1 Lichen, Fungi and Lower Plants

Application (all guidelines)
The distribution of fungi, lichens and lower plants (mosses, liverworts, stoneworts and algae) in Derbyshire is less well known than that of flowering plants and ferns but continued recording since publication of the 2003 Selection Guidelines has increased knowledge and understanding of the distribution and status of many species. Evaluation of potential new sites or re-evaluation of existing sites should be made on up-to-date survey data which should be no more than 5 years old at the time of assessment and preferably this should be data collected within the past year.

Justification (all guidelines)
Although often inconspicuous and under-recorded the non-vascular flora of Britain is one of the richest in Europe. Derbyshire's industrial past had a significant and adverse effect on the diversity and distribution of non-vascular plants especially lichens, but atmospheric conditions are now significantly improved and some species are re-appearing with many epiphytic bryophytes making good population recoveries.

12.1.1 Lichen Selection Guidelines

Sites that meet one or more of the following guidelines will be eligible for designation as a Local Wildlife Site.

Li1 Any site which supports a population of lichen species listed in Schedule 8 of the Wildlife and Countryside Act 1981 (as revised and amended) or with IUCN threat categories: critically endangered (CR); endangered (EN); vulnerable (VU); or which are nationally rare (NR). (Woods & Coppins, 2003) (under revision) (http://www.jncc.gov.uk)

Application
This guideline should be applied to any site with a population of one or more of these species. The JNCC maintain a spreadsheet listing the conservation designations of UK taxa. This spreadsheet is updated regularly and is downloadable from the JNCC website (http://www.jncc.gov.uk) making this an easily accessible and up to date list of conservation designations.

Justification
These lichen species are the rarest and/or most threatened with extinction in the British Isles and Britain has a national and international responsibility to conserve them throughout their distribution.

Li2 Any site which supports a significant population of a lichen species that is nationally scarce (NS) or near threatened (NT) in Britain (Woods & Coppins, 2003) (under revision), (http://www.jncc.gov.uk) & (Price, 2009 – and future revisions) where such populations contribute significantly to the distribution pattern or the total population size of that species in Derbyshire.

Application
All sites for lichens in the above categories are eligible.
The JNCC maintain a spreadsheet listing the conservation designations of UK taxa which includes those species which are Nationally Scarce or Near Threatened. This spreadsheet is updated regularly and is downloadable from the JNCC website (http://www.jncc.gov.uk) making this an easily accessible and up to date list of conservation designations. Consideration should be given to the relative size and extent of the population in relation to populations at other sites both within Derbyshire and nationally and to the contribution this makes to the geographical range of the species. This guideline should therefore only be applied following consultation with the County Lichen Recorder.

Justification
Britain is particularly rich in lichens because of its geographical position in the path of the North Atlantic Drift. However, species that occur in 16 – 100 10km squares (inclusive) in Britain are Nationally Scarce. There is a national responsibility for their conservation. Species threatened in Europe may be relatively widespread and abundant in Britain, but where a population contributes significantly to the distribution pattern or the total population size of that species in Derbyshire there is an international responsibility to conserve it.

The protection, maintenance and enhancement of the populations of these species in Derbyshire is vital for sustaining biological diversity throughout the British Isles.

Sites where the species concerned has been recently deliberately introduced, excluding species recovery programmes, should not normally be included.

Li3 Any site which supports a significant Derbyshire population of a lichen species that is a UK BAP Priority Species.

Application
All sites for lichens in the above category should be considered. The JNCC maintain a spreadsheet listing the conservation designations of UK taxa including those species which are UK BAP Priority Species. This spreadsheet is updated regularly and is downloadable from the JNCC website (http://www.jncc.gov.uk) making this an easily accessible and up to date list of conservation designations.

Justification
Species identified as UK BAP Priority Species are a priority for conservation and there is therefore a need to ensure that sites in Derbyshire which support them are identified and afforded protection.

Li4 Any site that supports a significant proportion of the Derbyshire population, or contributes significantly to the range in Derbyshire, of a lichen species that is recorded from

more than 3 localities within the County (Price, 2009 and future revisions), but which could be at risk because of very small populations, recent rapid decline, or habitat loss or change.

Application

All sites for lichens in the above category which are not covered elsewhere may be considered where they significantly extend the range of the species in Derbyshire or support a significant proportion of the Derbyshire population of that species. Assessment of the significance of species being considered under this guideline should only be made following consultation with the County Lichen Recorder.

Justification

Species included here whilst not immediately in danger of extinction in the County may, nevertheless, be at risk and could fall into the endangered category without adequate preventative measures.

Li5 Any site that supports an assemblage of lichen species that contributes significantly to the overall lichen flora of Derbyshire.

Application

Selection of sites under this guideline should be guided by local and national experts on Britain/Derbyshire's lichen flora and only be made following consultation with the County Lichen Recorder.

Justification

Assemblages of lichens may be representative of climatic gradients, habitat types or geology within Derbyshire and may either be highly representative or of restricted occurrence.

12.1.2 Fungi

Application (all fungi guidelines)

The production of fruiting bodies, by means of which most fungi are identified, may be irregular and is influenced by many environmental factors. Moreover, the distribution of fungi in Derbyshire is imperfectly known in many cases, and species lists given below should be regarded as tentative. Whilst the general rule of post-1987 records only being eligible should be borne in mind, consideration may be given to sites where relevant records have been made between 1978 and 1986 where it appears that no gross habitat change has occurred which would have been likely to result in the loss of the species concerned.

Fungi Selection Guidelines

Sites that meet one or more of the following guidelines will be eligible for designation as a Local Wildlife Site.

Fu1 Any site which supports a population of fungi species listed under any of the following categories:

a) a species listed in schedules 5 of the Wildlife and Countryside Act 1981 (as revised and amended)
b) a species listed on the British Red Data Books of Britain and Ireland
c) a species considered to be 'nationally scarce'
d) a species for which Derbyshire is a stronghold within the region
e) a species which has three or fewer localities in the County

Application
This guideline should be applied to any site with a population of these species. For clarification of a species inclusion in this guideline reference should be made to the Derbyshire Red Data Book (Elkington ed, 1996) and the County Fungi recorder for updated information.

The following fungi species are currently identified: -

Camarophyllus atropunctus
Cortinarius violaceus
Entoloma bloxhamii
Graddonia coracina
Hygrocybe calyptraeformis
Marasmius hudsonii
Mycena rubromarginata
Pseudocratereluus sinuosus
Ripartites metrodii
Russula carminea
Strobilomyces strobilaceus

Provisional species
Hygrocybe spadicea

Justification
These fungi species are the rarest and or most threatened with extinction in the British Isles. Consequently, the protection, maintenance and enhancement of the populations of these species in Derbyshire are vital for sustaining biological diversity throughout the British Isles.

Fu2 Areas of grassland that support a significant fungal assemblage for Derbyshire based on a CHEG score of C8 H17 E15 G? or greater.

Application
Any grassland site found to support a fungi flora that meets or exceeds the above CHEG score could be included under this guideline.

Determining a CHEG score.
To assess whether a particular area of grassland is important in terms of the number of grassland fungi species it supports the CHEG profile developed by Rotheroe (Rotheroe et al, 1996) can be

used. The evaluation of grassland sites with fungal conservation value is based on the following four fungi groups: -

1. Clavaroid fungi - The Fairy Clubs.
2. Hygrocybes* - The Waxcaps.
3. Entolomas (sensu Noordeloos)# - The Pink Gills.
4. Geoglossaceae -The Earth Tongues. Please note the score for this group is currently undetermined.

* - including *Porpoloma* and *Dermoloma*.
# - including *Leptonia* etc.

Each species from one of these groups counts towards a numerical score for each grassland site. This scoring system is known as the CHEG profile and takes its name from the initials of the 4 groups of fungi listed above. It enables one to compare grassland sites for their relative conservation value.

A significant CHEG profile in terms of Derbyshire and Peak District grassland sites would be: -

C8 H17 E15 G? (The numerical value for *Geoglossum* species is currently undetermined).

Fu3 Areas of grassland that support a significant fungal assemblage including at least 8 of the species listed below, but have an overall CHEG score of < C8 H17 E15 G?

Application
All sites that support a grassland fungi assemblage that meets the above guideline are eligible. The guideline should be implemented in consultation with recognised fungi experts. The current list of species is set out below and has been compiled by N. Barden (pers com October 2002).

Rare or endangered Species of Semi-natural Grassland:

Clavaroid fungi the Fairy Clubs
Clavaria zollingeri
Clavulinopsis umbrinella
Hygrocybes the Waxcaps
Hygrocybe aurantiosplendens
Hygrocybe calyptriformis
Hygrocybe citrinovirens
Hygrocybe colmanniana
Hygrocybe flavipes
Hygrocybe fornicata
Hygrocybe helobia
Hygrocybe ingrata
Hygrocybe irrigata

Hygrocybe intermedia
Hygrocybe lacmus
Hygrocybe nitrata
Hygrocybe ovina
Hygrocybe punicea
Hygrocybe quieta
Hygrocybe spadicea
Hygrocybe splendidissima
Hygrocybe vitellina
Porpoloma metapodium

Entolomas the Pinkgills
Entoloma bloxamii
Entoloma incanum
Entoloma prunuloides

Geoglossaceae the Earth Clubs
All species except *Geoglossum fallax* (the most common).
Microglossum olivaceum

Justification
Grassland fungi are especially vulnerable to agricultural improvement and have declined dramatically in recent years. Although many grassland sites will be identified as Local Wildlife Sites because of their vascular plant interest steps should be taken to ensure sites important for fungi are also identified.

12.1.3 Mosses and Liverworts

Application (all bryophyte guidelines)
When the 2003 version of these guidelines were published the most comprehensive and up to date list of bryophytes considered to be of conservation concern was provided by Blockeel in Endangered Wildlife of Derbyshire (Elkington et al 1996). Over a decade of bryophyte recording by the County Bryophyte Recorder T Blockeel (with contributions from a small number of other active bryologists) since the publication of Endangered Wildlife of Derbyshire, has rendered this publication and its lists out of date.

Therefore, potential sites should only be selected based on up-to-date information provided by the County Bryophyte Recorder.

Justification
Until there is a revision of the Endangered Wildlife of Derbyshire or publication of a County Bryophyte Flora to provide sufficient up to date information, the sole source of accurate information regarding the status and distribution of bryophytes within Derbyshire which are of conservation concern is the County Bryophyte Recorder.

These species are those that are the most threatened or rarest in the County and their protection in Derbyshire is essential for sustaining biological diversity in the County and throughout the British Isles

Mosses and Liverworts Selection Guidelines
Sites that meet one or more of the following guidelines will be eligible for designation as a Local Wildlife Site.

Br1 Any site which supports a population of bryophyte species listed under Schedule 8 of the Wildlife and Countryside Act 1981 (as amended) or a species listed on the British Red Data Books of Britain and Ireland: Mosses and Liverworts (Church et al 2001) or any subsequent updates. (Preston, C.D. 2010)

Application
All sites for bryophytes in the above categories should be included, at present only two Schedule 8 species have been recorded in Derbyshire. Information on the presence of Red Data Book species has not yet been compiled.

Justification
The species in the above categories are either threatened or rare in Western Europe or Britain and for which there is either an international or national responsibility for their Conservation. Nationally rare species are generally those which are recorded from 15 or fewer 10km squares in Britain.

Br2 Any site supporting a population of a bryophyte species that is,

a) nationally scarce

b) threatened in Europe where such populations contribute significantly to the distribution pattern or the total population size of that species in Derbyshire.

c) recorded from 6 or fewer localities in Derbyshire based on information available at the time of the assessment

Application
All sites for bryophytes in the above categories are eligible for selection. All 'nationally scarce' bryophyte species are listed by Preston (2006). In addition, lists are maintained and updated by JNCC which are available for downloading from the JNCC website along with species threatened in Europe.(http://www.jncc.gov.uk

Justification
Britain is particularly rich in bryophytes because of its geographical position in the path of the North Atlantic Drift. However, species that occur in 16 – 100 10km squares (inclusive) in Britain are Nationally scarce. There is a national responsibility for their conservation. Species threatened in Europe may be relatively widespread and abundant in Britain, but where a population contributes significantly to the distribution pattern or the total population size of that species in

Derbyshire there is an international responsibility to conserve it. It is also important to conserve species that are rare and/or declining in Derbyshire even if the species is more abundant elsewhere in Britain.

The protection, maintenance and enhancement of the populations of these species in Derbyshire is vital for sustaining biological diversity throughout the British Isles.

Sites where the species concerned has been recently deliberately introduced, excluding species recovery programmes should not normally be included.

For clarification regarding the inclusion of individual species in this guideline reference should be made to the JNCC downloadable lists and consultation should be undertaken with the County Bryophyte recorder for updated information.

Br3 Any site that supports a significant proportion of the Derbyshire population, or contributes significantly to the range in Derbyshire, of a bryophyte species that is recorded from more than 6 localities within the County, but which could be at risk because of very small populations, recent rapid decline, or habitat loss or change.

Application
All sites for bryophytes in the above category which are not covered elsewhere may be considered where they significantly extend the range of the species in Derbyshire or support a significant proportion of the Derbyshire population of that species. Currently there is no published up to date listing of these species so this guideline should only be applied following consultation with the County Bryophyte Recorder.

Justification
Species included here whilst not immediately in danger of extinction in the County may, nevertheless, be at risk and could fall into the endangered category without adequate preventative measures.

Br4 Any site that supports a significant assemblage of bryophyte species in relation to the Natural Character Area in which the site is located. This significance being determined by a scoring system based on scarcity and habitat or the diversity of epiphytic species present. These species are listed in Table 7 below.

Application
This guideline may be applied to any site for which there is recent survey data. Continued recording within the County will be needed to determine appropriate thresholds and there will invariably be a need to amend Table 7 as more site-specific survey data becomes available. Therefore, this guideline should only be applied following consultation with the County Bryophyte Recorder.

Justification

Within sites bryophytes can occupy many niches provided by a range of sub-habitats that occur within the broad habitats that characterise a site. This can result in important bryophyte assemblages both at County and local level. Such assemblages can be of restricted occurrence and indicative of the high overall biodiversity value of individual sites.

Table 7. Bryophytes of importance within Derbyshire based on their scarceness, habitat and importance as epiphytes

Table 7. Bryophytes of importance				
Name	**Tetrad Count**	**Scarcity Score**	**Habitat Score**	**Total Score**
Acaulon muticum s.l.	1	3		3
Aloina aloides s.str.	21	1		1
Aloina ambigua	3	3	1	4
Amblystegium confervoides	3	3	1	4
Amphidium mougeotii	21	1	1	2
Andreaea rothii	10	2	1	3
Andreaea rupestris	12	1	1	2
Anoectangium aestivum	2	3	1	4
Anomobryum julaceum	1	3	1	4
Anthoceros agrestis	1	3	1	4
Aphanorrhegma patens	16	1	1	2
Archidium alternifolium	12	1	1	2
Atrichum crispum	18	1		1
Atrichum tenellum	1	3	1	4
Barbilophozia attenuata	32		1	1
Barbilophozia barbata	3	3	1	4
Bartramia ithyphylla	1	3	1	4
Bartramia pomiformis	16	1	1	2
Bazzania trilobata	4	2	1	3
Blasia pusilla	1	3	1	4
Blepharostoma trichophyllum	1	3	1	4
Blindia acuta	33		1	1
Brachydontium trichodes	4	2	1	3
Brachythecium glareosum	6	2		2
Brachythecium salebrosum	2	3	1	4
Breutelia chrysocoma	4	2	1	3

Table 7. Bryophytes of importance				
Name	**Tetrad Count**	**Scarcity Score**	**Habitat Score**	**Total Score**
Bryoerythrophyllum ferruginascens	13	1	1	2
Bryum algovicum	2	3	1	4
Bryum alpinum	1	3	1	4
Bryum archangelicum	13	1		1
Bryum bornholmense	1	3		3
Bryum canariense	4	2	1	3
Bryum elegans	1	3	1	4
Bryum gemmiferum	5	1		1
Bryum moravicum	23	1		1
Bryum pallescens	4	2		2
Bryum radiculosum	10	1		1
Bryum ruderale	20	1		1
Bryum sauteri	3	2		2
Bryum violaceum	24	1		1
Calliergon cordifolium	3	3	1	4
Calliergonella lindbergii	5	2	1	3
Calypogeia azurea	3	3		3
Calypogeia integristipula	1	3	1	4
Campyliadelphus chrysophyllus	49		1	1
Campylium protensum	16	1	1	2
Campylium stellatum s.str.	22	1	1	2
Campylophyllum calcareum	2	3	1	4
Campylopus fragilis	6	2	1	3
Campylostelium saxicola	1	3	1	4
Cephalozia connivens	1	3	1	4
Cephalozia lunulifolia	7	2	1	3
Cephaloziella hampeana	9	1		1
Cephaloziella stellulifera	2	3	1	4
Cirriphyllum piliferum	68		1	1
Cladopodiella fluitans	3	3	1	4
Climacium dendroides	51		1	1

Table 7. Bryophytes of importance				
Name	**Tetrad Count**	**Scarcity Score**	**Habitat Score**	**Total Score**
Cololejeunea calcarea	5	2	1	3
Cololejeunea minutissima	6	2		2
Cololejeunea rossettiana	9	2	1	3
Colura calyptrifolia	2	3		3
Conardia compacta	2	3	1	4
Coscinodon cribrosus	2	3	1	4
Cynodontium bruntonii	4	2	1	3
Dialytrichia mucronata	3	3	1	4
Dichodontium flavescens	3	2	1	3
Dichodontium palustre	63		1	1
Dicranella cerviculata	19	1	1	2
Dicranella rufescens	25	1	1	2
Dicranella subulata	2	3	1	4
Dicranodontium denudatum	1	3	1	4
Dicranoweisia crispula	1	3	1	4
Dicranum bonjeanii	6	2	1	3
Dicranum fuscescens	10	2	1	3
Dicranum majus	17	1	1	2
Dicranum montanum	2	3	1	4
Didymodon ferrugineus	8	2	1	3
Didymodon spadiceus	6	2	1	3
Didymodon tomaculosus	10	2	1	3
Didymodon vinealis	14	1		1
Discelium nudum	10	2	1	3
Distichium capillaceum	3	3	1	4
Distichium inclinatum	3	3	1	4
Ditrichum flexicaule s.l.	41		1	1
Ditrichum heteromallum	24	1	1	2
Drepanocladus aduncus	14	1	1	2
Encalypta vulgaris	45		1	1
Entodon concinnus	2	3	1	4
Entosthodon fascicularis	8	2	1	3

Table 7. Bryophytes of importance				
Name	**Tetrad Count**	**Scarcity Score**	**Habitat Score**	**Total Score**
Entosthodon muhlenbergii	21	1	1	2
Entosthodon obtusus	1	3	1	4
Ephemerum recurvifolium	2	3	1	4
Ephemerum serratum s.str.	11	1	1	2
Ephemerum sessile	2	3	1	4
Eucladium verticillatum	24	1	1	2
Eurhynchium striatum	125		1	1
Fissidens adianthoides	31		1	1
Fissidens bryoides var. caespitans	4	2	1	3
Fissidens celticus	1	3	1	4
Fissidens crassipes	24	1		1
Fissidens crispus	1	3		3
Fissidens exilis	9	2	1	3
Fissidens gracilifolius	16	1	1	2
Fissidens incurvus	8	1		1
Fissidens osmundoides	17	1	1	2
Fissidens rivularis	2	3	1	4
Fissidens viridulus	25	1		1
Fontinalis squamosa	20	1	1	2
Fossombronia fimbriata	1	3	1	4
Fossombronia incurva	1	3	1	4
Fossombronia pusilla	18	1		1
Fossombronia wondraczekii	14	1	1	2
Frullania tamarisci	29		1	1
Grimmia dissimulata	7	2	1	3
Grimmia donniana	2	3	1	4
Grimmia laevigata	1	3	1	4
Gymnostomum aeruginosum	11	1	1	2
Gymnostomum calcareum	7	2	1	3
Gyroweisia tenuis	12	1		1
Hedwigia ciliata var. ciliata	1	3		3

Table 7. Bryophytes of importance				
Name	**Tetrad Count**	**Scarcity Score**	**Habitat Score**	**Total Score**
Heterocladium heteropterum	46		1	1
Hookeria lucens	26		1	1
Hygroamblystegium fluviatile	17	1	1	2
Hygroamblystegium humile	1	3		3
Hygroamblystegium tenax	23	1		1
Hygroamblystegium varium	5	1		1
Hygrobiella laxifolia	5	2	1	3
Hylocomium splendens	80		1	1
Hypnum cupressiforme var. resupinatum	19	1		1
Isopterygiopsis pulchella	5	2	1	3
Isothecium alopecuroides	36		1	1
Isothecium holtii	1	3	1	4
Isothecium myosuroides	64		1	1
Jungermannia atrovirens	37		1	1
Jungermannia exsertifolia	10	2	1	3
Kurzia trichoclados	8	2	1	3
Leiocolea badensis	12	1		1
Leiocolea collaris	20	1	1	2
Leiocolea turbinata	7	2	1	3
Lejeunea cavifolia	13	1	1	2
Lejeunea lamacerina	11	1	1	2
Lepidozia pearsonii	2	3	1	4
Lepidozia reptans	152		1	1
Leptobryum pyriforme	15	1		1
Leptodontium flexifolium	38		1	1
Leucobryum glaucum s.l. (incl. L. juniperoideum)	5	2	1	3
Leucodon sciuroides	9	2	1	3

Table 7. Bryophytes of importance				
Name	**Tetrad Count**	**Scarcity Score**	**Habitat Score**	**Total Score**
Loeskeobryum brevirostre	2	3	1	4
Lophocolea fragrans	1	3	1	4
Lophozia bicrenata	2	3	1	4
Lophozia excisa	14	1	1	2
Lophozia incisa	10	2	1	3
Lophozia perssonii	4	2	1	3
Lophozia sudetica	2	3	1	4
Marchesinia mackaii	4	2	1	3
Marsupella emarginata var. aquatica	2	3	1	4
Marsupella emarginata var. emarginata	31		1	1
Metzgeria conjugata	9	2	1	3
Metzgeria consanguinea	14	1		1
Metzgeria pubescens	24	1	1	2
Microbryum curvicollum	1	3	1	4
Microbryum davallianum	11	1	1	2
Microbryum floerkeanum	1	3	1	4
Microbryum rectum	10	2	1	3
Microbryum starckeanum	1	3	1	4
Microlejeunea ulicina	4	2		2
Mnium marginatum var. dioicum	3	3	1	4
Mnium marginatum var. marginatum	3	3	1	4
Mnium thomsonii	4	2	1	3
Mylia anomala	1	3	1	4
Mylia taylorii	14	1	1	2
Nardia geoscyphus	4	2	1	3
Nowellia curvifolia	22	1	1	2
Odontoschisma denudatum	1	3	1	4
Orthothecium intricatum	13	1	1	2

Table 7. Bryophytes of importance				
Name	**Tetrad Count**	**Scarcity Score**	**Habitat Score**	**Total Score**
Orthotrichum acuminatum	1	3		3
Orthotrichum consimile	1	3		3
Orthotrichum sprucei	10	2	1	3
Orthotrichum striatum	8	2		2
Oxyrrhynchium pumilum	47		1	1
Oxyrrhynchium speciosum	6	1		1
Palustriella commutata s.str.	42		1	1
Palustriella falcata	10	2	1	3
Pedinophyllum interruptum	1	3	1	4
Philonotis arnellii	2	3	1	4
Philonotis calcarea	1	3	1	4
Philonotis fontana	69		1	1
Physcomitrium pyriforme	4	2	1	3
Physcomitrium sphaericum	2	3	1	4
Plagiobryum zieri	3	3	1	4
Plagiochila asplenioides	33		1	1
Plagiochila britannica	2	3	1	4
Plagiomnium elatum	1	3	1	4
Plagiomnium ellipticum	6	2	1	3
Plagiopus oederianus	6	2	1	3
Plagiothecium curvifolium	14	1		1
Plagiothecium laetum	6	1		1
Plagiothecium nemorale	24	1		1
Plagiothecium undulatum	144		1	1
Plasteurhynchium striatulum	6	2	1	3
Platydictya jungermannioides	3	3	1	4
Platyhypnidium lusitanicum	12	1	1	2

Table 7. Bryophytes of importance				
Name	**Tetrad Count**	**Scarcity Score**	**Habitat Score**	**Total Score**
Pleuridium acuminatum	13	1		1
Pleuridium subulatum	18	1		1
Pleurochaete squarrosa	3	3	1	4
Pohlia bulbifera	8	2	1	3
Pohlia camptotrachela	12	1	1	2
Pohlia cruda	31		1	1
Pohlia drummondii	3	3		3
Pohlia flexuosa	4	2	1	3
Pohlia lescuriana	3	3		3
Pohlia lutescens	10	2		2
Polytrichastrum alpinum	12	1	1	2
Polytrichastrum longisetum	6	2		2
Polytrichum strictum	3	3		3
Porella arboris-vitae	2	3	1	4
Porella cordaeana	26		1	1
Preissia quadrata	13	1	1	2
Pterogonium gracile	2	3	1	4
Ptilidium ciliare	34		1	1
Ptilidium pulcherrimum	7	2		2
Ptilium crista-castrensis	1	3	1	4
Ptychomitrium polyphyllum	13	1	1	2
Racomitrium affine	12	1		1
Racomitrium aquaticum	5	2	1	3
Racomitrium elongatum	1	3	1	4
Racomitrium ericoides	1	3	1	4
Racomitrium lanuginosum	46		1	1
Racomitrium sudeticum	1	3	1	4
Reboulia hemisphaerica	52		1	1
Rhizomnium pseudopunctatum	7	2	1	3
Rhodobryum roseum	6	2	1	3
Rhynchostegiella teneriffae	18	1	1	2
Rhynchostegium megapolitanum	1	3	1	4

Table 7. Bryophytes of importance				
Name	**Tetrad Count**	**Scarcity Score**	**Habitat Score**	**Total Score**
Rhytidiadelphus loreus	14	1	1	2
Rhytidiadelphus triquetrus	53		1	1
Rhytidium rugosum	7	2	1	3
Riccardia chamedryfolia	39		1	1
Riccardia multifida	36		1	1
Riccardia palmata	2	3	1	4
Riccia cavernosa	4	2	1	3
Riccia fluitans	1	3	1	4
Riccia glauca	13	1	1	2
Riccia subbifurca	1	3	1	4
Sanionia uncinata	26		1	1
Sarmentypnum exannulatum	18	1	1	2
Scapania aspera	54		1	1
Scapania compacta	2	3	1	4
Scapania curta	1	3	1	4
Scapania cuspiduligera	1	3	1	4
Scapania gracilis	7	2	1	3
Scapania irrigua	8	2	1	3
Scapania lingulata	1	3	1	4
Scapania nemorea	20	1	1	2
Scapania scandica	14	1	1	2
Scapania umbrosa	7	2	1	3
Schistidium elegantulum	2	2		2
Schistidium platyphyllum	2	3		3
Schistidium pruinosum	2	3	1	4
Schistidium rivulare s.str.	2	3	1	4
Schistidium robustum	1	3	1	4
Schistostega pennata	6	2	1	3
Scleropodium cespitans	23	1		1
Scorpidium cossonii	2	3	1	4
Scorpidium revolvens	6	2	1	3
Seligeria acutifolia	12	1	1	2
Seligeria brevifolia	2	3	1	4
Seligeria donniana	7	2	1	3

Table 7. Bryophytes of importance				
Name	**Tetrad Count**	**Scarcity Score**	**Habitat Score**	**Total Score**
Seligeria pusilla	4	2	1	3
Seligeria recurvata	28		1	1
Seligeria trifaria s.l.	3	3	1	4
Solenostoma caespiticium	2	3		3
Solenostoma hyalinum	1	3	1	4
Solenostoma obovatum	15	1	1	2
Solenostoma paroicum	7	2	1	3
Solenostoma sphaerocarpum	37		1	1
Sphagnum capillifolium	9	2	1	3
Sphagnum cuspidatum	9	2	1	3
Sphagnum flexuosum	14	1	1	2
Sphagnum girgensohnii	7	2	1	3
Sphagnum inundatum	6	1	1	2
Sphagnum magellanicum	1	3	1	4
Sphagnum papillosum	23	1	1	2
Sphagnum quinquefarium	7	2	1	3
Sphagnum russowii	28		1	1
Sphagnum squarrosum	45		1	1
Sphagnum subnitens	70		1	1
Sphagnum teres	4	2	1	3
Sphagnum warnstorfii	1	3	1	4
Splachnum ampullaceum	2	3	1	4
Splachnum sphaericum	8	2	1	3
Straminergon stramineum	46		1	1
Syntrichia laevipila	6	2		2
Syntrichia papillosa	2	3		3
Syntrichia princeps	1	3	1	4
Syntrichia virescens	13	1		1
Targionia hypophylla	9	2	1	3
Taxiphyllum wissgrillii	16	1	1	2
Tetraplodon mnioides	3	3	1	4
Tetrodontium brownianum	13	1	1	2

Table 7. Bryophytes of importance				
Name	**Tetrad Count**	**Scarcity Score**	**Habitat Score**	**Total Score**
Thamnobryum angustifolium	1	3	1	4
Thuidium assimile	11	1	1	2
Thuidium recognitum	2	3	1	4
Thuidium tamariscinum	132		1	1
Tortella bambergeri	3	3	1	4
Tortella nitida	2	3	1	4
Tortula cernua	1	3	1	4
Tortula lanceola	9	2	1	3
Tortula marginata	14	1		1
Tortula modica	17	1	1	2
Tortula protobryoides	8	2	1	3
Trichocolea tomentella	4	2	1	3
Trichostomum crispulum	38		1	1
Trichostomum tenuirostre	13	1	1	2
Tritomaria exsectiformis	9	2	1	3
Tritomaria quinquedentata	16	1	1	2
Warnstorfia fluitans	25	1	1	2
Weissia brachycarpa var. brachycarpa	7	2		2
Weissia longifolia s.l.	7	2	1	3
Weissia rostellata	6	2	1	3
Zygodon conoideus	21	1		1
Zygodon viridissimus var. stirtonii	20	1		1

Scarcity Score:
Recorded in 1-3 tetrads Score 3
Recorded in 4-10 tetrads Score 2
Recorded in 11-25 tetrads Score 1

Habitat Score
Score of 1 for each species that is normally associated with good quality habitat

Epiphyte Score
Site with 9+ epiphytes Score 3
Site with 6-8 epiphytes Score 2

Site with 3-5 epiphytes Score 1

Total score for a site = cumulative total score (scarcity score + habitat score) + epiphyte score

12.4.4 Stoneworts and other Algae

Application (all algae guidelines)
The following guidelines apply only to stoneworts (charophytes), flowerless aquatic plants of uncertain taxonomic affinities probably distantly related to green algae. Only sites from which relevant species records have been made since 1987 should be considered.

Justification
Although generally little known and under-recorded stoneworts are conspicuous aquatic plants, characteristic of a range of relatively unpolluted lowland waters, especially large ponds, pools and canals. The current level of knowledge on this group of organisms is very poor. It is currently estimated that around 5 species occur in Derbyshire. Further work on the status of species in Derbyshire is in preparation. Insufficient data is presently available on the distribution of other algae (most of which are microscopic) to include guidelines based upon them.

Stoneworts and other algae Selection Guidelines
Sites that meet one or more of the following guidelines will be eligible for designation as a Local Wildlife Site.

St1 Any site which supports a population of stonewort species that is,

a) listed under Schedule 8 of the Wildlife and Countryside Act 1981 (as amended) or
b) a Red Data listed species or
c) a species considered to be 'nationally scarce'

Application
This guideline should be applied to any site supporting one of these species. Species present in Derbyshire that fall into these categories have not yet been identified. Lists of all Red Data and 'nationally scarce' species are maintained and updated by JNCC and available for downloading from the JNCC website (http://www.jncc.gov.uk)

Justification
These species are the rarest and or most threatened in the British Isles. Consequently, the protection, maintenance and enhancement of the populations of these species in Derbyshire is vital for sustaining biological diversity throughout the British Isles.

St2 Any site that supports a species for which Derbyshire is a stronghold within the region or for which there are three or fewer localities known in the County.

Application
All sites for stoneworts in the above category which are not covered elsewhere should be considered.

Justification
Some of these species may be common elsewhere in Britain but are rare in Derbyshire. We therefore have a responsibility to conserve the most important populations of these species.

St3 Any site that supports a significant proportion of the Derbyshire population, or contributes significantly to the range in Derbyshire, of a stonewort species that is recorded from more than 3 localities within the County, but which could be at risk because of very small populations, recent rapid decline, or habitat loss or change.

Application
All sites for stoneworts in the above category which are not covered elsewhere may be considered where they significantly extend the range of the species in Derbyshire or support a significant proportion of the Derbyshire population of that species. There is currently insufficient information to provide a complete listing of these species.

Justification
Species included here whilst not immediately in danger of extinction in the County may, nevertheless, be at risk and could fall into the endangered category without adequate preventative measures.

12.2 Flowering Plants, Ferns and Allies

The Red Data List of Derbyshire's Vascular Plants (Moyes & Willmot, 2009) identifies plant species of conservation concern within the county. This list encompasses plant species native to Derbyshire which are of conservation concern at levels ranging from international through to local.

The Red Data List of Derbyshire Vascular Plants has been adopted to form the following selection guidelines, with Table 8 below providing an explanation of the conservation status codes used within the list and subsequently within these guidelines.

The Red Data List includes a table listing native plants which have historically been recorded within Derbyshire, but which have not been re-found since 1969. Should any of these species, or other native species which have not previously been recorded in Derbyshire, subsequently be discovered they would invariably then fall into one of the other categories and therefore be covered by the guidelines.

Table 8: Key to conservation status	
Status	**Explanation**
IR (Internationally Rare)	Endemic, restricted international distribution & listed in 'The Vascular Red Data Plant List for Great Britain'
NT (Nationally Threatened)	All International Union for Conservation of Nature (IUCN) categories: CR - Critically Rare EN – Endangered VU – Vulnerable NT - Near Threatened
NS (Nationally Scarce)	Species occurring in 16-100 Hectads in Great Britain but excluding rare species which qualify under the above main IUCN criteria.
LR (Locally Rare)	Known in 3 or fewer Derbyshire 1km squares (monads) from 1969 onwards, and not in any category above.
LS (Locally Scarce)	Known in 4 to 10 1km squares (monads) from 1969 onwards, and not in any category above
LD (Locally Declining)	Thought to be exhibiting serious recent decline. This is based on analysis of records from 2 consecutive 21 year periods. The detail of this analysis is provided within the Red Data List of Derbyshire's Vascular Plants.

Flowering Plants, ferns and allies Selection Guidelines
Sites that meet one or more of the following guidelines will be eligible for designation as a Local Wildlife Site.

Ff1 Any site which supports a population of plant species native to Derbyshire listed under either Category 1 (Internationally Rare), Category 2 (Nationally Threatened) or Category 3 (Nationally Scarce) of the Red Data List of Derbyshire's Vascular Plants (2009) or subsequent updates:

Application
This guideline can be applied to any plant species listed in the above categories of the Derbyshire Red Data List, including native species not recently or previously recorded. However, discretion should be used in relation to more widespread species that fall into these categories. In some cases, the plant species present should be considered in the context of the overall quality of the vegetation community of which it is a part. This is especially relevant to Spring Sandwort, Large-leaved Lime and Mountain Currant. The plant species listed in Table 9a fall into this category.

Justification
Rare and declining plant species are often not protected through habitat specific guidelines and to ensure that these important plant species do not decline any site supporting a plant in one of the above categories can be selected as a Local Wildlife Site.
Table 9a Plant species recorded within Derbyshire with a national or international conservation status

Table 9a. Plant species within Derbyshire with a National or International Conservation Status			
Scientific Name	**Common Name**	**Status**	**No. post 1986 monads (DBRC – 2009)**
Allium oleraceum	Field Garlic	VU	21
Anacamptis morio	Green-winged Orchid	NT	2
Anagallis arvensis ssp .foemina	Blue Pimpernel	NS	0
Anagallis minima	Chaffweed	NT	0
Anthemis cotula	Stinking Chamomile	VU	0
Asplenium trichomanes ssp. pachyrachis	a Maidenhair Spleenwort	NR	3
Baldellia ranunculoides	Lesser Water-plantain	NT	1
Blysmus compressus	Flat-sedge	VU	6
Bromopsis benekenii	Lesser Hairy-brome	NS	1
Callitriche truncata	Short-leaved Water-starwort	NS	4
Cardamine impatiens	Narrow-leaved Bitter-cress	NT, NS	33
Carex digitata	Fingered Sedge	NS	9
Carex ericetorum	Rare Spring-sedge	VU, NS	1
Carex montana	Soft-leaved Sedge	NS	3
Carex ornithopoda	Bird's-foot Sedge	NR	7
Chamaemelum nobile	Chamomile	VU	0
Clinopodium acinos	Basil Thyme	VU	9
Coeloglossum viride	Frog Orchid	VU	44
Cynoglossum officinale	Hound's-tongue	NT	1
Daphne mezereum	Mezereon	VU, NS	13
Dianthus deltoides	Maiden Pink	NT, NS	16
Draba muralis	Wall Whitlowgrass	NS	51
Epipactis atrorubens	Dark-red Helleborine	NS	9
Epipactis phyllanthes	Green-flowered Helleborine	NS	1
Euphorbia exigua	Dwarf Spurge	NT	20
Euphrasia anglica	an eyebright	EN	2
Euphrasia officinalis ssp. pratensis	an eyebright	VU	1

Table 9a. Plant species within Derbyshire with a National or International Conservation Status			
Scientific Name	**Common Name**	**Status**	**No. post 1986 monads (DBRC – 2009)**
Filago vulgaris	Common Cudweed	NT	32
Galeopsis angustifolia	Red Hemp-nettle	CR, NS	7
Galeopsis speciosa	Large-flowered Hemp-nettle	VU	13
Genista anglica	Petty Whin	NT	7
Gentianella campestris	Field Gentian	VU	2
Gnaphalium sylvaticum	Heath Cudweed	EN	2
Groenlandia densa	Opposite-leaved Pondweed	VU	0
Gymnocarpium robertianum	Limestone Fern	NS	29
Helleborus foetidus	Stinking Hellebore	NS	16
Hieracium acuminatum	a hawkweed	NR	
Hieracium naviense	a hawkweed	NR	1
Hordelymus europaeus	Wood Barley	NS	23
Hornungia petraea	Hutchinsia	NS	22
Hyoscyamus niger	Henbane	VU	3
Hypericum montanum	Pale St. John's-wort	NT	17
Hypopitys monotropa	Yellow Bird's-nest	EN	7
Juncus compressus	Round-fruited Rush	NT	5
Limosella aquatica	Mudwort	NS	5
Lithospermum arvense	Field Gromwell	EN	2
Luronium natans	Floating Water-plantain	IR	0
Mentha pulegium	Pennyroyal	EN, NS	1
Minuartia hybrida	Fine-leaved Sandwort	EN, NS	2
Minuartia verna	Spring Sandwort	NT, NS	125
Myriophyllum verticillatum	Whorled Water-milfoil	VU	2
Neotinea ustulata	Burnt Orchid	EN, NS	6
Neottia nidus-avis	Bird's-nest Orchid	NT	10
Nepeta cataria	Cat-mint	VU	6
Noccaea caerulescens	Alpine Penny-cress	NS	45
Oenanthe fistulosa	Tubular Water-dropwort	VU	11
Ophrys insectifera	Fly Orchid	VU	13
Orobanche purpurea	Yarrow Broomrape	VU, NR	0
Papaver argemone	Prickly Poppy	VU	1
Persicaria minor	Small Water-pepper	VU	1
Platanthera bifolia	Lesser Butterfly-orchid	VU	0
Platanthera chlorantha	Greater Butterfly-orchid	NT	6

Table 9a. Plant species within Derbyshire with a National or International Conservation Status			
Scientific Name	**Common Name**	**Status**	**No. post 1986 monads (DBRC – 2009)**
Polemonium caeruleum	Jacob's-ladder	NR	54
Polygonatum odoratum	Angular Solomon's-seal	NS	2
Potamogeton compressus	Grass-wrack Pondweed	EN, NS	3
Potamogeton friesii	Flat-stalked Pondweed	NT, NS	1
Potamogeton praelongus	Long-stalked Pondweed	NT	2
Potentilla argentea	Hoary Cinquefoil	NT	7
Potentilla crantzii	Alpine Cinquefoil	NS	3
Potentilla neumanniana	Spring Cinquefoil	NS	51
Pyrola rotundifolia ssp. rotundifolia	Round-leaved Wintergreen	NT, NS	0
Ranunculus arvensis	Corn Buttercup	CR	2
Ribes alpinum	Mountain Currant	NS	31
Rubus durescens	a bramble	NR	4
Saxifraga hypnoides	Mossy Saxifrage	VU	76
Scandix pecten-veneris	Shepherd's-needle	CR	1
Scleranthus annuus	Annual Knawel	EN	2
Sesleria caerulea	Blue Moor-grass	NS	1
Silene nutans	Nottingham Catchfly	NT, NS	24
Sorbus rupicola	a whitebeam	NS	23
Spiranthes spiralis	Autumn Lady's-tresses	NT	0
Stachys arvensis	Field Woundwort	VU	25
Stellaria palustris	Marsh Stitchwort	VU	13
Teesdalia nudicaulis	Shepherd's Cress	NT	1
Thelypteris palustris	Marsh Fern	NS	1
Tilia platyphyllos	Large-leaved Lime	NS	56
Trichomanes speciosum	Killarney Fern	IR	2
Turritis glabra	Tower Mustard	EN, NS	0
Valerianella dentata	Narrow-fruited Cornsalad	EN	0
Viola canina	Heath Dog-violet	NT	10
Viola tricolor ssp. tricolor	Wild Pansy	NT	2
Wahlenbergia hederacea	Ivy-leaved Bellflower	NT	14

Ff2 Any site which supports a population of plant species listed as 'Locally Rare' on the Red Data List of Derbyshire's Vascular Plants.

Application
All sites supporting a population of a plant in the above category can be included, except for those populations which are the result of deliberate introductions (which do not form part of a species recovery programme) or localities where a species occurs as a short-term casual. Table 9b lists those species that fall into the 'Locally Rare' category

Justification
Locally Rare plant species are vulnerable to local extinction and should be protected at their key sites.

Table 9b Plant species recorded within Derbyshire considered to be Locally Rare (known in 3 or fewer 1 km squares from 1969 onwards but without an international or national conservation status)

Table 9b. Plant species recorded within Derbyshire considered to be Locally Rare			
Scientific Name	**Common Name**	**Status**	**No. post 1986 monads (DBRC – 2009)**
Calamagrostis canescens	Purple Small-reed	LR	0
Callitriche hermaphroditica	Annual Water-starwort	LR	2
Carex distans	Distant Sedge	LR	0
Carex elata	Tufted Sedge	LR	1
Ceratophyllum submersum	Soft Hornwort	LR	1
Colchicum autumnale	Meadow Saffron	LR	0
Eleocharis quinqueflora	Few-flowered Spike-rush	LR	1
Epipactis palustris	Marsh Helleborine	LR	1
Equisetum hyemale	Rough Horsetail	LR	1
Eriophorum latifolium	Broad-leaved Cottongrass	LR	3
Euphorbia amygdaloides	Wood Spurge	LR	3
Fumaria capreolata	White Ramping-fumitory	LR	0
Geranium sylvaticum	Wood Crane's-bill	LR	0
Hypericum elodes	Marsh St. John's-wort	LR	0
Juncus foliosus	Leafy Rush	LR	1
Lathyrus nissolia	Grass Vetchling	LR	2
Oenanthe fluviatilis	River Water-dropwort	LR	1
Orobanche rapum-genistae	Greater Broomrape	LR	0
Osmunda regalis	Royal Fern	LR	0
Pedicularis palustris	Marsh Lousewort	LR	0
Polypodium cambricum	Southern Polypody	LR	1
Ranunculus sardous	Hairy Buttercup	LR	2
Samolus valerandi	Brookweed	LR	1
Trientalis europaea	Chickweed Wintergreen	LR	1
Trifolium fragiferum	Strawberry Clover	LR	0

Table 9b. Plant species recorded within Derbyshire considered to be Locally Rare			
Scientific Name	**Common Name**	**Status**	**No. post 1986 monads (DBRC – 2009)**
Ulmus plotii	Plot's Elm	LR	0
Vaccinium uliginosum	Bog Bilberry	LR	1

Ff3 Any site that supports a population of plant species categorised as 'Locally Scarce' or 'Declining' within the Red Data List of Derbyshire's Vascular Plants where the population is considered to be native to that site.

Application
All sites supporting a naturally established population of a plant in the above categories can be considered for designation. Exceptions to this are populations which are the result of deliberate introductions (unless this is part of an approved habitat creation or habitat enhancement programme), translocations, or where species occur as a short-term casual Table 9c lists species that fall into these categories.

Justification
Species included here whilst not immediately in danger of extinction in the County may, nevertheless, be at risk and could fall into the Locally Rare category without adequate preventative measures.

Table 9c Plant species recorded within Derbyshire considered to be Locally Scarce (known in 4 to 10 monads from 1969 onwards but without an international or national conservation status) or Declining (thought to be exhibiting serious recent local decline on the basis of data analysis)

Table 9c. Plant species recorded within Derbyshire considered to be Locally Scarce			
Scientific Name	**Common Name**	**Status**	**No. post 1986 monads (DBRC – 2009)**
Agrimonia procera	Fragrant Agrimony	LD	6
Alisma lanceolatum	Narrow-leaved Water plantain	LS	6
Allium scorodoprasum	Sand Leek	LS	5
Alopecurus aequalis	Orange Foxtail	LD	10
Anagallis tenella	Bog Pimpernel	LD	11
Antennaria dioica	Mountain Everlasting	LD	10
Anthriscus caucalis	Bearberry	LS	1
Apium inundatum	Lesser Marshwort	LD	3
Arctostaphylos uva-ursi	Bur Parsley	LS	8

Table 9c. Plant species recorded within Derbyshire considered to be Locally Scarce			
Scientific Name	**Common Name**	**Status**	**No. post 1986 monads (DBRC – 2009)**
Asplenium trichomanes ramosum	Green Spleenwort	LD	23
Bromopsis erecta	Upright Brome	LD	19
Callitriche brutia ssp. hamulata	Intermediate Water- starwort	LD	3
Callitriche obtusangula	Blue-fruited Water- starwort	LS	4
Callitriche platycarpa	Various-leaved Water- starwort	LD	12
Campanula glomerata	Clustered Bellflower	LD	16
Carex acuta	Slender Tufted-sedge	LD	6
Carex dioica	Dioecious Sedge	LS	1
Carex disticha	Brown Sedge	LD	13
Carex divulsa	Grey Sedge	LS	4
Carex hostiana	Tawny Sedge	LD	3
Carex muricata ssp.pairae	Prickly Sedge	LD	0
Carex pallescens	Pale Sedge	LD	25
Carex strigosa	Thin-spiked Wood- sedge	LS	7
Carex vesicaria	Bladder-sedge	LD	19
Catabrosa aquatica	Whorl-grass	LS	3
Circaea alpina x lutetiana (C. x intermedia)	Upland Enchanter's- nightshade	LD	2
Cirsium dissectum	Meadow Thistle	LS	4
Clinopodium ascendens	Common Calamint	LD	6
Dactylorhiza incarnata	Early Marsh-orchid	LS	5
Diphasiastrum alpinum	Alpine Clubmoss	LD	7
Dipsacus pilosus	Small Teasel	LD	17
Dryopteris carthusiana	Narrow Buckler-fern	LD	60
Eleocharis acicularis	Needle Spike-rush	LS	3
Epilobium roseum	Pale Willowherb	LD	24
Festuca altissima	Wood Fescue	LS	6
Festuca filiformis	Fine-leaved Sheep's- fescue	LS	1
Filago minima	Small Cudweed	LS	4
Fumaria muralis	Common Ramping- fumitory	LS	5
Gagea lutea	Yellow Star-of- Bethlehem	LD	18
Galium uliginosum	Fen Bedstraw	LD	24
Genista tinctoria	Dyer's Greenweed	LD	52
Helleborus viridis	Green Hellebore	LD	13
Hippocrepis comosa	Horseshoe Vetch	LS	3

Table 9c. Plant species recorded within Derbyshire considered to be Locally Scarce			
Scientific Name	**Common Name**	**Status**	**No. post 1986 monads (DBRC – 2009)**
Hottonia palustris	Water-violet	LD	7
Jasione montana	Sheep's-bit	LD	8
Juncus subnodulosus	Blunt-flowered Rush	LS	1
Kickxia elatine	Sharp-leaved Fluellen	LS	2
Lathyrus sylvestris	Narrow-leaved Everlasting-pea	LS	2
Legousia hybrida	Venus's-looking-glass	LS	1
Leontodon saxatilis	Lesser Hawkbit	LD	44
Lepidium heterophyllum	Smith's Pepperwort	LD	7
Lithospermum officinale	Common Gromwell	LD	9
Lotus tenuis	Narrow-leaved Bird's- foot-trefoil	LS	3
Lycopodium clavatum	Stag's-horn Clubmoss	LD	16
Menyanthes trifoliata	Bogbean	LD	26
Myriophyllum alterniflorum	Alternate Water-milfoil	LS	4
Nasturtium microphyllum	Narrow-fruited Watercress	LD	19
Oenanthe aquatica	Fine-leaved Water- dropwort	LS	8
Ononis spinosa	Spiny Restharrow	LD	14
Ornithopus perpusillus	Bird's-foot	LD	6
Orobanche minor	Common Broomrape	LS	2
Paris quadrifolia	Herb Paris	LD	7
Pinguicula vulgaris	Common Butterwort	LD	29
Poa angustifolia	Narrow-leaved Meadow-grass	LS	5
Potamogeton alpinus	Red Pondweed	LS	1
Potamogeton lucens	Shining Pondweed	LS	2
Potamogeton obtusifolius	Blunt-leaved Pondweed	LS	2
Potamogeton perfoliatus	Perfoliate Pondweed	LD	7
Potentilla palustris	Marsh Cinquefoil	LD	10
Ranunculus circinatus	Fan-leaved Water- crowfoot	LD	14
Rubus saxatilis	Stone Bramble	LD	19
Salix purpurea	Purple Willow	LD	20
Scirpus sylvaticus	Wood Club-rush	LD	24
Scrophularia umbrosa	Green Figwort	LS	1
Serratula tinctoria	Saw-wort	LD	28
Silaum silaus	Pepper-saxifrage	LD	8
Sison amomum	Stone Parsley	LS	3
Spergularia rubra	Sand Spurrey	LD	22

Table 9c. Plant species recorded within Derbyshire considered to be Locally Scarce			
Scientific Name	**Common Name**	**Status**	**No. post 1986 monads (DBRC – 2009)**
Stellaria pallida	Lesser Chickweed	LS	0
Thalictrum flavum	Common Meadow-rue	LD	14
Trifolium subterraneum	Subterranean Clover	LS	3
Triglochin palustris	Marsh Arrowgrass	LD	26
Trollius europaeus	Globe-flower	LD	24
Valeriana dioica	Marsh Valerian	LD	37
Verbascum nigrum	Dark Mullein	LD	15
Verbena officinalis	Vervain	LS	3
Veronica polita	Grey Field-speedwell	LD	10
Veronica scutellata	Marsh Speedwell	LD	9
Vicia sylvatica	Wood Vetch	LS	7
Zannichellia palustris	Horned Pondweed	LD	12

12.3 Invertebrates

Application (all invertebrate guidelines)

The determination of the boundaries for a site designated under invertebrate guidelines should take account of the requirements of invertebrate species for habitat and structural diversity both at the macro and micro scales. The requirement of invertebrates for different habitats reflects their complex lifecycles that often involve one or more larval and adult phases. Invertebrates generally have annual life cycles, and their survival on a site depends on the continued availability of the right mixture of habitats at the right time of year – every year. In addition, many invertebrates tend to have very narrow habitat or ecological niches.

Invertebrate habitats can include small scale features such as a patch of bare ground or length of deadwood and these habitats can be transient in space and time shifting around within a larger habitat e.g. wetland or woodland, on which the invertebrates also depend. In addition, some invertebrates may be dependent on both small-scale habitats such as ditches and a larger habitat such as a river or stream. In these instances, the associate habitats, although possibly isolated, should be considered within the context of a larger designation.

At the present time supplements to the invertebrate section of the Derbyshire Red Data Book are being prepared and it is anticipated that lists of species relating to different selection criteria will be available for use soon. For the time being therefore no species lists are included.

Justification

In Derbyshire, as elsewhere, there are more species of invertebrate animals than of all the plants and other animals combined. Many invertebrate groups and species have declined dramatically in recent decades, and their conservation is a matter of widespread concern in Europe.

Invertebrates' tendency to have narrow ecological niches coupled with poor powers of dispersal, means that they can be the most vulnerable taxa in the context of habitat fragmentation and increasing isolation, and are prone to local extinction. Until recently it was thought that if sites were selected (and managed) based on the botanical interest, the invertebrates would automatically be catered for too. This is not so: it is important that due regard is paid to the contribution that invertebrates make to biodiversity, and of their habitat needs as far as available information allows.

With many invertebrate groups and the relative lack of information about these, it is impossible to develop individual sets of guidelines for every species-group at the present time. However, the process of selecting sites for individual groups of invertebrates will be kept under review and as a more comprehensive database of sites and invertebrate species is collated it is hoped that more specific guidelines may be added to complement the guidelines described here.

Invertebrate Selection Guidelines
Sites that meet one or more of the following guidelines will be eligible for designation as a Local Wildlife Site.

Inv 1 Any site that regularly supports a population of an invertebrate species, which is listed in any of the following:

a) Schedule 5 of the Wildlife and Countryside Act 1981 as revised and amended
b) British Red Data Books: 2. Insects or British Red Data Books: 3 Invertebrates other than insects or appropriate updates.
c) a nationally rare or scarce species list or
d) occurs at 3 or fewer localities in Derbyshire

Application
Any site identified in one of the above categories may be considered for selection. The potential population size of the species should be considered, and extra weight should be placed upon sites where evidence for a persistent population is present. This could be presence over several years or many individuals captured in one year or even during one site visit. Experienced invertebrate field surveyors should be consulted prior to designation.

A full list of species falling into all these categories has not yet been compiled specifically for Derbyshire, so for the moment the assessment must consider national and local publications on distributions and abundance of different invertebrate groups.

This guideline can be applied to any type of site.

Justification
Species included in the above categories are identified as being rare or threatened at a national or European scale, or rare within the County.

Inv 2 Any site that regularly supports a significant proportion of the Derbyshire population, or contributes significantly to the range in Derbyshire, of an invertebrate species which is recorded from more than three localities in the County, but which could be at risk because of very small populations, recent rapid decline or habitat loss or change, and which is not included under any other guideline.

Application
This guideline can be applied for any species belonging to any invertebrate group. This guideline should be applied where UK BAP priority species are present, but other species can also be included. Ideally sufficient information should be available on the abundance and distribution of species within Derbyshire, or it should be demonstrated that the species or the habitat it occurs in is regionally rare or uncommon.

Justification
Small populations, nationally or locally declining species or species dependent on threatened habitat types are in greater need of protection through the LWS system. Recent reports on butterflies and larger moths highlight the continued declines in species that were once very common e.g. the small heath or garden tiger. It is likely that the same is true of some other invertebrate taxa. The designation of a site under this guideline should be made in consultation with local and regional experts and consider any ongoing changes in the extent of habitat types or the status of a particular species.

Inv 3 Any site supporting a characteristic or significant assemblage of invertebrates including those associated with the following microhabitats: -

- ***Deadwood***
- ***Veteran trees***
- ***Scrub***
- ***Woodland edge habitat***
- ***Rough grassland displaying structural heterogeneity e.g. tussocks, light and shaded areas, damp hollows***
- ***Bare soil and or rock including both natural geological strata and imported material***
- ***Open vegetation***
- ***Brownfield sites***
- ***Wetlands including microhabitats associated with running and still water and seasonal and temporary pools***
- ***Hill slope and rock-face seepages and flushes***

Application
An assemblage can be composed of a diversity of species within one or more families or orders. The guideline can be used for any assemblage of invertebrates associated with any of the habitat types covered elsewhere in the guidelines or for any microhabitats as listed above. For many families or orders of invertebrates we have insufficient information to allow meaningful threshold

values for site selection to be agreed upon. For the present a flexible approach is to be adopted in determining how characteristic or significant an invertebrate assemblage is based on consultation with both national and local invertebrate specialists.

This guideline will be subject to re-assessment as additional information on invertebrate species, populations and assemblages within Derbyshire is collated. Thresholds may be added in due course for selected groups.

Sites being looked at under this guideline should include the following information to assist in the selection process: -

- A list of invertebrate species present on the site where possible linked to habitats and microhabitats
- A list of survey events and recorders (to provide an indication of search effort)
- Invertebrate species considered to be associated with or significant within the Natural Area that the site lies in should be highlighted (according to Drake et al, 1998).
- A score derived from the invertebrate site index below (provisional adaptation from English Nature)

Category	Points
RDB1, 2	100
RDB 3, Notable A (Na)	50
Notable B (Nb)	40
Notable (Region) (Nr)	20
Derbyshire Red Data Book	10

The boundaries of the site should reflect, as far as possible all the key physical and biological features required for the invertebrate species present.

Justification
Invertebrates are the most diverse and abundant animal group and play an essential role in maintaining functional ecosystems. Their diversity often reflects the variety of ecological niches available within different habitats and microhabitats. Identifying and protecting these habitats is essential if we are to protect the full range of invertebrate biodiversity present in Derbyshire and surrounding areas.

Inv4 Any site regularly supporting 22 or more butterfly species.

Application
The guideline can be applied to any site of whatever size that has records of 22 butterfly species over at least a three-year period.

Justification
Derbyshire supports just over 30 species of butterfly and only a handful of sites are likely to support 22 or more species over this period. There are 16 widespread and common species so a site with 22 will also include at least a few species of more localised or restricted distribution.

Inv5 Any site regularly supporting 45 or more hoverfly species.

Application
The guideline can be applied to any site of whatever size that has records of 45 hoverfly species over at least a two-year period.

Justification
Derbyshire supports just over 130 species of hoverfly and a notable assemblage for this group would be between 45 and 70 with anything over that being exceptional.

Inv6 Any site that supports a water beetle assemblage that scores 25 or above or scores between 20 and 24 and has at least 6 Local A and/or Local B species in any combination.

Application
The guideline can be applied to any of the ponds listed as notable ponds in Appendix 4 of the Atlas of the water beetles (Coleoptera) and water bugs (Hemiptera) of Derbyshire, Nottinghamshire and South Yorkshire, 1993 – 2005 (Merritt, R, 2006) or any other pond that has been subject to a detailed water beetle survey. Any pond to be designated should be subject to a visit to check on the current physical condition of the pond.

Assemblage scores are calculated by the following formula: -

(Species richness - the number of notable species) + (the number of Nationally Rare species x 8) + (the number of Nationally Scarce species x 6) + (the number of Local A species x 4) + (the number of Local B species x 2).

For example, for the site known as the River Rother cut-offs, Killamarsh the calculation would be as follows:-

Species richness	= 26 (including 9 'notable' species)
Nationally Rare	= 0
Nationally Scarce	= 0
Local A	= 5
Local B	= 3

(26 – 9) + (0X8) + (0X6) + (5X4) + (3X2) = 15 + 0 + 0 + 20 + 6
= 41

Justification

Noteworthy beetle ponds as identified in Appendix 4 of the Atlas account for just 22% of those visited and this guideline would allow designation of an estimated 70% of those. These ponds are therefore considered the very best sites for water beetles in the County reflecting both overall species richness and national and local status and are therefore of high nature conservation interest and value. In Derbyshire it is estimated this could be in the region of 150 ponds.

The designation of Local Wildlife Sites for water beetles and water bugs is based on the extensive field work of Bob Merritt, both before and after the publication of his Atlas by the Sorby Natural History Society (Merritt, 2006). At that time, the JNCC national statuses for both these groups were very out of date and the author devised an unofficial system to identify "noteworthy" sites based on counts of hectad occupancy in Britain as shown on the NBN Gateway.

Since the publication of the Atlas, JNCC has published a set of revised national statuses for water beetles (Foster, 2010). Where applicable, these will be used in the designation of Local Wildlife Sites along with the unofficial criteria referred to above. A justification for continuing to use these unofficial criteria may be found in JNCC's latest review in which Foster states, referring to certain species which fell outside the scope of the Review: "Nevertheless many of these species have a conservation value as indicators of good quality sites. Development of a new system of scoring sites or upgrading of existing systems……is desirable to take advantage of the extensive recording of such species."

The official statuses applicable to Derbyshire's rarer water beetles, taken from the latest national Review, are:

1) Near Threatened. This category is used to identify species that need to be kept under review to ensure that they have not become vulnerable to extinction, and applies to species for which a potential threat, natural habitat dependency or range change demand frequent review of status.

2) Nationally Scarce. This category is used for species recorded from 16 to 100 hectads of the Ordnance Survey national grid in Great Britain since 1980, and which qualify for neither a Threatened status nor a Near Threatened status.

The unofficial statuses to be used in SINC designation of water beetles and water bugs are:

Rare	= 30 hectads or fewer (water bugs only)
Scarce	= 31-100 hectads (water bugs only)
Local A	= 101-200 hectads
Local B	= 201-400 hectads
Common	= 401+ hectads.

To ensure that the distributions shown on the Gateway are accurate and reliable, only a few of the datasets available for selection were selected when compiling the lists in Annex 1 and Annex 2, namely that of the Balfour-Browne-Club (which ran the water beetle national recording scheme for BRC, and now renamed the Aquatic Coleoptera Conservation Trust), the Aquatic Heteroptera Recording Scheme's Aquatic Heteroptera Dataset, and the Biological Records Centre's Water Bug Data for Britain. Records were chosen for the 25-year period immediately preceding the year of the most recent national update of data for that dataset. (NB. The species' statuses published in the Atlas have been updated in this document).

Inv7 Any site that supports a water bug assemblage that scores 16 or above.

Application
The guideline can be applied to any of the ponds listed as notable ponds in Appendix 7 of the Atlas of the water beetles (Coleoptera) and water bugs (Hemiptera) of Derbyshire, Nottinghamshire and South Yorkshire, 1993 – 2005 (Merritt, R, 2006) or any other pond that has been subject to a detailed water bug survey. Any pond to be designated should be subject to a visit to check on the current physical condition of the pond.

Assemblage scores are calculated by the following formula: -

(Species richness - the number of notable species) + (the number of Nationally Rare species x 8) + (the number of Nationally Scarce species x 6) + (the number of Local A species x 4) + (the number of Local B species x 2).

Justification
Noteworthy bug ponds as identified in Appendix 7 of the Atlas account for just 13% of those visited and this guideline would allow designation of an estimated 66% of those. These ponds are therefore considered the very best sites for water bugs in the County reflecting both overall species richness and national and local status and are therefore of high nature conservation interest and value. In Derbyshire it is estimated there could be in the region of 50 - 75 ponds that might meet the guideline.

Inv8 Any site that supports a dragonfly assemblage of 10 or more breeding species.

Application
All 10 species should have been recorded as breeding (based on the definitions below) within 10 years of the proposed designation date.

Successful Breeding
Confirmed - exuvia present (presence of an exuvia constitutes absolute proof that at least one specimen has completed a cycle from egg to adult at the site).

Probable Breeding - larva present or female ovipositing or teneral (newly emerged adult) or regular presence of both sexes (normally annual presence in reasonable numbers or a repeated period consistent with the species' life-cycle length). All records to be at, or adjacent to, a suitable water body.

Possible Breeding – pair copulating or female seen at a water body suitable for the species where at least one male has been observed to be engaged in some form of reproductive behaviour, such as territoriality or pursuing females.

Adult(s) Present, but none of the above breeding evidence or behaviour observed.

For a Site Assemblage LWS designation everything in Confirmed and Probable Breeding should be included.

Justification
Successful breeding ponds for dragonflies have declined in recent decades and designation as a LWS should help to raise awareness and provide a degree of protection. A threshold value of 11 is recommended for Nottinghamshire by David Goddard who is the Dragonfly Recorder for Derbyshire and Nottinghamshire Entomological Society. A slightly lower threshold level has been set for Derbyshire.

12.4 Amphibians

Application (all amphibian guidelines)
These guidelines are aimed at identifying and selecting important amphibian sites excluding domestic gardens. As well as the presence and absence of species the guidelines also utilise estimates of population sizes. These are based on the guidelines for the selection of SSSIs (JNCC, 1998). To rely on count data, information should be gathered by experienced personnel. Data should be available for two years out of a five-year period.

The designation of sites should attempt to include both aquatic and terrestrial habitats of importance. Consequently, as well as breeding ponds sites should include adjacent habitat known or likely to be used by the amphibian species for which the site is designated. Hibernating sites should be included wherever possible.

Where there are clusters of ponds that all contribute to maintaining a meta- population of an amphibian species they can all be included potentially as one site. The ponds should not be separated by any obvious barriers and preferably connected by suitable amphibian terrestrial habitat. In general water bodies within 100 metres of each other should be lumped together as a cluster. Where there are isolated ponds within 500 metres of the cluster they could also be considered for inclusion if they are connected by amphibian terrestrial habitat, known to be used or likely to be used by amphibians.

Justification (all amphibian guidelines)
All amphibian species are believed to have declined significantly over Britain in recent years, largely because of habitat loss and pollution. Derbyshire remains an important county for amphibians and has records of five native amphibians. The common frog and toad are widely distributed within the county, although their main breeding habitats (ponds) are threatened by infilling, lack of management and processes of natural succession. The smooth newt is relatively common across Derbyshire except in the Dark Peak where the palmate newt is more frequent.

The Great Crested Newt is well established in parts of the White Peak Natural Area but has a scattered distribution in the east and south of the county. The Common Toad was included as a UK BAP priority species following the 2007 UK BAP Review

The protection of the best breeding sites and associated terrestrial habitat is justified for all species.

Amphibian Selection Guidelines
Sites that meet one or more of the following guidelines will be eligible for designation as a Local Wildlife Site.

Am1 Any site that regularly supports four or more species of amphibian native to Derbyshire.

Application
Sites identified under this heading should exclude garden ponds, swimming pools and any known introduced populations. The boundary of the site should also include an appropriate amount of adjacent land for hibernation and foraging.

Justification
The presence of four or more amphibian species is a significant assemblage of amphibians for Derbyshire.

Am2 Any site which scores 7 or more from table 10 on its amphibian species assemblage.

Application
To determine the amphibian assemblage score reference should be made to Table 10. The scores must be for breeding sites surveyed during the breeding season. Daytime netting should be made during a 15-minute period for sites for every 50 metre of water's edge. To compute the total score, add the scores for individual species. Add one point for three species being present.

Justification
Five species of native amphibian are recorded from Derbyshire. All of which have declined in the UK over the last 50 years as a result primarily of habitat loss. As well as number of species the number of individual amphibians is also important in assessing the value of a site for amphibian species.

Table 10. A scoring system for the selection of sites with assemblages of amphibians, (derived from Joint Nature Conservation Committee 1998 and Nature Conservancy Council, 1989).

Table 10. A scoring system for the selection of sites with assemblages of amphibians				
Species	**Method**	**Low population Score 1 point**	**Good population Score 2 points**	**Exceptional population Score 3 points**
Great Crested Newt	Seen/netted in day	<5	5-50	>50
	Counted at night	<10	10-100	>100
Smooth Newt	Netted in day	<10	10-100	>100
	Counted at night			
Palmate Newt	Netted in day	<10	10-100	>100
	Counted at night			
Common Toad	Estimated	<200	(200-2,500)	>2,500
	Counted	<75	75-500	>500
Common Frog	Spawn clumps counted	<50	50-500	<500

Am3 Any site that supports a good population of Great Crested Newt.

Application
Any site is eligible provided a 'good' population as defined in Table 10 is satisfied. The sites may consist of one or more water bodies as described above.

Justification
The Great Crested Newt is a species of European importance (Natural Habitats etc Regulations) and sites supporting the species should be protected.

Am4 Any site which regularly supports an 'exceptional' population of any amphibian species.

Application
An exceptional population will be determined by reference to Table 10.

Justification
Five species of native amphibian are recorded from Derbyshire. All of which have declined in the UK over the last 50 years as a result primarily of habitat loss. The presence of an exceptional assemblage of an amphibian species is rare and merits protection.

12.5 Reptiles

Application
These guidelines are aimed at identifying and selecting important reptile sites excluding domestic gardens.

The designation of sites should attempt to include the habitats of importance for the reptile species identified. Hibernacula used by reptiles, where it is possible to identify them, must be included in the site as communal hibernation is a noted feature of this group of animals. In addition, breeding areas, or in the case of grass snakes egg laying areas, should be included in the site. Common Lizard and Slow Worm are relatively site faithful, and the identification of site boundaries should take account of the area of habitat used by the species throughout the year. The snakes, especially the Grass Snake, can move considerable distances during the summer for foraging, therefore site designation sites need to concentrate on their hibernation and breeding sites, with as much adjacent foraging habitat as can be identified.

Justification
Derbyshire has records of four native reptiles in the county, the Adder, the Common Lizard, the Slow Worm and the Grass Snake but as a group of reptiles these are under-recorded and their status is uncertain in many areas. There is national concern at the recent decline of the adder which is particularly marked in the East Midlands.

Adder populations are rare in Lowland Derbyshire with only occasional reports. Common lizard is widely distributed but less common in the south and the east of the county. The Slow Worm is sparsely distributed in the county but there is concentration of records around Little Eaton, Ambergate and Matlock. Grass Snakes are found in the east and south often associated with river and canal corridors, but also with waterbodies that support abundant amphibians upon which to prey.

All of these four species are protected under the Wildlife and Countryside Act 1981 (as amended). Under Section 9 and Schedule 5 it is illegal to kill or injure them or sell any live or dead reptile or anything derived from it such as the skin. However, this does not protect the habitat that the reptiles live in and use for foraging. All four species are also UK BAP priority species.

Reptile Selection Guidelines
Sites that meet the following guideline will be eligible for designation as a Local Wildlife Site.

Rep1 Any site that supports an established and viable population of one or more of the following reptile species:

Grass Snake (Natrix Helvetica)
Common Lizard (Zootoca vivipara)
Slow-worm (Anguis fragilis)
Adder (Vipera berus)

Application
Site boundaries should take account of habitat area utilised by these species at all times of year where they contribute to the essential requirement of the species
e.g. hibernating habitats. For a population to be considered as established and viable there should be recent records for 2 out of the last 5 years or evidence of successful breeding (i.e. the recording of newborn reptiles or snake eggs).

Justification
All these reptiles are considered to have declined in Derbyshire and are now relatively rare in Lowland Derbyshire. It is important that established populations are protected to maintain current distributions.

12.6 Fish

There are about 60 species of British fish of which about half have been recorded from Derbyshire. Many of these are widespread nationally and in Derbyshire, but seven species are believed to be uncommon in Derbyshire. Of these Salmon, Barbel and Bleak are expanding their range or maintaining established populations and are therefore not considered under these guidelines.

Fish Selection Guidelines
Sites that meet one or more of the following guidelines will be eligible for designation as a Local Wildlife Site.

Fi1 Any stretch of watercourse that supports a native population of fish listed in Annex 2 of the EC Habitats Directive that is either

a) recorded from 5 or fewer sites in Derbyshire or

b) from more than 5 sites in Derbyshire where the site makes a significant contribution to the distribution of the species or the total population size in the county.

Application
This guideline should be applied to all watercourses that regularly support these species. The boundaries of the designated area should include these sections of the river important for the development of fry, migration and spawning. The determination of a 'site' requires further data analysis. Sites should be designated in consultation with the Environment Agency.

Justification
These species are noted as of importance in the European context in the Conservation (Natural Habitats etc) Regulations. Consequently, populations of these species should be protected, especially where they are sparsely located.

Fi2 Any stretch of watercourse that regularly supports a native population of one of the following species: -

Brook Lamprey (Lampetra planeri)
Silver Bream (Abramis bjoerkna)
Spined Loach (Cobitis taenia)
Nine-spined Stickleback (Pungitius pungitius)

Application
The boundaries of the site should attempt to include key areas of habitat required for feeding, spawning, migration and the development of fry. The Nine-spined Stickleback is thought to be under-recorded and up to date information on its conservation status and national and local distribution should be sought as part of any designations related to this species.

Justification
These fish are nationally or locally rare and merit protection to avoid further declines.

12.7 Birds

Application (all bird guidelines)
For the purposes of these guidelines acceptable evidence of breeding by bird species includes: the presence of a territorial male; singing birds heard on three consecutive dates, repeated sightings of the species concerned in suitable habitat during the breeding season; pair behaviour during the breeding season; birds seen nest-building or carrying food or faecal sacs; fledgling birds seen; or an occupied nest is found.

Account should also be taken of the fact that birds are generally far more mobile than other animals; many show well defined, but sometimes complex patterns of migration. This means that sites other than breeding sites are also essential to their wellbeing. Such areas may include those regularly used for major pre- or post-breeding gatherings, migration staging posts, moulting and during different stages of the winter.

Eligible sites will exclude domestic and industrial buildings whether they are in use or not. When determining the boundaries of the Local Wildlife Site consideration should be made of breeding and roosting sites.

For the purposes of these guidelines ‘regularly’ will be judged by the species being recorded in at least 4 of the most recent years 5 years for which data are available.

Bird Selection Guidelines
Sites that meet one or more of the following guidelines will be eligible for designation as a Local Wildlife Site.

Bi1 Any site which regularly supports 0.5% or more of the total British breeding population of any native bird species.

Application
This guideline could be used for any site where breeding birds are known and may include habitats or features used for activities associated with breeding including feeding and display.

Justification
The threshold for the selection of nationally important sites (SSSIs) is 1% of the total population. Several non-statutory site systems have used a figure of 0.5% as being indicative of an important site at County level: this figure has been adopted in these guidelines.

Bi2 Any site which regularly supports 0.5% or more of the total British non-breeding population of any native bird species.

Application
This guideline is likely to be applied to wintering bird populations but would also be applicable in other seasons.

Justification
The threshold for the selection of nationally important sites (SSSIs) is 1% of the total population. Several non-statutory site systems have used a figure of 0.5% as being indicative of an important site at County level: this figure has been adopted in these guidelines.

Bi3 Any site that regularly supports a breeding population of a species on the UK 'Red List' of Birds of Conservation Concern 3 (Eaton et al, 2009) or the UK BAP Priority Bird species list or subsequent amendments.

Application
Many of the species included on these lists are common and widespread within the county, making designation inappropriate. Therefore, this guideline should only be applied following discussions with Derbyshire Ornithological Society and other local experts to determine whether species under consideration are appropriate for site designations. Decisions should be based on current knowledge of the distribution, rarity and population trends of individual species at the time, both at national, regional and county level.

Sites should support at least 1 breeding pair of any of the species under consideration and species should be listed on one or either of the lists, including any subsequent amendments.

Breeding must be confirmed for at least two of the last three years. Boundaries for these sites must reflect the habitat in which these species use for breeding and any other specific habitat requirements for feeding juveniles.

Justification
The species listed on the Red List of the 'Birds of Conservation Concern 3' (Eaton et al, 2009) and the UK BAP Priority Species list, include species which are uncommon to rare in Derbyshire and which are therefore a conservation priority within the county.

Bi4 Sites that regularly support a breeding population of a species considered as a rare breeding bird in Derbyshire.

Application:
This applies to species with fewer than 20 breeding pairs in Derbyshire or to a species with fewer than 50 breeding pairs restricted to 10 sites or less.

The frequency of a species as a breeding bird within the county should be quantified by consultation with Derbyshire Ornithological Society and reference to the Derbyshire Breeding Birds Atlas when this is published.

The boundaries for the sites should reflect the habitat requirements for breeding and for feeding juveniles.

Justification
These birds are rare in Derbyshire and merit protection.

Bi 5 Any site which regularly supports a good assemblage of breeding bird species characteristic of the habitat in which they are recorded.

Application
This guideline should be applied to any habitat or site which regularly supports a good assemblage of breeding bird species characteristic of the habitat in which they are recorded. This guideline should be applied to the habitats listed in Tables 11a – 11d. The list of birds and the scores given to them have been taken from the Guidelines for the Biological Sites of Special Scientific Interest (Joint Nature Conservation Committee, 1998) and have been adapted to reflect the priorities for the county. The selection thresholds have been chosen to reflect assemblages of significance in Derbyshire. Information to assess a site must be gathered for at least 2 of the last three years.

Justification
If a site has these assemblages it is important in that it provides breeding habitat for some of the priority and threatened bird species of the county.

Table 11a. Wetland habitats, including reedbed, open water, and fen.			
Species	**Score**	**Species**	**Score**
Mute Swan	2	Snipe	5
Shelduck	4	Kingfisher	2

Table 11a. Wetland habitats, including reedbed, open water, and fen.			
Species	**Score**	**Species**	**Score**
Gadwall	3	Curlew	4
Little Grebe	2	Redshank	4
Water Rail	4	Cuckoo	2
Garganey	5	Ringed Plover	3
Shoveler	4	Yellow Wagtail	2
Great Crested Grebe	2	Little Ringed Plover	3
Grey Heron	3	Grasshopper Warbler	4
Tufted Duck	3	Sedge Warbler	1
Lapwing	4	Reed Bunting	1
Black-necked Grebe	5	Reed Warbler	1
Grey Wagtail	1	Common Tern	3
Dipper	2		
Selection threshold value 15			

Table 11b. Upland moorland and grassland without water bodies			
Species	**Score**	**Species**	**Score**
Teal	3	Redshank	2
Hen harrier	5	Tree Pipit	2
Buzzard	3	Meadow Pipit	1
Merlin	4	Raven	3
Peregrine	4	Twite	5
Red Grouse	1	Whinchat	2
Golden Plover	3	Stonechat	3
Dunlin	4	Wheatear	2
Snipe	2	Ring Ouzel	3
Curlew	2	Short-eared owl	3
Lapwing	3	Skylark	2
Cuckoo	2		
Selection threshold value 15			

Table 11c – Woodland			
Species	**Score**	**Species**	**Score**
Grey heron	3	Willow Warbler	1
Goshawk	5	Pied Flycatcher	3
Sparrowhawk	1	Firecrest	5
Buzzard	3	Marsh Tit	3
Woodcock	3	Willow Tit	3
Stock Dove	1	Coal Tit	1
Cuckoo	2	Nuthatch	2
Tawny owl	1	Treecreeper	1

Table 11c – Woodland			
Species	**Score**	**Species**	**Score**
Long-eared Owl	3	Jay	1
Nightjar	4	Goldcrest	1
Green Woodpecker	2	Siskin	2
Great Spotted Woodpecker	1	Common Crossbill	3
Lesser Spotted Woodpecker	5	Bullfinch	1
Redstart	3	Hawfinch	5
Garden Warbler	1	Song Thrush	2
Blackcap	1	Spotted Flycatcher	3
Wood Warbler	3	Tree Pipit	2
Chiffchaff	1	Redpoll	2
Tree sparrow	3		
Selection threshold value 17			

Table 11d - Farmland Mosaic			
Species	**Score**	**Species**	**Score**
Turtle Dove	3	Grasshopper Warbler	4
Cuckoo	2	Whitethroat	1
Long-eared Owl	3	Lesser Whitethroat	1
Yellowhammer	2	Garden Warbler	1
Tree Pipit	3	Blackcap	1
Whinchat	2	Linnet	2
Stonechat	2	Reed Bunting	2
Tree Sparrow	3	Grey Partridge	3
Corn Bunting	3	Skylark	2
Lapwing	4	Hobby	4
Little Owl	4	Barn Owl	4
Yellow Wagtail	2	Song Thrush	2
Bullfinch	1	Spotted Flycatcher	3
Selected threshold value 13			

Bi6 Any site which regularly supports a significant breeding population of wader species.
Application.
This guideline should be applied to sites which support:

3 pairs of breeding Lapwing;
or 3 pairs of breeding Snipe;
or 3 pairs of breeding Curlew;
or 3 pairs of breeding Redshank
or 8 breeding pairs comprising two or more of the above species

This guideline should be applied to individual fields or clusters of adjacent fields which are managed in a similar way. The current level of knowledge in the County does not permit use of a breeding density measurement in this guideline or a composite index based on two or more of the above species. Although they can be of considerable importance for breeding Lapwing, arable fields or short-term leys or other disturbed land are not covered by this guideline.

Justification
Breeding wader populations have declined within the UK especially in the lowlands due to agricultural change. Remaining areas of suitable habitat are increasingly important for these species in Derbyshire.

Bi7 Any site from which the following have been recorded:

a) 45 breeding bird species or
b) 60 breeding and wintering bird species or
c) 100 breeding, wintering and passage bird species.

Application
This guideline may be applied to sites which offer an exceptional range of habitat opportunities for birds. Any authentic record of species making active use of the site in the five years prior to site assessment may be included.

Justification
Complex habitats mosaics may be very valuable for birds, including sites which are of particular importance to passage migrants and winter visitors outside the breeding season. The SSSI selection guideline is 70 breeding species, 90 wintering species or 150 passage species.

Bi8 Any site that supports a significant wintering wildfowl population.

Application.
This guideline should be applied to sites where Wetlands Birds Surveys (WeBS) are carried out on a regular basis. Consideration should only be given to sites assessed by the Derbyshire Ornithological Society and the Wildfowl and Wetlands Trust to be one of the most significant sites in the county.

Further data analysis is required prior to implementation of this guideline.

Justification.
The protection of key wintering bird sites in Derbyshire will contribute to the conservation of wintering bird species regionally and/or within the UK.

Bi9 Any site that supports a significant population of a colonial nesting bird.

Application.
Sites supporting significant populations of bird species that nest colonially such as Swift, Sand Martin and Heron may be included under this guideline. Further information should be sought from Derbyshire Ornithological Society in determining how significant a site may be for a particular species in the county.

Justification.
Birds that nest in colonies may be especially vulnerable to the loss of a site and where necessary these sites should be protected.

12.8 Mammals

Application (all mammal guidelines)
Acceptable evidence of the presence of mammal species includes sightings of animals, their nests and in appropriate cases, faecal material. Sites may be considered for inclusion if they fulfil any of the following guidelines based on at least post 1987 records for the species concerned, but using up to date survey information where possible.

Mammal Selection Guidelines
Sites that meet one or more of the following guidelines will be eligible for designation as a Local Wildlife Site.

Ma1a Any hibernation site that regularly supports 2 or more species of bat and 30 or more individuals.

Ma1b Any site which regularly supports roosts of 3 or more bat species or a roost of a species which is considered rare in the county

Ma1c Any breeding roost site that regularly supports 100 or more individuals for Pipistrellus spp. and 50 or more individuals for all other species.

Application (all bat selection guidelines)
The bat guidelines will not be applied to domestic or industrial (including agricultural) buildings. Other artificial structures for example, mine shafts, tunnels, bridges, historic monuments, however, may be considered for designation.

For the purposes of the guidelines, a site may be any place used by bats for roosting. For summer and breeding roosts the site boundary may also include key feeding areas associated with the roost and flyways between them and the roost, where a discrete boundary can be identified. Key feeding areas are those locations that bats from the roost regularly use for feeding and ones where they can spend significant time feeding each night. Identifying key feeding areas for all species may not be possible or desirable, as some species feed over a wide area and in a variety of habitats.

The guidelines are intended to identify and protect the most important regularly used or 'traditional' sites. It is not intended to cover sites that support low numbers of bats and/or roost sites that are intermittently used. Currently there is only a single site, Elvaston Castle Country Park, which has been selected under these guidelines. Further work is necessary to identify locations where Local Wildlife Site designation will assist in the protection of bat populations.

Justification
All species of British bat are protected under section 9 of the Wildlife and Countryside Act 1981 (as amended) and section 39 of The Conservation (Natural Habitats, &c.) Regulations. Many species have declined because of habitat loss, destruction of roosting and hibernation sites and through reduction in insect food supplies.

Ma2 Any site which regularly supports a native breeding population of a mammal species listed in Annex 2 of the Habitats Directive and/or in Schedule 5 of the Wildlife and Countryside Act 1981 (as amended).

Application
Any site with a population of a mammal species in these categories should be included, except for those which are the result of recent deliberate introductions which do not form part of a recognised species recovery programme. Site selection is based primarily on regularly used breeding territories. However, consideration should be given to identifying areas utilised at other times of the year where these contribute to the essential habitat requirements of the species. Those species in Derbyshire to which this guideline applies may include:

Water vole (*Arvicola terrestris*)
Otter (*Lutra lutra*)
Pine marten (*Martes martes*)
Common dormouse (*Muscardinus avellanarius*)

Justification
These species are of restricted distribution, and have suffered drastic decline in abundance and range, both nationally and within Derbyshire. There is either a national or international obligation to secure the conservation of these species and their habitats.

Ma3 Any site which regularly supports a native breeding population of a mammal species which is recorded from 3 or fewer sites in Derbyshire.

Application
Any site with a population of a mammal species in this category should be included, except for those that are the result of recent deliberate introductions which do not form part of a recognised species recovery programme. Based on the present knowledge, there are no species that this guideline applies to. However, it is possible that new species may expand their population ranges into Derbyshire at some stage in the future.

Justification
There is a need to provide protection to new species colonising the County where these species are not protected species and are not protected by any other legislation or specific site designation.

Ma4 Sites which regularly support a native breeding population of a mammal species which is recorded from more than 3 sites in Derbyshire, but could be under threat because of small populations, recent rapid population declines or habitat deterioration or loss.

Application
This guideline should be applied to sites supporting a breeding population of mammal species that has been recorded in more than 3 sites in Derbyshire but could be under threat. Current information suggests that species included in this category include: -

Harvest Mouse (*Micromys minutus*)
Water Shrew (*Neomys fodiens*)

Justification
Harvest Mice are listed as a local species in Lowland Derbyshire. Water Shrews are an under recorded species in the county but their status nationally is considered to be threatened.

13 References

Barden, N. (2002). Personal Communication.

Buckingham, H. & Chapman, J. (1997). *Meadows Beyond the Millennium. The Future for hay Meadows in the Peak District National Park*. Peak District National Park.

Carey, P.D.; Wallis, S.; Chamberlain, P.M.; Cooper, A.; Emmett, B.A.; Maskell, L.C.; McCann, T.; Murphy, J.; Norton, L.R.; Reynolds, B.; Scott, W.A.; Simpson, I.C.; Smart, S.M.; Ullyett, J.M (2008). *Countryside Survey: UK Results from 2007*. NERC/Centre for Ecology & Hydrology,(CEH Project Number: C03259).

Castle, G. & Mileto, R. (2005)A. *A veteran tree site assessment protocol*. English Nature Research Reports, No.628 – Research Information Note. English Nature:Peterborough

Castle, G. & Mileto, R. (2005)B. *Development of a veteran tree site assessment protocol*. English Nature Research Report No.628. English Nature:Peterborough

Church JM, Hodgetts NG, Preston CD, Stewart NF. 2001. *British Red Data Books. 2. Mosses and liverworts*. Peterborough: Joint Nature Conservation Committee.

DEFRA (2006) Local Sites – *Guidance on their Identification, Selection and Management*. DEFRA: London

Derbyshire County Council. (1996). *Sites of Importance for Nature Conservation in Derbyshire Handbook*. DCC.

Derbyshire Wildlife Trust (1989), *Pond Survey*. Derbyshire Wildlife Trust.

Derbyshire Wildlife Trust (1997) *Mid Derbyshire Local Biodiversity Action Plan*. Derbyshire Wildlife Trust.

Drake, M., Clements, D., Eyre, M., Gibbs, D. & Kirby, P. (1998). *Invertebrates and their Habitats in Natural Areas. Volume 1 – Midland and Northern Areas*. English Nature Reports No. 298.

Eaton, M.A., Brown, A.F., Noble, D.G., Musgrove, A.J., Hearn, R., Aebisher, N.J., Gibbons, D.W., Evans, A. & Gregory, R.D. (2009). *Birds of Conservation Concern 3: the population status of birds in the United Kingdom, Channel Islands and the Isle of Man*. British Birds 102. pp296-341.

Elkington, T. & Willmot, A. [Eds.] (1996). *Endangered Wildlife in Derbyshire*. The County Red Data Book. Derby: Derbyshire Wildlife Trust

Forestry Commission. (2002). *National Inventory of Woodland and Trees in England, County Report for Derbyshire*. Forestry Commission.

Foster, G.N. (2010). *A review of the scarce and threatened Coleoptera of Great Britain Part (3): Water beetles of Great Britain*. Species Status 1. Joint Nature Conservation Committee: Peterborough.

Fuller, R.M. (1987). *The Changing Extent and Conservation Interest of Lowland Grasslands in England and Wales: A Review of Grassland Surveys 1030-1984*. In: Biological Conservation Vol 40 p281-300.

Holmes, N., Boon, & Rowell. (1999). *Vegetation Communities of British Rivers: A Revised Classification*. Joint Nature Conservation Committee.

Hopkins, J.J. (1996) *Scrub Ecology and Conservation*. In: British Wildlife Vol 8 No 1 Oct 1996. British Wildlife Publishing.

Huston, K.R. (2001) *Changes in the Extent of Semi-Natural Grassland in Lowland Derbyshire Between 1983 and 1999 and Recommendations for Future Conservation Action*. Derbyshire Wildlife Trust.

Jefferson, R.G. & Roberston H.J. (1996). *Lowland Grassland: Wildlife Value and Conservation Status*. English Nature Research Reports No 169.

JNCC. (2012). *UK BAP Priority Species and Habitats*. http://jncc.defra.gov.uk/page-5705 [05/11/2012]

JNCC. (2010). *UK BAP Action Plan Priority Habitat Descriptions – Open Mosaic Habitats on Previously Developed Land* (Updated July 2010). From: UK BAP Priority Habitat Descriptions BRIC (ed. Maddock) 2008. [http://jncc.defra.gov.uk/Docs/UKBAP_BAPHabitats.40-OMH-2010.doc]

Joint Nature Conservation Committee (1998). *Guidelines for the Selection of Biological SSSIs*. HMSO.

Jones, C & Eades, P. (2002). *Sheffield Grassland Survey 1998-2001*. Sheffield Wildlife Trust.

Lowland Derbyshire Biodiversity Partnership. (2011) Lowland Derbyshire Biodiversity Action Plan [http://www.derbyshirebiodiversity.org.uk/lbaps/lowland-derbyshire.php]

Merritt, R. (2006). *Atlas of the water beetles (Coleoptera) and water bugs (Hemiptera) of Derbyshire, Nottinghamshire and South Yorkshire*, 1993-2005. Sorby Record Special Series, No. 14. Sorby Natural History Society:Sheffield.

Moyes N.J. & Willmot A. (2009). *Red Data List of Derbyshire's Vascular Plants*. Derby Museum & Art Gallery.

Nature Conservancy Council (1989). *Guidelines for the Selection of Biological SSSIs*.

Nature Conservancy Council (1992). *Derbyshire Inventory Of Ancient Woodland (Provisional)*. National Conservancy Council.

PCTPR, (2009). "*A guide to monitoring the ecological quality of ponds and canals using PSYM*". www.pondconservation.org.uk/Resources/Pond%20Conservation/Documents/PDF/NPMN_PSYM_MANUAL_July09.pdf

Peak District Biodiversity Partnership. (2011). *The Peak District Biodiversity Action Plan (BAP)* 2011-2020. [http://www.peakdistrict.gov.uk/looking- after/biodiversity/biodiversity-action-plan]

Preston CD. (2006). *A revised list of nationally scarce bryophytes*. Field Bryology 90: 22-30.

Preston CD. (2010). *A revised list of nationally rare bryophytes*. Field Bryology 100: 32-40.

Price, S.G. (2009). S. G. Price, *A Checklist of Derbyshire Lichens*, Sorby Record No 45

Rodwell, J.S., ed. (1991a) *British Plant Communities Vol.1, Woodlands and scrub*. Cambridge University Press.

Rodwell, J.S., ed. (1991b). *British Plant Communities Vol 2, Mires and Heaths*. Cambridge University Press.

Rodwell, J.S., ed. (1992). *British Plant Communities Vol 3, Grasslands and Montane Communities*. Cambridge University Press.

Rodwell, J.S., ed. 1995). *British Plant Communities Vol 4, Aquatic Communities, Swamps and Tall-herb Fens*. Cambridge University Press.

Rodwell, J.S., ed. (2000). *British Plant Communities Vol 5, Maritime Communities and Vegetation of Open Habitats*. Cambridge University Press.

Rotheroe, M., Newton, A., Evans, S. & Feehan, J. (1996) *Waxcap-grassland survey* In: The Mycologist 10: 23-25.

Shaw, P.J.A., (1992). *A Preliminary Study of Successional Changes in Vegetation and Soil Development on Unamended Fly Ash (PFA) in Southern England*. In: Journal of Applied Ecology 1992.

Speight, M.R., Hunter, M.D. & Watt, A.D. (1999). *Ecology of Insects: Concepts and Applications*. Blackwell Science Oxford.

UK BAP. (2007). *UK Biodiversity Action Plan Priority Habitat Descriptions*.

http://www.ukbap.org.uk/UKPriorityHabitats.aspx [02/2011]

Wedge C., & Robertson, H. (2007). *Traditional orchards: orchards and wildlife*. Natural England Technical Information Note TIN020.
http://naturalengland.etraderstores.com/NaturalEnglandShop/TIN020 [02/2011]

Woods, R G & Coppins, B J. (2003) *A Conservation Evaluation of British Lichens*, British Lichen Society, 2003 (under revision).

14 Appendices

14.1 Appendix 1: Consultees

General	
Nick Moyes	Derby Biological Records Centre (2003 & 2011)
Bill Grange	Derby Biological Records Centre (2003)
Sara Hawkswell	The Wildlife Trusts (2003)
Jo Taylor	Derbyshire Wildlife Trust (2003 & 2011)
Pat Brassley	Derbyshire Wildlife Trust (2003)
Nick Brown	Derbyshire Wildlife Trust (2003)
Philip Precey	Derbyshire Wildlife Trust (2003)
Roger Catchpole	English Nature (2003)
Dan Abrahams	English Nature (2003) Natural England (2011)
Annie Cooper	Derbyshire County Council (2003)
Mike Hase	Derbyshire Dales District Council (2003)
Martin Rich	Amber Valley Borough Council (2003)
Derek Stafford	Amber Valley Borough Council (2003)
Adrian Fisher	High Peak Borough Council (2003)
Gill Hague	South Derbyshire District Council (2003)
Rachel Armstrong	North East Derbyshire District Council (2003)
Dave Slinger	Derby City Council (2003)
David Staples	Erewash Borough Council (2003)
Martin Wheatcroft	Bolsover District Council (2003)
Alan Willmot	Derbyshire Flora Recorder (2003) (2011)
Eileen Thorpe	Local Naturalist (2003)
Rebekah Newman	Peak District National Park Authority (2003)
Helen Buckingham	Peak District National Park Authority (2003)
Dave Mallon	Local Naturalist/Ecological Consultant (2003)
Trevor Taylor	Local Naturalist/Ecological Consultant (2003) Local Wildlife Site Officer DWT (2011)
Jim Gillespie	Baker, Shepherd and Gillespie Ecological Consultancy (2003)
Trevor Elkington	Local Naturalist (2003)
Mammals	
Helen Perkins	Derbyshire Wildlife Trust (2003)
Graeme Smart	Derbyshire Wildlife Trust (2003)
Malcolm Hopton	Bat Goup (2003 & 2011) Derbyshire Mammal Group (2011) Derbyshire Bat Group (2011)
Birds	
Tim Cleeves	RSPB (2003)

Malcolm Hopton	Derbyshire Ornithological Society (2003)
Roy Frost	Derbyshire Ornithological Society (2003)
Dave Budworth	Local Representative – British Trust for Ornithology (2003)
DOS	Derbyshire Ornithological Society (2011)
Jenny Willoughby	Derbyshire Ornithological Society (2003)
Amphibians	
Chris Monk	County Amphibian Recorder (2003)
Reptiles	
Nick Moyes	County Reptile Recorder (2003)
Chris Monk	County Amphibian Recorder (2011)
Invertebrates	
Eileen Thorpe	SORBY/Derbyshire and Nottinghamshire Entomological Society (2003)
Derek Whitely	SORBY (2003)
Steve Price	Derbyshire Wildlife Trust (2003)
Fred Harrison	Local Naturalist (2003)
Ken Orpe	County Butterfly Recorder (2003) (2011)
Dave Budworth	Derbyshire and Nottinghamshire Entomological Society (2003)
DANES	Derbyshire and Nottinghamshire Entomological Society (various)
Higher plants	
Roy Smith	Former County Flora Recorder (2003)
Ken Balkow	Derbyshire Flora Group (2003)
John Stobart	English Nature (Dorset SINC Panel) (2003)
Alan Willmot	Derbyshire County Recorder - plants (2011)
Fungi	
Neil Barden	Local Fungi Recorder (2003) (2011)
Tony Lyons	Sheffield University (2003)
Lower plants	
Tony Smith	Local Naturalist - Bryophyte specialist (2003)
Max Bryce	Local Naturalist – Bryophyte specialist (2003)
Tom Blockeel	County Bryophyte Recorder (2003 & 2009)
Lichens	
Oliver Gilbert	Sheffield University (2003)
Steve Price	County Lichen Recorder (2011)

14.2 Appendix 2: Other Counties Local Wildlife Site Selection Criteria reviewed/consulted

County	Date of Criteria publication
Avon	1995
Cambridgeshire	1997
Dorset	Not known
Gloucestershire	1994
Hertfordshire	Not known
Lancashire	February 1998
Leicestershire	Not known
North Yorkshire	May 2001
Warwickshire	1998
Worcestershire	September 2000