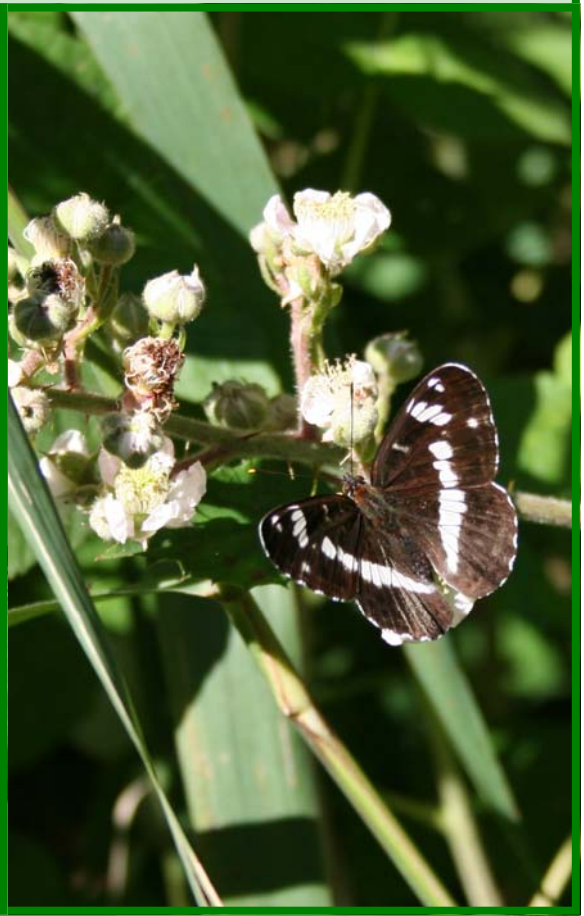
Lowland Derbyshire Biodiversity Action Plan



2011-2020

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Contents

Click links to go the various sections of the LBAP

Section

Quick start Guide

Introduction

Generic Action Plan

Area Action Plans and Targets

Action Area 1:	Magnesian Limestone
Action Area 2:	Rother and Doe Lea Valleys
Action Area 3:	Peak Fringe
Action Area 4:	Erewash Valley
Action Area 5:	Claylands
Action Area 6:	Derby
Action Area 7:	Trent and Dove Valleys
Action Area 8:	National Forest area

Cumulative Targets

UK Priority Habitats—Background Information

Farmland

Grassland

Heathland

Wetland

Woodland

List of Lowland Derbyshire LBAP Partners

Appendix 1: Detailed Maps of All Eight Action Areas (with Priority Habitats)

these are available as eight 4MB files on CD
or from www.derbyshirebiodiversity.org.uk

Cover photos, clockwise from top left:
Bulfinch. Credit: Laura Whitehead
White Admiral. Credit: Debbie Alston
Green Lane, north-east Derbyshire. Credit: Debbie Alston

Quick Start Guide

This Local Biodiversity Action Plan (LBAP) covers the Lowland Derbyshire region for the period 2011 to 2020. It identifies the basic actions we must collectively take if we are to protect and enhance the key biodiversity of this region.

The UK Government recognises its international obligations and the economic urgency to protect biodiversity and ecosystems. This LBAP is part of that delivery and local reporting mechanism. Only those habitats and species meeting the UKBAP definitions of 'Priority Habitat' or 'Priority Species' are included in the targets for the Lowland Derbyshire Action Plans.

The history and rationale behind the Local Biodiversity Action Plan is given in the **Introduction**. A **Generic Action Plan** then outlines a series of Actions applying across all eight subdivisions of this LBAP region, but numerical targets are not included.

Lowland Derbyshire is then divided into eight separate **Action Areas,** each having its own characteristic type of landscape. Each therefore has its own description, plus a distinct list of Actions and measurable Targets for that area. These Action Areas are:

1. **Magnesian Limestone**
2. **Rother and Doe Lea Valleys**
3. **Peak Fringe**
4. **Erewash Valley**
5. **Claylands**
6. **Derby**
7. **Trent and Dove Valleys**
8. **National Forest area**

Each Area Action Plan follows the format below (where 'x' is the Area number shown above)

x.1	Area Description and map
x.2	Vision
x.3	Challenges and Opportunities
x.4	**Key Actions**
x.5	**Key Targets**
x.6	Current Biodiversity Resources
x.7	Achievements to Date

A single page summary showing **Cumulative Targets** for all Action Areas is also provided.

Further details on each Priority Habitat in Lowland Derbyshire are given in **Background Information**. These do not contain actions or targets, but do offer more habitat information and lists of species such as rare or local Red Data Book Species which are of more local significance.

An Appendix includes eight **Detailed Maps** of each Action Area. They include all those Priority Habitats regarded as the most significant, primary features within those landscapes. (Available as a separate download from the Derbyshire Biodiversity website).

Species Action Plans have not been included in this document. However, a selected number of action plans for Priority Species will be made available on the Derbyshire Biodiversity website from 2012. Updates to this LBAP will also be available from that site at www.derbyshirebiodiversity.org.uk

For those parts of the county outside of Lowland Derbyshire, please refer to the Peak District LBAP, published by the Peak District Biodiversity Partnership.

Introduction

Lowland Derbyshire LBAP

Orchid. Credit: Debbie Alston

Prepared by the Lowland Derbyshire Biodiversity Partnership

This document forms part of the Lowland Derbyshire Biodiversity Action Plan 2011-2020

Introduction

Contents

	Page
1. What is 'biodiversity'?	3
1.1 Why is biodiversity important, and why should we conserve it?	3
1.2 Biodiversity Action Plans – history and context	5
1.3 Previous Lowland Derbyshire LBAPs	6
1.4 New thinking to BAP work beyond 2010	8
1.5 Our new approach to the LBAP: Landscape Character Areas	10
2. Structure of the revised LBAP	14
2.1 Monitoring	15
2.2 Who is involved?	15
2.3 How it works	15
3. References	16
Table 1: UK Priority Habitats in the LBAP area.	17
Table 2: UK Priority Bryophyte, Fungus and Vascular Plant Species recorded in the LBAP area.	18
Table 3: UK Priority Amphibian and Reptile Species recorded in the LBAP area.	18
Table 4: UK Priority Fish Species recorded in the LBAP area.	18
Table 5: UK Priority Bird Species recorded in the LBAP area.	19
Table 6: UK Priority Mammal Species recorded in the LBAP area.	20
Table 7: UK Priority Invertebrates (other than moths) Species recorded in the LBAP area.	20
Table 8: UK Priority Moths Species recorded in the LBAP area.	21
Figure 1: LBAP Boundaries	7
Figure 2: LBAP Action Areas	13
Appendix 1: UK Priority Habitats in the LBAP Area	17
Appendix 2: UK Priority Species in the LBAP Area	18

1. What is 'biodiversity'?

'Biodiversity' is the word we use to describe the **variety of life** that exists on earth. It includes all animals, plants, fungi and bacteria, the complex ecosystems which they form, and even the genetic diversity present within and across all species – everything that could be considered to form the 'biological diversity' of our planet. It includes every living thing, from the rarest creature found only in the most remote locations, to the commonest and most familiar species such as the birds and insects you might see in your garden or local park. Despite having such a broad and all-encompassing definition, the term 'biodiversity' is often simply used as shorthand for the **'wealth of wildlife'**, and particularly to talk about the richness of wildlife and habitats present in any given place. That area may range in size from a single site or nature reserve, right up to a county or even a whole country. A place rich in wildlife is often said to be of **'high biodiversity'** or simply **'biodiverse'**.

1.1 Why is biodiversity important, and why should we conserve it?

Biodiversity is important to all of us and for a great many reasons. Most obviously, many people simply appreciate biodiversity in its own right. They value **opportunities to see wildlife**, or walk amongst healthy, attractive, biodiverse or 'wild' places. A biodiverse environment is therefore important for our **quality of life**. The ability to experience nature – walking in an ancient broadleaf woodland, watching butterflies in a meadow on a summer's day, or simply watching the birds in our garden or outside our office window – all of these experiences enrich our lives on a daily basis, and often provide a sense of wellbeing.

Studies are increasingly demonstrating that contact with the natural world not only provides us all with a genuine sense of wellbeing, but also helps us to relax, deal with stress and anxiety, to concentrate, and generally improves our **mental health** (Bird, 2007). Biodiverse environments are typically attractive ones that people want to visit, relax in and take exercise in. It is also quite apparent that biodiversity plays an important role in encouraging **outdoor recreation** by increasing the variety, attractiveness and interest of the landscape.

The Sanctuary Bird Reserve, Pride Park, Derby.
Credit: Nick Moyes

Biodiversity is also an important part of our **cultural heritage and identity**. The natural or semi-natural environments that surround us today are just as much a part of our heritage as our museums and art galleries. These are the wild places that have managed to survive, shaped by centuries of human activity, and millennia of natural processes. Our natural heritage is therefore both our link to, and the product of, our past. But the history of land use and land management varies from place to place, just as the geology, topography, soils and other environmental characteristics differ from one area to another, resulting in the formation of many different habitats, and the distribution of different species. All these factors combined result in suites of habitats and species that differ markedly across the country. They are unique in each area, playing an important part in defining the landscape character and the environmental characteristics of each place. Biodiversity is therefore an essential component of **local distinctiveness**, providing a sense of identity and place.

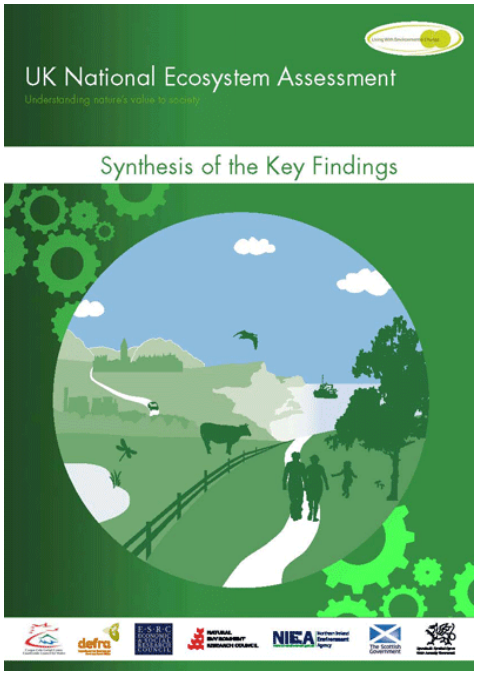
There are few places where this is more apparent than in Derbyshire. It is a diverse county of very contrasting landscapes, geology, land uses and histories. These result in a county of many differing characteristics, which can be said to consist of different **Landscape Character Types**. Each have their own unique blend of habitats and species, collectively making Derbyshire such a special place to visit, work or live in.

Bird watching in Derby. Credit: Nick Moyes

Given the value that people place on the natural environment and our natural heritage, the importance biodiversity plays in outdoor recreation, and the contribution that biodiversity makes to local character and distinctiveness, it is no surprise that people are prepared to travel in order to make use of biodiverse places. Similarly, it is not surprising that an attractive, diverse, rural county such as Derbyshire should attract significant numbers of tourists who are drawn to the county, in no small part, because of its biodiversity interest.

Unquestionably, **biodiversity tourism** makes a considerable contribution to the economy in Derbyshire, but the **economic value of biodiversity** is far more significant than this. Many industries such as agriculture, fisheries and forestry, as well as the food, nature conservation and tourism sectors, are directly dependent on healthy, biodiverse natural environments, both locally and globally. The natural heritage of Derbyshire is a key factor in attracting and retaining inward investment to the area. A report for DEFRA (GHK Consulting, 2004) estimated that activities that either contribute to the management of the natural environment, or are dependent on a high quality environment, support 299,000 full time equivalent (FTE) jobs and Gross Value Added of £7.6 billion in England annually. It is therefore apparent that through the above industries, biodiversity generates significant economic benefits, as well as providing us with **essential materials and products** such as food, medicines and building materials, which we all depend on.

But the benefits of biodiversity do not end at the provision of products; biodiversity is fundamental in providing services which underpin all life on earth – so called **'ecosystem services'**. From the global level to the local, natural processes are responsible for providing clean air and water, removing pollution and other contaminants, and treating waste. Natural and semi-natural habitats also help to regulate our climate, and protect us from natural events such as flooding and storms, whilst habitats such as woodlands and peatbogs act as carbon sinks, locking away carbon which would otherwise contribute to climate change. Studies have shown that the economic value of these ecosystem services is immense, and that a large proportion of this value depends on the biological diversity of these systems (TEEB, 2010).



UK National Ecosystems Assessment (2011)

The final argument for the conservation of biodiversity is an **ethical** one. Many people would argue that we share the planet with a great many species of plants and animals, and that we have no right to stand idly by whilst they become extinct, largely as a result of our own actions. Others would argue we have a moral duty to ensure that we pass on a healthy, functioning natural environment to future generations, so that they might equally have the opportunity to experience it, and benefit from it themselves. Indeed, the idea that we should ensure we pass on an environment capable of meeting the needs of future generations is a key principle of **sustainable development**.

It is quite apparent from all the above that conservation of biodiversity is not a luxury; it is essential. The air we breathe, the water we drink, the food we eat, and the products we use on a daily basis all depend on biodiversity, and biodiversity is therefore critical to our own continued survival as a species. Our quality of life and our physical and mental wellbeing also benefit hugely from biodiversity, and we have a duty to conserve wildlife for its own sake, for ours and for future generations. The conservation of biodiversity is not just the partnership's concern, but everyone's. We need to work together to ensure we have a healthy and biodiverse natural environment, with functioning ecosystems and natural processes, for now and forever.

1.2 Biodiversity Action Plans – history and context

In June 1992, the United Nations Conference on Environment and Development (UNCED), was held in Rio de Janeiro. The conference became known as the **Rio Summit** or the **Earth Summit.** Its participants, including 172 governments, considered a wide variety of environmental issues such as energy, fossil fuels and climate change, waste and pollution, water scarcity and biodiversity. The conference resulted in 159 governments signing the **Convention on Biological Diversity**. Within a year this number had grown to 168 signatories. By 2011, of all the 192 UN member States, only the USA and Andorra had still not ratified that Convention.

Rio de Janeiro
Credit Marciofleury

The Convention on Biological Diversity (also known as the CBD or the Biodiversity convention) is a legally binding treaty which provides a world-wide framework for biodiversity conservation. The CBD came into force on 29th December 1993. It has three main goals:

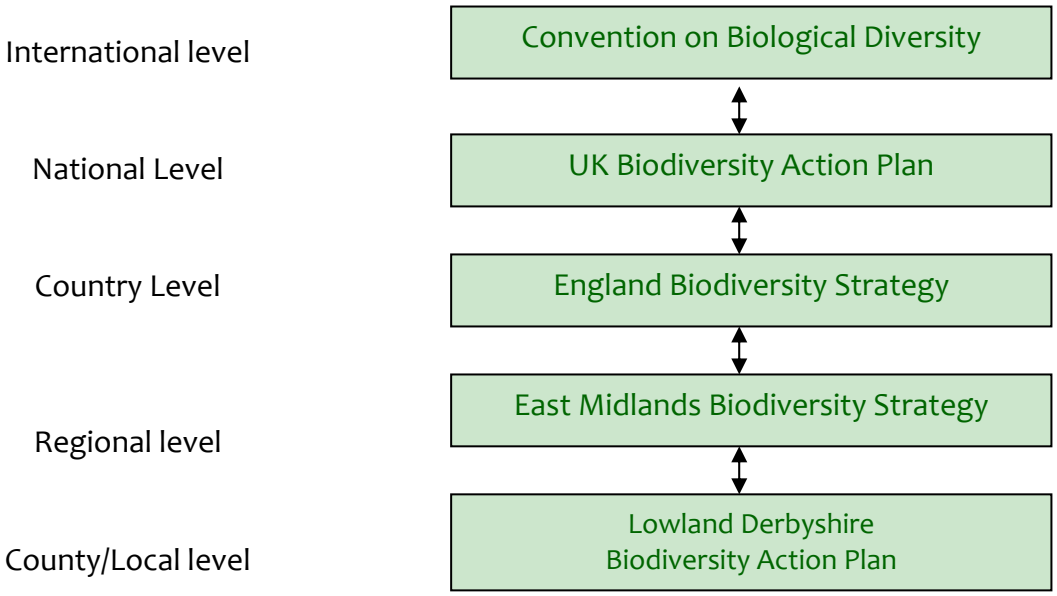
- the conservation of biological diversity
- the sustainable use of its components
- the fair and equitable sharing of the benefits from the use of genetic resources

In order to achieve these goals, the CBD called for the creation and enforcement of national strategies and action plans to conserve, protect and enhance biological diversity.

In response to the Convention of Biological Diversity, in 1993 the UK government consulted over 300 organisations throughout the UK and held a two-day seminar to debate the key issues raised in Rio. The product of this was the launch of **'Biodiversity: the UK Action Plan'** in 1994, which included action plans and targets for 45 habitats and 391 species. These habitats and species were chosen because they are considered to be either globally threatened, or evidence indicates they are rapidly declining in the UK, i.e. by more than 50% in the last 25 years. This list was revised in 2007 and now includes 65 **Priority Habitats** and 1,149 **Priority Species**.

The UK Biodiversity Steering Group (subsequently the UK Biodiversity Group, and latterly the **UK Biodiversity Partnership**) was established in order to implement the UK BAP. Action was taken at a local level to create **Local Biodiversity Action Plans (LBAPs)**. Since this time, LBAPS have provided the mechanism for the coordination, guidance, implementation and recording of biodiversity conservation, effectively delivering international commitments and national priorities at the local level. The LBAP partnership for our area was established in 1996, under the original title of the **Mid-Derbyshire Biodiversity Partnership**.

Following the establishment in 1998 of devolved governments in Scotland, Wales and Northern Ireland, environmental legislation and the implementation of Biodiversity Action Plans became the responsibility of each country. In England, this resulted in the establishment of the **England Biodiversity Group** and the publication of the **England Biodiversity Strategy** in 2002, in order to implement the aims of the UK BAP at the country level. The late 1990s also saw a shift towards regionalism, and in 1998 the **East Midlands Regional Biodiversity Forum (EMRBF)** was established. The purpose of the EMRBF was to provide a regional focus on, and network for, biodiversity issues and initiatives. It provided a regional voice for biodiversity issues, ensuring these were fully addressed by the emerging regional structures and initiatives.



From the above, it is apparent that Local Biodiversity Action Plans, such as this **Lowland Derbyshire LBAP**, have a crucial role to play in translating national and sub-national strategies, priorities and targets into local action on the ground. It then reports this back up for monitoring purposes.

1.3 Previous Lowland Derbyshire LBAPs

In 1996 when consideration was first given to achieving LBAP coverage for Derbyshire, there were no clear precedents. It was agreed:

- to prepare one LBAP for the Peak District (because of its large proportion of nationally and internationally important habitats);
- to prepare an LBAP for the whole National Forest area (to ensure consideration of biodiversity in the Forest's development);
- to prepare an LBAP for the rest of Derbyshire, outside these two areas.

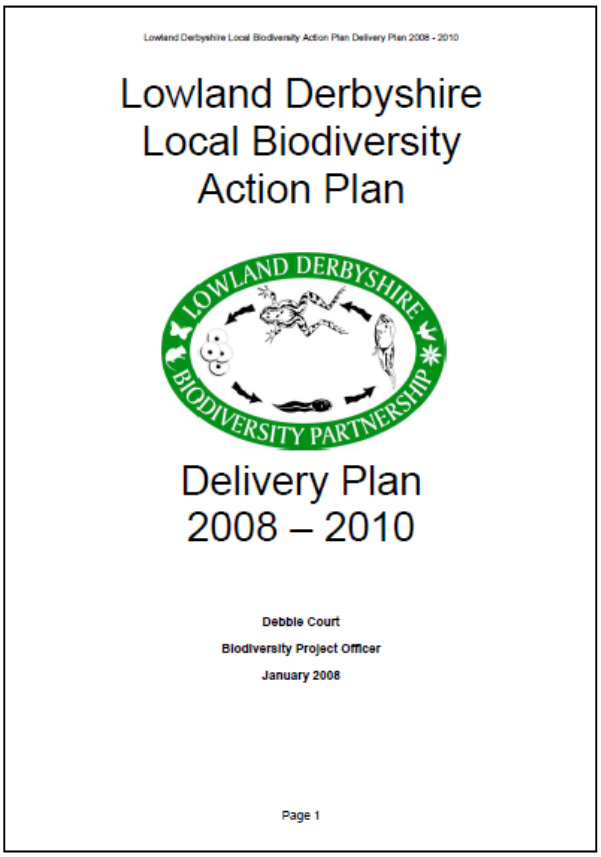
In June 1997, Part 1 of the **'Mid-Derbyshire LBAP'** was launched, with Part 2 following in March 1998. Part 1 set the context for the Plan and provided Habitat and Species Action Plans for most of Derbyshire's priority habitats and some species. Part 2 completed that process. The Plan provided **Habitat Action Plans (HAPs)** for every habitat in the area it covered.

By 2001 however, it became accepted that the National Forest LBAP was primarily a sectoral LBAP, providing priorities for the work of the National Forest Company and its primary partner, the Forestry Commission. As a result it was agreed by all relevant parties that the county LBAP should be extended to include that part of the National Forest area within Derbyshire, and that the name should be changed to the **'Lowland Derbyshire LBAP'**, reflecting its coverage of the whole of the lowland part of the county (see Figure 1). The National Forest LBAP remains in place, however, guiding the work of the National Forest Company. The Peak District LBAP covers the area encompassed by the White Peak, Dark Peak and South West Peak areas, both inside and outside the Peak District National Park.

In 2004 the Lowland Derbyshire Biodiversity Partnership employed its first co-ordinator. Her role was to revise the various habitat and species action plans and monitor the work of the partnership against the local targets.

By 2008 the Lowland Derbyshire BAP Project Officer had produced a **Delivery Plan**, assessing progress to date against the targets set in the original BAP and identifying the work required to achieve the remaining targets by 2010.

The existing LBAP and the associated targets were all set to expire at the end of 2010. It was therefore necessary to review progress against the BAP again in 2010, and the decision was then made to develop a completely new LBAP for Lowland Derbyshire, taking us through from 2011 to 2020 (i.e. this document).


Lowland Derbyshire Local Biodiversity Action Plan Delivery Plan 2008 - 2010

Lowland Derbyshire Local Biodiversity Action Plan

LOWLAND DERBYSHIRE BIODIVERSITY PARTNERSHIP

Delivery Plan 2008 – 2010

Debbie Court
Biodiversity Project Officer
January 2008

Page 1

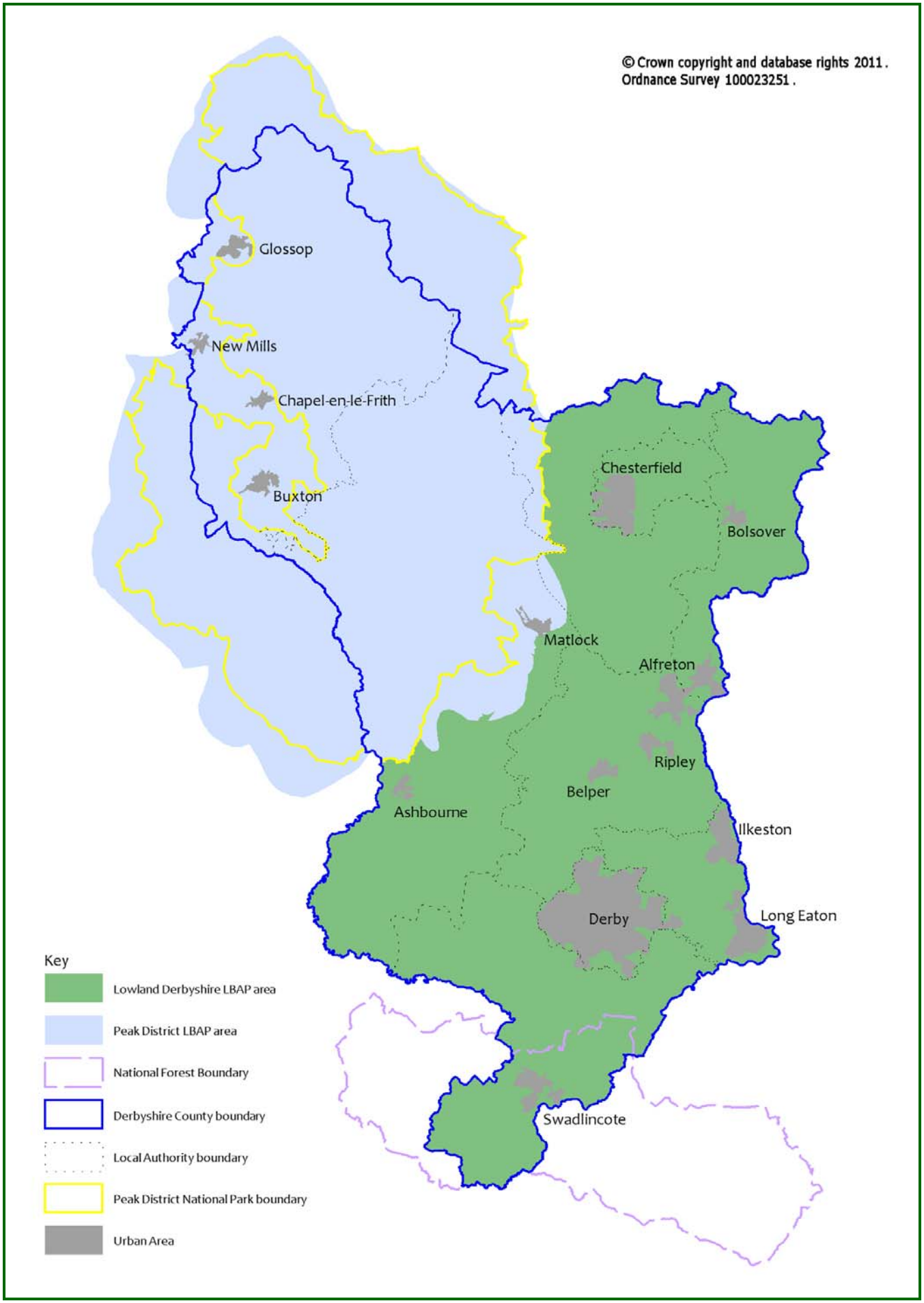


Figure 1: LBAP Boundaries

1.4 New thinking to BAP work beyond 2010

2010 was a significant year for biodiversity. The United Nations had declared it the **'International Year of Biodiversity'.** It was a time to reflect on the importance of biodiversity and the significance of biodiversity losses, to celebrate conservation achievements and a year in which to take action for biodiversity.

Back in 2002, the UK Government had joined other EU countries in making a commitment to halt the decline of biodiversity by 2010 (European Commission, 2006). Some 130 world leaders then agreed to significantly reduce the rate of global biodiversity loss by the year 2010. In the UK a number of **national targets** were set to help to achieve these aims. Many Local Biodiversity Action Plans, including the Lowland Derbyshire LBAP, were written with targets for delivery by the end of 2010.

With the state of biodiversity conservation under intense scrutiny it became apparent that, in many ways, a significant amount of progress has been made since 1992. Since the UK BAP was originally written, conservation priorities have been identified and targets set at all levels, from national to local. As our state of knowledge improved, we have been able to review, extend and refine these targets, and our understanding of conservation concerns, trends and priorities has greatly enhanced over this period.

Cinnabar Moth caterpillar.
Credit: anemoneprojectors

National reviews demonstrated that Biodiversity Action Plan partnerships at UK and local levels continue to deliver gains for some Priority Species and Habitats, with the rate of decline slowing (and in some cases halted or reversed) and our state of knowledge continues to improve (UK Biodiversity Partnership, 2010). At a national level, 8 Priority Habitats (18%) and 40 Priority Species (11%) were found to be increasing or probably increasing, and 9 Priority Habitats (20%) and 144 Priority Species (39%) were believed to be stable or probably stable. Elsewhere, significant progress has been made on improving SSSI condition, in response to a Government goal of ensuring that 95% of SSSIs in England, were in **'target condition'** (i.e. 'favourable' or 'unfavourable-recovering') by 2010. *I*t appeared this target had been met by November 2010, although only 36% were actually in 'favourable' condition. In the East Midlands, more than 98% of SSSIs had reached target condition, with 47% noted as being in 'favourable' condition (Natural England, 2010a).

At the local level, the **Lowland Derbyshire LBAP review** showed that 63% of the LBAP targets had been achieved or significantly exceeded, and a further 14% of targets had almost been achieved. Monitoring by the LBAP project officer also showed that, in addition to these achievements, there had also been significant improvements in the knowledge about species and habitats in the LBAP area, with community participation and volunteering having been a particular success story. Over six years (2004-2010) our LBAP partners attracted approximately £6.7 million in funding for biodiversity delivery, and more than 36,900 days of practical conservation work were carried out by volunteers.

However, despite the notable achievements recorded at the national and local levels, the situation is still quite mixed. We have some way to go before biodiversity loss is even halted, let alone reversed. At a national level, 19 Priority Habitats (42%) and 88 Priority Species (24%) were believed to be **'declining'** or **'probably declining'** although the rate of decline is slowing for 9 habitats (20%) and 28 species (8%). Eight Priority Species were also reported to have been lost from the UK since the publication of the UK Biodiversity Action Plan in 1994 (UK Biodiversity Partnership, 2010). A report on England's lost and threatened species identified nearly 500 animals and plants that have become extinct in England – practically all within the last two centuries (Natural England 2010b) . It identified those species most at risk of being lost in the near future. In Derbyshire, the Lowland Derbyshire LBAP review confirmed that almost a quarter of targets fell significantly short of being achieved.

In summary, it is quite apparent that despite significant amounts of conservation effort and resources, **we have missed key targets to halt the loss of biodiversity**. Whilst targeted conservation effort has reversed the fate of many declining species, and whilst significant areas of new habitat have been created, we continue to lose species and habitats, locally, nationally and globally - sometimes at an alarming rate.

Over recent years, it has begun to be recognised that we need a step-change in nature conservation action if we are to halt biodiversity loss and begin to make good the historic losses. Increasingly it is being suggested that to achieve this we need to look towards creating large, robust networks of connected, high quality habitats creating and restoring functioning ecosystems. Most recently, the **Lawton Review** was released in September 2010, presenting a comprehensive review of ecological networks in England (Lawton et al, 2010).The review set out to answer two questions, the first of which was

> *'Do England's wildlife sites comprise a coherent and resilient ecological network?'*

The results were damning. It indicated that, whilst most species and habitats were represented in our ecological networks, most sites of ecological interest are simply too small, and historic losses have been too great, for the remaining areas and populations to be self sustaining. Most areas of semi-natural habitat are also insufficiently protected, under-managed, and not sufficiently connected to one another to function.

The second question posed in the Lawton review was to ask:

> *'if our existing networks are not sufficient, what needs to be done?'*

The answer can be summarised in four words: **more, bigger, better** and **joined.**

In many ways, these concepts are not new. We have long sought to improve the quality of existing habitats, to create new habitats and extend existing ones, and to increase their connectivity. In recent years, the focus has begun to shift away from site-based conservation and towards the landscape-scale approach. This is the step change we need.

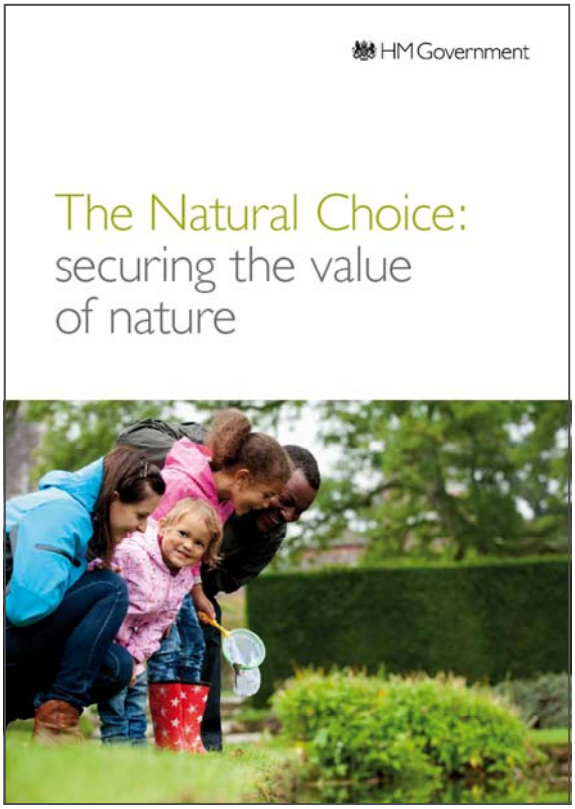
Landscape-scale conservation is about building very large functioning networks of habitats, which incorporate existing high quality sites and extend, buffer and interconnect them with new habitats to produce robust ecosystems, capable of supporting natural processes as well as sustainable populations of dependent species. The approach should provide a resilient natural environment, capable of delivering **ecosystem services** and the other functions that we rely upon, whilst also supporting biodiversity. Landscape-scale conservation should also provide habitats which are resilient to climate change, which allow species to adapt to the impacts of climate change, and which provide services that protect us from the effects of climate change. Because of these benefits, it is likely that landscape-scale conservation will become an increasingly important approach to biodiversity conservation during the 2011-2020 LBAP plan period.

At a national level, effort and funding is already being targeted at landscape-scale delivery. In 2010, Natural England began promoting the idea of landscape-scale conservation, firstly through the identification of **IBDAs – Integrated Biodiversity Delivery Areas** - large areas of land in which species conservation with habitat management can be delivered though partnership working, integrating other environmental, social and economic agendas. Landscape-scale conservation is also being brought to the fore in the strategies of national and local bodies. Examples include the RSPB's **Futurescapes** initiative, or the Wildlife Trust's **Living Landscapes Schemes**, as well as in the preparation of funding bids for landscape-scale conservation within Derbyshire.

In June 2011, the Government launched **The Natural Environment White Paper**, '*The Natural Choice: securing the value of nature*'**.** The White Paper outlines the Government's vision for our natural environment over the next 50 years, and it included proposals for a number of new initiatives, including:

- **Local Nature Partnerships (LNPs)** - strategic partnerships of organisations that work to create a shared vision for their area and deliver better, more integrated environmental outcomes

- **Nature Improvement Areas (NIAs)** - large, landscape scale areas (between 10-50,000 hectares) that offer opportunities to secure and enhance the benefits of the natural environment



In August 2011, Defra also launched the new **England Biodiversity Strategy** '*Biodiversity 2020: A strategy for England's wildlife and ecosystem services*'.

It is likely that both of these documents will be central to biodiversity delivery at both the national and local level throughout the period of this LBAP plan.

1.5 Our new approach to the LBAP: Landscape Character Areas

No species is uniformly distributed across the countryside. Where it is found is essentially dictated by its habitat requirements and the environmental conditions present there. But the distribution of habitats within the landscape is also far from random. It is the underlying landforms, the topography, the geology, soils, hydrology and other environmental factors present that determine the character of the landscape. The occurrence of habitats within the landscape is also defined by the patterns of human habitation and land use. Taken together, all these factors have contributed to a shaping of the semi-natural environments we see today - the so-called **'Landscape Character'.**

Biodiversity is not separate from landscape character; it is a part of it. The habitats we see in the landscape today – the woodlands, grasslands and wetlands for example – are significant elements of the landscape. What's more, the occurrence of habitats, or their historic losses from a landscape, will also have been shaped by the same human factors, such as conversion to agriculture, which have a significant influence on the landscape. Biodiversity and landscape character are intricately linked.

Hedgehog. Credit: Nikki Charlton (via PTES)

Combining the characterisation of landscape and the natural environment is not new. In 1996 the Countryside Commission (now Natural England) published the **Character Map of England**, identifying 159 **Joint Character Areas**, each one being a broad tract of countryside that displays similar landscape characteristics. In 2005 Natural England, with the support of English Heritage, updated this map to produce the **'Character of England Landscape, Wildlife and Cultural Features Map'**, which continued to subdivide England into 159 **National Character Areas (NCAs),** on the basis of the differences in landscape character, wildlife and cultural features, all defined at the national scale. The work identified areas like the White Peak and Dark Peak, and described the landscape features that define its character and local distinctiveness.

This work was further developed locally by Derbyshire County Council, in partnership with district and borough councils. It subdivided these broad Character Areas into **'Landscape Character Types',** such as 'Riverside Meadows' and 'Open Moors', to describe the diversity of the landscape within our county, excluding the Peak District National Park. Written descriptions for the landscape character types of Derbyshire, supported by photographs and tables, have now been published in **'The Landscape Character of Derbyshire'** document (Derbyshire County Council, 2003). This work characterised the diverse landscapes of our county into a finer, more detailed picture, more recognisable at the local level and more precisely defining the character of these areas. Most recently, the **East Midlands Landscape Partnership** has investigated landscape character at the regional level, and in April 2010, produced **The East Midlands Regional Landscape Character Assessment**.

In developing the new Lowland Derbyshire Biodiversity Action Plan, it was quickly recognised that our plan needed to reflect the emerging trends towards landscape-scale conservation. In particular, it was noted that landscape characterisation, which includes an assessment of habitats and biodiversity assets, would provide a useful tool in the development of the LBAP. As work progressed, it became apparent that much of our habitat and species data correlated very strongly with **Landscape Character Areas**, and it was decided that landscape character assessment work would be integrated into the LBAP. In particular, it was decided that within the LBAP, the county could be subdivided into different character areas, recognising the occurrence of habitats and species in those areas, and the different approaches to conservation that might be required.

The reasons for this are multiple:

- Emerging approaches in biodiversity are increasingly recognising the need to work at the landscape scale.
- Existing landscape characterisation work provides an established mechanism for dividing large areas such as counties into smaller units on the basis of their environmental character.
- Landscape character assessment includes biodiversity interests in the underlying assessment methodology, and biodiversity assets strongly correlate with landscape character types.
- Landscape character assessment methodologies are recognised and accepted nationally, and fit neatly into characterisation work completed at the national level
- Landscape character areas include a suite of habitats, which are broadly defined by the same environmental and anthropogenic influences. In effect these are functional, recognisable ecosystems.
- As the occurrence of habitats and species differs from area to area, habitat and species conservation action can be targeted at those areas in which those habitats and species are currently, or were formerly found.
- Targets can be set for each area, ensuring that conservation actions are appropriate for the environmental conditions and character of that area
- By defining geographical areas of similar environmental character, it is hoped that local conservation groups, parish councils and landowners will be better able to engage with the LBAP by joining their local area group. In turn, they will be able to liaise with, cooperate with and learn from each other, as each group will most likely be working with similar habitats and species, under similar conditions
- Many other LBAPS are also developing their new action plans on the basis of landscape characterisation; this will allow biodiversity action to extend across administrative boundaries, following more natural landscape type boundaries
- By recognising the unique environmental and biodiversity characteristics of each area, and working towards common aims for them, it will be possible to add value to each others work, producing functioning environments of interconnected habitats characteristic of that area – true landscape-scale delivery
- This approach should support funding bids, demonstrating that the actions of a group, landowner or project contribute to the specific targets for that area, and contribute to landscape-scale delivery.

It should be recognised that the use of landscape characterisation in the development of LBAPs is not new in Derbyshire. The existing boundary between the Lowland Derbyshire and Peak District LBAPs is defined according to National Character Areas, rather than administrative boundaries.

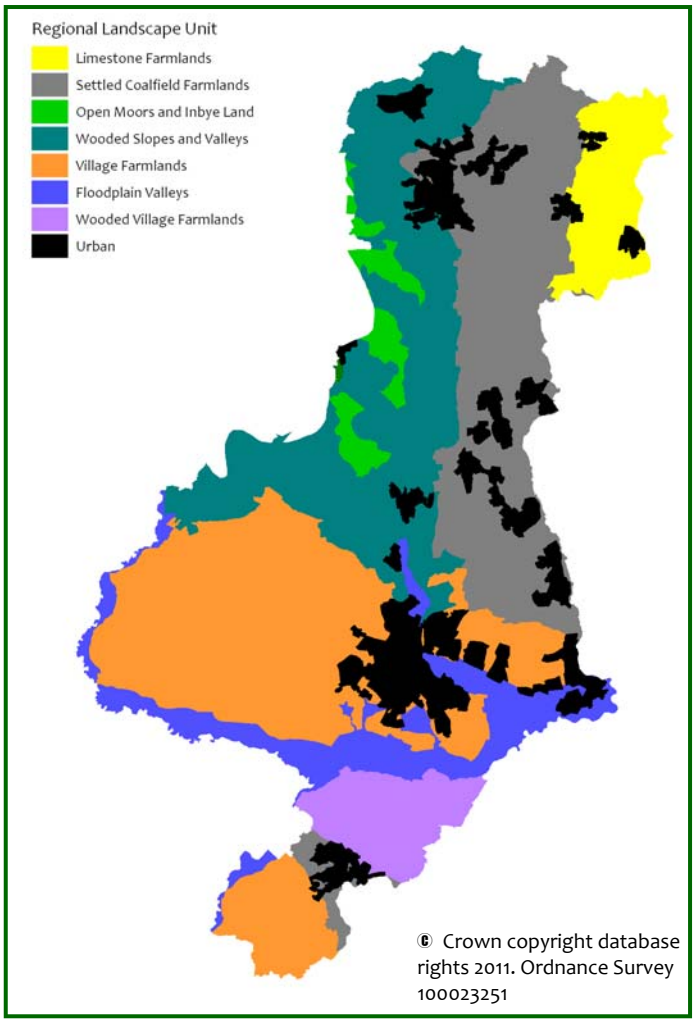
For practical reasons, the eight **Action Areas** set out in this new Lowland Derbyshire Biodiversity Action Plan are drawn from the regional landscape characterisation work. For our purposes they function at a more suitable geographic scale. They are more detailed than national landscape types, yet less numerous than Derbyshire's own Landscape Character Types.

The LBAP Action Areas defined here follow the regional divisions, but with three notable exceptions:

- **Derby** - Built up areas, including cities such as Derby, are excluded from landscape character assessment work, although the urban area of Derby is surrounded by four different landscape character types. As Derby city has a unitary local authority and a city-wide 'WildDerby' project that delivers effective biodiversity results across the area, it was logical to identify Derby as a separate Action Area that follows the city's administrative boundary.

- The Action Areas of **Erewash Valley** and **The Rother& Doe Lea Valleys** have been created as two separate entities from one larger Regional Landscape Unit (the Settled Coalfield Farmlands), despite having very similar landscape characteristics. They have simply been divided along the watershed between the southerly-flowing Erewash and the northerly-flowing Rother and Doe Lea rivers.

- The **National Forest area** as defined here is an LBAP Action Area consisting of three small segments of three much larger and very different regional landscape units. These are the Wooded Village Farmlands, the Settled Coalfield Farmlands, and the Village Farmlands. For practical reasons they have been brought together into one Action Area here. Note, also, that the National Forest Development Agency does have its own operations-wide biodiversity action plan, and that that their plan cuts across a much larger area, covering Staffordshire, Derbyshire and Leicestershire.



True distribution of the Regional Landscape Units in Lowland Derbyshire which have since been simplified into eight Action Areas for use in this LBAP document.

The Action Areas defined in this LBAP are shown in Figure 2.

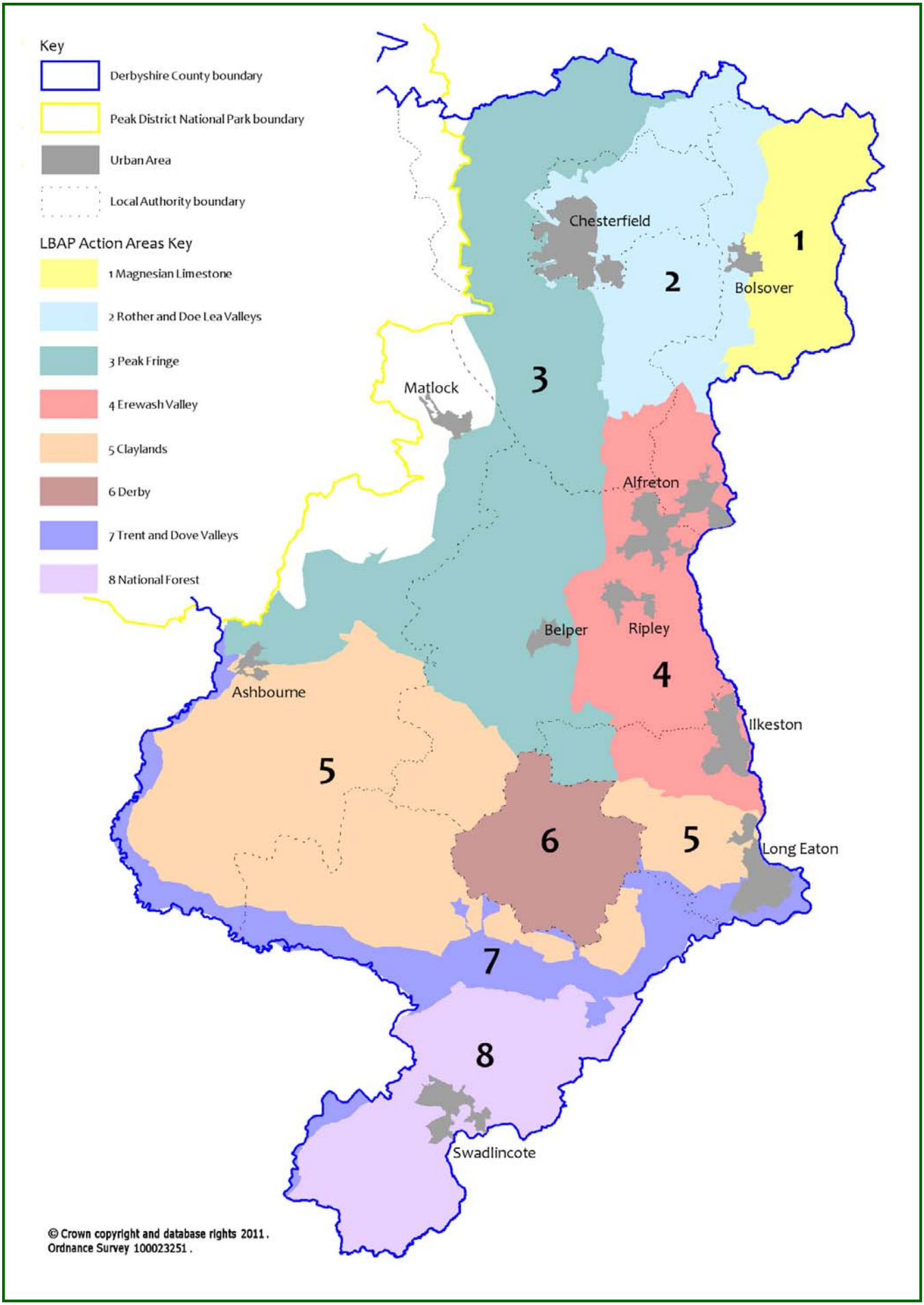
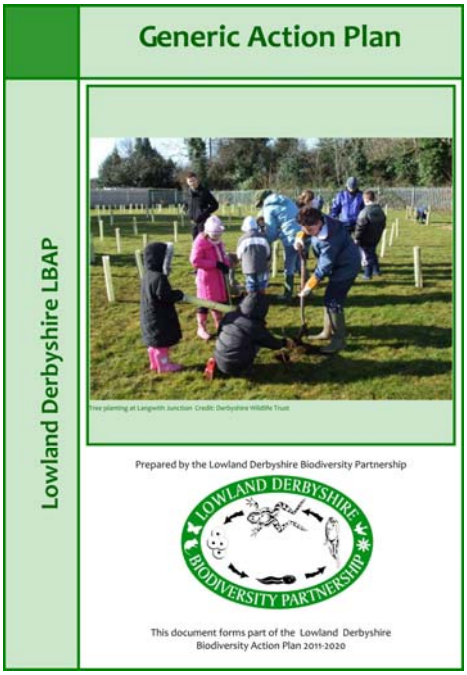


Figure 2: LBAP Action Areas

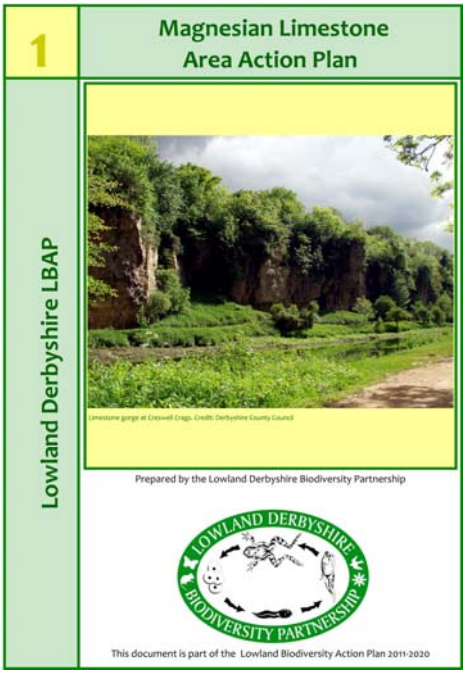
2. Structure of the revised LBAP

This revised LBAP is composed of a number of sections. Each section should be read within the context of the whole document. Please see the **Contents Page** and the **Quick Start Guide** for a simple overview of its layout and content.

Generic Action Plan. This section contains a number of key actions which partners can carry out irrespective of habitat, species or location. These are tasks such as surveying, monitoring, promotion, public engagement and invasive species control etc. These were previously included in separate habitats and species action plans. They are now combined into one single **Generic Action Plan**.



Action Areas. Each of the eight **Action Areas** shown on Figure 2 has its own action plan. These include specific targets to guide delivery within it. Also included is a list of partners that work in that area, as well as information on the current challenges and opportunities, including existing or future biodiversity projects likely to be running during the Plan Period to 2020. Each area plan also includes information on the known biodiversity resource available, plus statistics showing progress towards delivering targets. These may get modified as more local data becomes available, the Derbyshire Biodiversity website should always be checked for the most up-to-date version of any document. Recent mapping work to review achievements of the previous 2005-2010 plan period has enabled us to plot all known Priority Habitats in great detail. This data has been used to calculate the area's statistics given within in each plan and to plot habitats onto **Detailed Maps**.



A single **Cumulative Target** table summarises all habitat actions across all Action Areas .

Much is known about the issues associated with, and the distribution of, UK Priority Habitats in Derbyshire. This data can be found in the individual habitat **Background Information** documents.

Species Action Plan documents will be prepared from 2012 to provide more guidance on local trends and distribution for Priority Species, as well as a number of actions to aid their conservation.

All updates to these documents will be done online. Please refer to the Derbyshire Biodiversity website to ensure you are using the most up-to-date documents.

See Appendix 1 and 2 in this Introduction for tables of UK Priority Habitats and Species recorded in the LBAP area .

Section	Contents	Frequency of review
Introduction	LBAP overview	Unlikely to be reviewed in plan period
Generic Action Plan	Actions applying to the entire LBAP area	May have a mid–term review in 2015
Overview of LBAP Targets	Summary of all targets	May have a mid–term review in 2015
Area Action Plans (8 in total one per area)	Area Action Plan, map, background Information, targets and achievements.	Achievements updated annually.
Priority Habitat Background Information	Further information for reference	Only if new information becomes available.
Species Documents and associated actions	Action plans for individual species. (Available online from 2012)	Species plans to be added piecemeal.
List of LBAP Partners	Partners signed up to the LBAP and agreeing to take part in partnership activities	Whenever main list of partners is updated

2.1 Monitoring

It is hoped this new LBAP structure will enable partners to record their work more easily , report on their activities and to feed back to their area group on the work they have done. Just as before, it is envisaged that the Lowland Derbyshire Biodiversity Project Officer post will coordinate reporting, collecting and collating data, monitoring progress against targets and providing performance data to the UK Biodiversity Action Plan through **'BARS'**, the **Biodiversity Action Reporting System**.

Biodiversity delivery will be recorded spatially on a digital mapping system by the Biodiversity Project Officer and the Local Record Centre Partnership. This allows achievements and opportunities to be viewed at a landscape scale. Each of the area action plans ends with an **'Achievements to Date'** page which will be updated annually and will monitor the progress towards all area targets. To do this we need clear feedback from all partners in order to accurately monitor and report on our achievements and combined efforts.

2.2 Who is involved?

The Lowland Derbyshire Biodiversity Partnership is a broad partnership, currently made up of almost 100 organisations from the private, public and voluntary sectors who have agreed to work together to deliver the aims of the Lowland Derbyshire Biodiversity Action Plan.

Partner organisations include statutory bodies, local authorities, voluntary organisations, parish councils, community groups and other groups and organisations. The work of the partnership is coordinated and supported by a Project Officer post, hosted by Derbyshire County Council. The work of the partnership has been financially supported by Natural England, Derbyshire County Council, the partner District and Borough councils, Derby City Council, the Environment Agency and the Forestry Commission.

A list of **current partners** is provided at the end of this LBAP. Approaches from newly-created community action groups and from Parish Councils keen to support the work of the LBAP are particularly welcome.

Lowland Derbyshire Biodiversity Partnership

Lowland Derbyshire LBAP

The Lowland Derbyshire BAP is supported and delivered by a partnership of many organisations. Some are statutory agencies, some are local authorities, whilst many more are non-governmental organisations - charities, voluntary groups and local societies.

We always welcome new additions to the Partnership from any organisation able to deliver action for biodiversity in our region. In particular we invite all Parish Councils to join us to express support for our work.

For more information, contact the Lowland Derbyshire LBAP Officer via the Derbyshire Biodiversity website at www.derbyshirebiodiversity.org.uk or ring 01629 539771

Statutory Agencies
Environment Agency
Natural England
Forestry Commission
Highways Agency

Local Authorities
Amber Valley Borough Council
Chesterfield Borough Council
Derbyshire County Council
Erewash Borough Council
South Derbyshire District Council
Bolsover District Council
Derby City Council
Derbyshire Dales District Council
North East Derbyshire District Council

Voluntary Organisations
BTCV
Farming and Wildlife Advisory Group
Groundwork Derby and Derbyshire
RSPB
Woodland Trust
Derbyshire Wildlife Trust
Groundwork Creswell, Ashfield and Mansfield
National Trust
Small Woods Association

Other Organisations
Bolsover Countryside Partnership
Countryside Landowners Association
Environmental Education Project
Meynell Langley Estate
National Forest Company
British Waterways
Derbyshire Constabulary
East Midlands Biodiversity Partnership
National Farmers Union
Severn Trent Water

Local & Community Groups
Antony Gell School Foundation
Darley and Nutwood Nature Reserve Management Group
Derbyshire Alternative Technology Association (DATA)
Denby Footpaths Group
Derby Pond Warden Association
Derby & Sandiacre Canal Trust
Derbyshire Amphibian and Reptile Group

www.derbyshirebiodiversity.org.uk 1

2.3 How it works

The Derbyshire Biodiversity Partnership is managed by an Executive Steering Group and a Steering Group, both of which meet twice a year. They receive progress reports and updates from the Biodiversity Project Officer post and determine future targets for work.

It is envisaged that each of the eight Action Areas will meet as separate area groups, although at the time of publication the precise mechanism for this has yet to be determined. We hope to continue with annual conferences, producing regular newsletters and developing new ways of communicating both within and beyond the existing Lowland Derbyshire Biodiversity Partnership.

Toothwort in Darley Park, Derby.
Credit Nick Moyes

Fungal foray display.
Credit: Debbie Alston

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Appendix 1: UK Priority Habitats in the LBAP Area

Table 1 shows which UK Priority Habitats which have been recorded in the Lowland Derbyshire Biodiversity Action Plan region and in which of the eight Action Areas they occur.

1) ML—Magnesian Limestone area
2) RD—River Rother and Doe Lea Valleys area
3) PF—Peak Fringe area
4) EV—Erewash Valley area
5) CL—Claylands area
6) DE—Derby area
7) TD—Trent and Dove Valleys area
8) NF—National Forest area

Table 1: UK Priority Habitats in the LBAP area.

√√√ - Primary √√ - Secondary √ - Localised

Priority habitat	1 ML	2 RD	3 PF	4 EV	5 CL	6 DE	7 TD	8 NF
Arable Field margins	√√√	√√	√	√√	√√	√	√√√	√√
Calaminarian grassland			√					
Coastal and Floodplain grazing marsh	√	√√√	√√√	√√√	√√	√√√	√√√	√√
Hedgerows	√√√	√√√	√√√	√√√	√√√	√√	√√	√√√
Inland Rock outcrop and scree habitats	√		√		√			√
Lowland calcareous grassland	√√√	√	√	√		√		√
Lowland mixed deciduous woodland	√√√	√√√	√√√	√√√	√√	√√√	√√	√√√
Lowland dry acid grassland	√	√	√√√	√	√√	√	√	√√
Lowland Fens		√	√		√			
Lowland heathlands		√	√√	√	√			√
Lowland meadows	√√	√√√	√√√	√√√	√√√	√√	√√√	√√√
Mesotrophic lakes	√√	√√√	√√	√√√	√√	√	√√√	√√√
Open mosaic habitats on previously developed land	√	√	√	√	√	√	√	√
Ponds	√√	√√√	√√	√√√	√√√	√√√	√√√	√√√
Reedbeds		√√	√	√√			√√√	√
Rivers	√	√√√	√√√	√√√	√	√√√	√√√	√√
Traditional Orchards	√	√	√	√	√	√	√	√
Wet woodland	√	√√√	√	√√√	√√	√√	√√√	√√√
Wood pasture & Parkland (including Veteran Trees)	√√	√	√√	√√	√√√	√√√	√	√√√

Appendix 2: UK Priority Species in the LBAP Area

Tables 2-8 show the UK priority species which have been recorded in the Lowland Derbyshire Biodiversity Action Plan area since 2000 and in which Action Areas they can be found.
(This is based upon the best information available to date, and is liable to being updated)

1) ML—Magnesian Limestone area
2) RD—River Rother and Doe Lea Valleys area
3) PF—Peak Fringe area
4) EV—Erewash Valley area
5) CL—Claylands area
6) DE—Derby area
7) TD—Trent and Dove Valleys area
8) NF—National Forest area

√ - recorded in the area (√) - unconfirmed

Table 2: UK Priority Bryophyte, Fungus and Vascular Plant Species recorded in this LBAP area.

Type	English Name	1 ML	2 RD	3 PF	4 EV	5 CL	6 DE	7 TD	8 NF
Mosses	Sausage-beard moss			√					
	Flamingo moss	√							
Fungi	Oak polypore					√			√
Vascular Plants	Grass-wrack Pondweed				√				
	Tubular Water Dropwort				√			√	

Table 3: UK Priority Amphibian and Reptile Species recorded in this LBAP area.

Type	English Name	1 ML	2 RD	3 PF	4 EV	5 CL	6 DE	7 TD	8 NF
Amphibians	Great crested newt	√	√	√	√	√	√	√	√
	Common toad	√	√	√	√	√	√	√	√
Reptiles	Adder			√					√
	Common lizard	√	√	√	√	√	√	√	√
	Grass snake	√	√	√	√	√	√	√	√
	Slow worm	√	√	√	√	√	√	√	√

Table 4: UK Priority Fish Species recorded in this LBAP area.

Type	English Name	1 ML	2 RD	3 PF	4 EV	5 CL	6 DE	7 TD	8 NF
Fish	Atlantic Salmon			√				√	
	Brown trout			√		√		√	
	Eel		√	√		√		√	

Table 5: UK Priority Bird Species recorded in this LBAP area (not necessarily breeding)

Type	English Name	1 ML	2 RD	3 PF	4 EV	5 CL	6 DE	7 TD	8 NF
Birds	Bullfinch	√	√	√	√	√	√	√	√
	Corn bunting [1]	√	√	√		√	√	√	√
	Cuckoo [2]	√	√	√		√	√	√	√
	Curlew	√	√	√		√	√	√	√
	Dunnock	√	√	√	√	√	√	√	√
	Grasshopper warbler	√	√	√		√	√	√	√
	Grey partridge	√	√	√	√	√	√	√	√
	Hawfinch		√	√		√	√	√	√
	Herring Gull [3]	√	√	√	√	√	√	√	√
	House sparrow	√	√	√	√	√	√	√	√
	Lapwing	√	√	√	√	√	√	√	√
	Lesser Redpoll	√	√	√		√		√	√
	Lesser spotted woodpecker	√	√	√	√	√	√	√	√
	Linnet	√	√	√	√	√	√	√	√
	Marsh tit	√	√	√	√	√	√	√	√
	Reed bunting	√	√	√	√	√	√	√	√
	Skylark	√	√	√	√	√	√	√	√
	Song thrush	√	√	√	√	√	√	√	√
	Spotted flycatcher	√	√	√	√	√	√	√	√
	Starling	√	√	√	√	√	√	√	√
	Tree pipit	√	√	√	√	√	√	√	√
	Tree sparrow	√	√	√	√	√	√	√	√
	Turtle dove	√	√	√	√	√		√	√
	Twite [4]	√		√	√			√	
	Willow tit	√	√	√	√	√	√	√	√
	Wood Warbler		√	√	√	√	√	√	√
	Yellowhammer	√	√	√	√	√	√	√	√
	Yellow wagtail	√	√	√	√	√	√	√	√

[1] Corn bunting: now an infrequent breeder

[2] Cuckoo: declining breeder

[3] Herring Gull: not breeding

[4] Twite: only breeds in Peak LBAP area.

Table 6: UK Priority Mammal Species recorded in this LBAP area.

Type	English Name	1	2	3	4	5	6	7	8
		ML	RD	PF	EV	CL	DE	TD	NF
Mammals	Brown hare	√	√	√	√	√	√	√	√
	Brown long-eared bat	√	√	√	√	√	√	√	√
	Dormouse			√					
	Harvest mouse	√	√	√	√	√	√	√	√
	Hedgehog	√	√	√	√	√	√	√	√
	Noctule	√	√	√	√	√	√	√	√
	Otter			√		√	√	√	√
	Pine martin			(√)					
	Polecat		√	√	√	√	√	√	√
	Soprano pipistrelle	√	√	√	√	√	√	√	√
	Water vole	√	√	√	√	√	√	√	√

Table 7: UK Priority Invertebrates (other than moths) Species recorded in the LBAP area.

Type	English Name	1	2	3	4	5	6	7	8
		ML	RD	PF	EV	CL	DE	TD	NF
Ants	Shining guest ant			√					
Beetles	Necklace ground beetle			√					
Butterflies	Dingy skipper	√	√	√	√	√			√
	Grizzled skipper	√							√
	Small heath	√	√	√	√			√	√
	Wall	√	√	√	√	√		√	√
	White admiral								√
	White letter hairstreak	√	√	√	√	√	√	√	√
Crustaceans	White-clawed crayfish		√	√	√	√	√		√

Table 8: UK Priority Moths Species recorded in this LBAP area.

Type	English Name	1 ML	2 RD	3 PF	4 EV	5 CL	6 DE	7 TD	8 NF
Moths	Argent and sable			√					√
	August thorn		√			√			
	Autumnal rustic		√		√			√	√
	Beaded chestnut	√	√	√	√	√	√	√	√
	Blood-vein	√	√	√	√	√	√	√	√
	Brindled beauty	√	√	√	√	√	√	√	√
	Broom moth	√	√	√	√	√	√		√
	Brown-spot pinion	√	√	√	√			√	√
	Buff ermine	√	√	√	√	√	√	√	√
	Centre-barred sallow	√	√	√	√	√	√	√	√
	Dark spinach						√	√	
	Dark-barred twin-spot carpet				√			√	
	Deep-brown dart	√			√	√	√	√	√
	Dot moth	√	√	√	√	√	√	√	√
	Double dart			√				√	√
	Dusky brocade	√	√	√	√	√	√	√	√
	Dusky thorn		√	√	√	√	√	√	√
	Dusky-lemon sallow		√					√	√
	Ear moth			√					
	Feathered gothic		√	√				√	
	Figure of eight		√	√	√				
	Flounced chestnut		√	√					√
	Forester			√					
	Garden dart		√		√		√	√	√
	Garden tiger	√	√	√		√		√	√
	Ghost moth	√	√	√	√	√	√	√	√
	Grass rivulet	√		√					
	Green-brindled crescent	√	√	√	√	√	√	√	√
	Grey dagger	√		√		√	√	√	√
	Heath rustic		√						
	Knot grass	√	√	√	√				√
	Large nutmeg							√	
	Latticed heath	√	√	√	√	√	√	√	√
	Minor shoulder-knot		√				√	√	
	Mottled rustic		√	√		√	√	√	√

Table 8 (cont.): UK Priority Moths Species recorded in this LBAP area.

Type	English Name	1 ML	2 RD	3 PF	4 EV	5 CL	6 DE	7 TD	8 NF
Moths	Mouse moth	√	√	√	√	√	√	√	√
	Oak hook-tip	√	√		√	√	√	√	√
	Oblique carpet					√			
	Pale eggar							√	√
	Powdered quaker	√	√	√	√		√	√	√
	Pretty chalk carpet								√
	Rosy minor	√	√	√	√		√	√	√
	Rosy rustic	√	√	√	√	√	√	√	√
	September thorn			√		√			
	Shaded broad-bar	√	√	√	√	√	√	√	√
	Shoulder-striped wainscot	√	√	√	√	√	√	√	√
	Small emerald				√		√	√	√
	Small phoenix	√	√	√	√	√	√	√	√
	Small square-spot	√	√	√	√	√	√	√	√
	The cinnabar	√	√	√	√	√	√	√	√
	The crescent							√	√
	The rustic	√		√	√	√	√	√	√
	The sallow	√	√	√	√		√	√	√
	The spinach	√		√	√		√	√	√
	The sprawler				√				
	The streak	√			√				
	White ermine	√	√	√	√	√	√	√	√
	White-spotted pinion								√

Generic Action Plan

Lowland Derbyshire LBAP

Tree planting at Langwith Junction Credit: Derbyshire Wildlife Trust

Prepared by the Lowland Derbyshire Biodiversity Partnership

This document forms part of the Lowland Derbyshire Biodiversity Action Plan 2011-2020

The actions listed here are **appropriate to all areas** of the Lowland Derbyshire LBAP and are relevant to all **UK Priority Species and Habitats**. There are no targets linked to them because they cover a very broad range of work and activities that need to be carried out throughout the entire 2011-2020 LBAP period. (For more detailed Actions and specific Targets, please refer to each of the eight geographic subdivisions of this LBAP, known as **Action Areas**)

Whilst the partners most suited to delivering each Generic Action are listed below them, this should not prevent others from carrying out these actions where it is consistent with their organisation's aims and objectives.

1. Key actions:

1. **Survey and monitor** Priority Habitat and Priority Species, and update databases and GIS layers as appropriate. Enhance knowledge by focused surveying and data gathering (with emphasis on open mosaic habitats, hedgerows and traditional orchards). Enhance knowledge of locally important species through recording, research and publication to inform future conservation activities. Share data, as appropriate, within the Partnership and encourage uploading of records to NBN Gateway.

Action by: *Local Record Centre Partnership, Local Wildlife Sites Partnership and county recorders/ recording groups, site managers and owners*

2. Provide appropriate **protection** to Priority Habitats and Priority Species through **designated sites** such as Sites of Special Scientific Interest, Local Wildlife Sites and Local Nature Reserves. Designate new sites and remove sites which no longer qualify.

Action by: *Natural England, Local Wildlife Sites Partnership and local authorities, including Parish and Town Councils*

3. **Protect** sites and species through the **use of wildlife legislation**.

Action by: *Natural England and Derbyshire Constabulary, aided by local species experts and Derbyshire Wildlife Trust*

Plant recording for the Flora of Derbyshire project.
Credit: Groundwork Derby and Derbyshire

Surveying aquatic life in ponds.
Credit: Groundwork Derby and Derbyshire

4. **Protect** Priority Habitats and Species and promote conservation management, restoration and creation through **effective use of the planning system** through negotiation, the use of mitigation and compensation, the use of conditions and, where necessary, by refusing permission for development.

Action by: *Derbyshire Wildlife Trust, Environment Agency, local authorities, National Forest Company, Natural England and RSPB.*

5. Work to remove or reduce the influence of known **invasive species** where these threaten the future of Priority Habitats or Species

Action by: *All partners and landowners*

6. Provide conservation **land management advice** and support to landowners, LBAP partners, community groups and others who could help achieve the LBAP targets (including management, restoration and creation of priority habitats).

Action by: *BTCV, Derbyshire Wildlife Trust, Forestry Commission, FWAG, Groundwork Derby & Derbyshire, LBAP Partnership, National Forest Company, Natural England, RSPB, WildDerby, landscape projects, community groups and county specialists as appropriate.*

Interpretation at Forbes Hole LNR.
Credit: Groundwork Derby and Derbyshire

Introducing people to Peregrine Falcons at Derby Cathedral.
Credit: Derbyshire Wildlife Trust

7. Manage sites, within partners' ownership, for the achievement of the LBAP targets.

Action by: *All partners*

8. **Promote agri-environmental schemes** and similar schemes (such as Environmental Stewardship, England Woodland Grant Scheme, Changing Landscape Scheme etc) to appropriate audiences to work towards the achievements of the LBAP targets.

Action by: *Derbyshire Wildlife Trust, Forestry Commission, FWAG, National Forest Company, Natural England, RSPB and landscape projects as appropriate.*

9. **Raise awareness** of biodiversity issues through newsletters, press releases, education, interpretation, training, events and web media, etc.

Action by: *All partners, LBAP Project Officer*

10. **Develop projects** and submit **funding bids** to achieve LBAP targets.

Action by: *All partners*

11. **Monitor** the achievements of the partnership and track progress towards LBAP targets. Ensure information is passed to others who need this data e.g. UK/England/Regional Biodiversity partnerships; funding organisations and the media.

Action by: *LBAP Partnership, especially LBAP Project Officer*

12. **Work with volunteers** and **community groups** to achieve the LBAP targets, providing assistance such as training or financial, where appropriate. This would be especially valuable where individuals, groups and organisations are not already engaged in biodiversity activities.

Action by: *All partners*

13. **Promote** the inclusion of biodiversity in the objectives of other sectors such as social, economic and tourism agendas wherever possible.

Action by: *All partners*

14. Encourage the **expansion** of BAP Priority Species by targeted **habitat enhancements**, including those where no targets have been stated.

Action by: *All partners , landowners and gardeners*

15. Prepare and publish concise **Species Action Plans** for a range of selected species to be added to this document on the Derbyshire Biodiversity website from 2012 onwards.

Action by: *LBAP Partnership, especially LBAP Project Officer, Derbyshire Wildlife Trust, county recorders, recording groups*

16. Develop mechanisms for individuals or groups in the wider community to **demonstrate support** for the aims of the LBAP process, and to **play an active part** in enhancing Derbyshire's biodiversity.

Action by: *All partners, LBAP Project Officer*

Left: Pond restoration. Credit: Bolsover Woodland Enterprise
Right: The Moss Valley Wildlife Group hedgelaying on their Silver Jubilee. Credit: Moss Valley Wildlife Group

Table 1: The table below provides information on the contributions made by each type of LBAP partner towards the Generic Actions and Area Targets.

Key

√ - Partner usually carries out this function.

(√) - Partner and non-partners may carry out this function if their skills and interests allow.

Partner	Surveying & recording	Site management (including management, restoration and creation)	Land manage-ment advice	Planning advice/ responsibility/ commenting on applications	Working with volunteers	Grant aiding	Education & awareness raising
BTCV		√	√		√		√
Businesses		√			√		√
Derbyshire Constabulary		√					√
Derbyshire Wildlife Trust	√	√	√	√	√		√
Developers		(√)		(√)			(√)
Ecological Consultancies	(√)		(√)	(√)			
Environment Agency	√	√		√			√
Forestry Commission	√	√	√	√	√	√	√
Farming and Wildlife Advice Group (FWAG)		√	√				√
Groundwork Derby & Derbyshire; Groundwork Creswell, Ashfield and Mansfield	√	√	√		√		√
Highways Agency	√	√					√
Individuals	(√)	(√) (gardens)					
Landowners and Tenant Farmers	(√)	√			(√)		(√)
Local community groups and 'Friends of Groups'	√	√	(√)	(√)	√		√
Local Authorities	√	√	√	√	√	√	√

Partner	Surveying & recording	Site management (including management, restoration and creation)	Land manage-ment advice	Planning advice/ responsibility/ commenting on applications	Working with volunteers	Grant aiding	Education & awareness raising
Lowland Derbyshire Biodiversity Partnership co-ordinator			√				√
Mineral Companies	√	√				√	√
National Farmers Union			√				√
National Forest Company	√	√	√	√	√	√	√
National Trust	√	√	√		√		√
Natural England	√	√	√	√	√	√	√
Parish and Town Councils	(√)	(√)		(√)	(√)		(√)
RSPB	√		√	√	√		√
Schools, Colleges and Universities	(√)	(√)			(√)		(√)
Special Interest Groups (including county recorders, recording groups and national/ local specialists	√		(√)		(√)		(√)
Severn Trent Water		√			√		√
Small Woods Association			√				√
Woodland Trust		√	√		√		√

Lowland Derbyshire Action Areas

Lowland Derbyshire LBAP

Click links:

1 Magnesian Limestone

2 Rother and Doe Lea Valleys

3 Peak Fringe

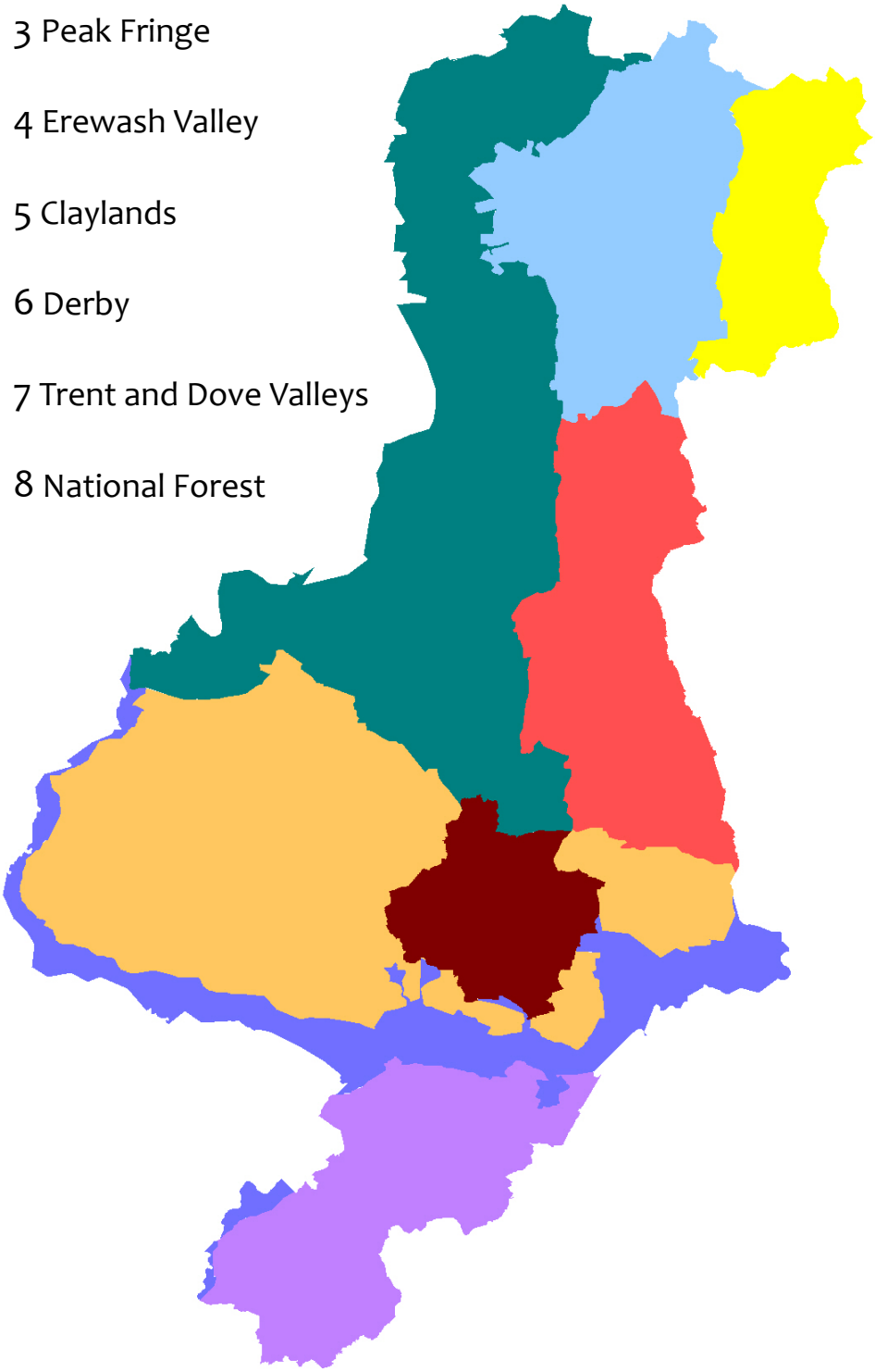
4 Erewash Valley

5 Claylands

6 Derby

7 Trent and Dove Valleys

8 National Forest



"For me, the real truth, the real truth about wildlife is as much as that wildlife depends upon us, we depend upon it. And therefore I think we've got to get it right, and we ought to do it now."

Chris Packham,
'The Truth About Wildlife' Series,
BBC, 2011

LOWLAND DERBYSHIRE BIODIVERSITY PARTNERSHIP

www.derbyshirebiodiversity.org.uk

1

Magnesian Limestone Area Action Plan

Lowland Derbyshire LBAP

Limestone gorge at Creswell Crags. Credit: Derbyshire County Council

Prepared by the Lowland Derbyshire Biodiversity Partnership

This document is part of the Lowland Biodiversity Action Plan 2011-2020

Magnesian Limestone Area

Contents

Map of Magnesian Limestone Action Area

1.1 Area Description

1.2 Vision

1.3 The Challenges and Opportunities

- 1.3.1 Existing initiatives and projects
- 1.3.2 Main landowning bodies
- 1.3.3 Key Sites

1.4 **Key Actions** for Magnesian Limestone Area

1.5 **Key Targets** for Magnesian Limestone Area

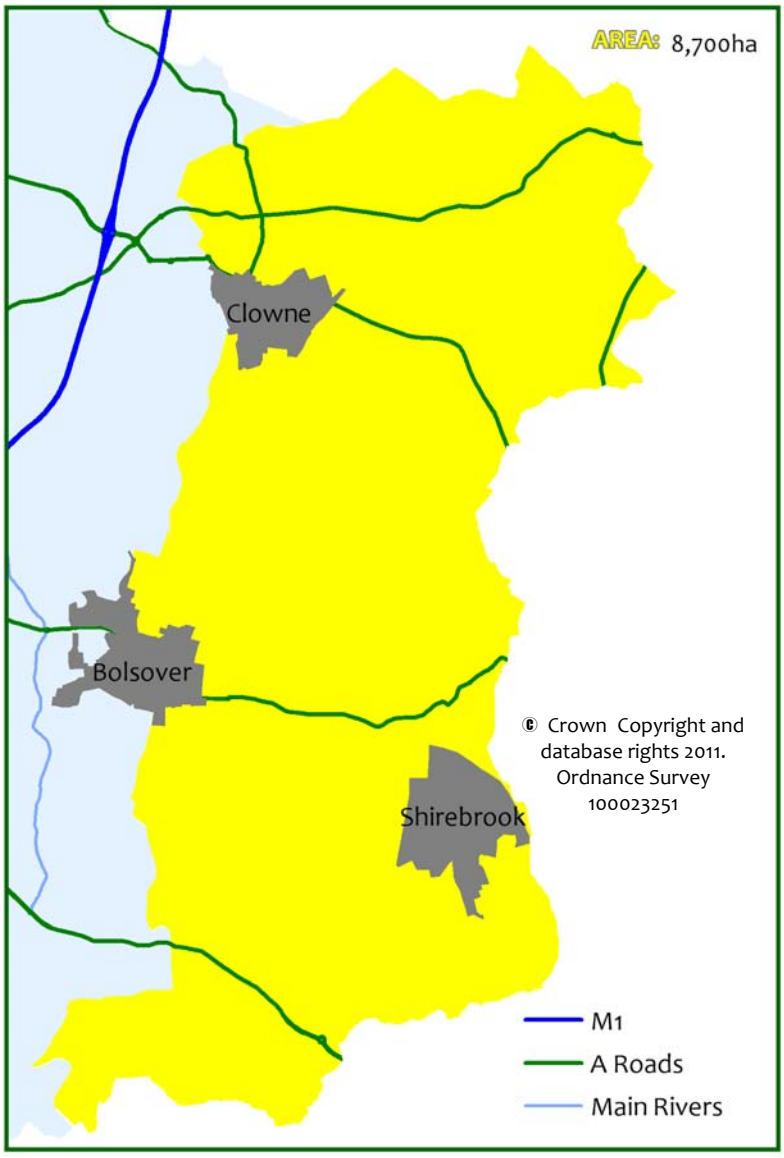
- 1.5.1 Targets for UK BAP Priority Habitats (with Target Table 1.1)
- 1.5.2 Targets for UK BAP Priority Species (with Target Table 1.2)

1.6 Appendix 1: Current Biodiversity Resources

- 1.6.1 UK BAP Priority Habitat Resources
- 1.6.2 UK BAP Priority Species Resources (with Species List Table 1.3)
- 1.6.3 Organisational and Manpower Resources

1.7 Appendix 2: Achievements to Date

1. Magnesian Limestone Area
- ACTION PLAN –



Map of Magnesian Limestone Action Area

For further detail see Maps section

1.1 Area Description:

The Magnesian Limestone area is a gently rolling plateau dissected by narrow river valleys and rocky gorges. The landscape is characterised by large arable fields enclosed by predominantly hawthorn hedgerows. Small fragments of unimproved limestone grassland remain in areas least suitable for cultivation. Mixed-species hedgerows are associated with historic boundaries and green lanes. There is some very large woodland, often on ancient woodland sites as well as younger plantations associated with the reclamation of former colliery tips. Caves and rock shelters also occur across the area, the best known being Creswell Crags.

The area includes two Sites of Special Scientific Interest (SSSIs) and parts of two further SSSIs, one Local Nature Reserve, 12 RIGS, 47 Local Wildlife Sites and a number of potential Local Wildlife Sites.

The Magnesian Limestone area comprises two Derbyshire Landscape Character Types:

- Limestone Farmlands
- Limestone Gorges

Use the Derbyshire County Council online mapping system to view Landscape Character Types within this Lowland Derbyshire LBAP area. www.derbyshire.gov.uk/maps

This Action Area includes the settlements of Whitwell, Clowne, Creswell, Bolsover, Shirebrook and Pleasley

1.2 Vision

A managed and connected landscape where a network of hedgerows and associated field margins link fragments of calcareous grassland, woodland and other semi-natural habitats.

1.3 The Challenges and Opportunities

This Action Area is the only part of the Lowland Derbyshire LBAP area where magnesian limestone grassland can be found. It makes up 63% of the overall lowland calcareous grassland resource. What remains is fragmented and outside of the agri-environmental schemes, whilst main partners' ownership is largely unmanaged. Opportunities for expansion, restoration and management are limited to sites with suitable soils, but Greenway development and restoration work at Whitwell do provide significant opportunities.

This area is predominately an agricultural landscape, dominated by arable fields which are mostly separated by over-managed, gappy hedgerows. These are poorly connected because many have been lost as fields have been expanded, and there is considerable opportunity for reconnections to be made. Associated with this, the area has experienced a gradual decline in its farmland bird populations. There is a significant opportunity to help reduce this decline by encouraging landowners to include arable field margin options in Entry Level Scheme applications. Coverage of Entry Level Scheme in the area is reasonable, but there are some significant gaps where take-up of the scheme is poor. Use of living bird tables outside Entry Level Schemes and Higher Level Schemes is an opportunity.

Landownership within the area is dominated by a handful of owners, mainly Chatsworth, Welbeck and National Trust estates. Tenant farmers are supported when applying for agri-environmental schemes. A number of biodiversity-related projects in this area will contribute towards the achievements of the Targets and with the engagement of local people in the landscape.

This area has had a number of large-scale reclamation and habitat creation schemes, associated with mineral extraction. Habitat creation on that scale is now limited to land associated with Whitwell and Bolsover Moor quarry. Whitwell Quarry has current planning permission until 2025, but there is likely to be some restoration within this LBAP plan period. Opportunities exist within the development of Steetley Quarry to protect priority habitats as well as restore and create others.

A small part of this Action Area is included within the Sherwood Higher Level Stewardship targeting area. This area also falls within the target are for the Forestry Commission's woodland bird supplement for the England Woodland Grant Scheme (EWGS) and, although the majority of the large estate woodlands are already under an existing EWGS, scope still exists to enhance the restoration work in these sites for woodland birds as well as returning the canopy to a native broad-leaved mixture.

This area of the LBAP area is very important for farmland birds. It is highlighted, under the national **Bird Conservation Targeting Project** as a target area for corn bunting, grey partridge, lapwing, turtle dove, tree sparrow and yellow wagtail. The Magnesian Limestone area is one of the last places in Derbyshire where turtle doves and corn buntings have been recorded.

This Action Area includes 47 **Local Wildlife Sites**, only seven of which are in 'favourable' or 'recovering' condition. The rest are mostly in an 'unfavourable' or 'unknown' condition. Unmanaged grassland and the presence of non-native invasive species in woodlands are the main causes. See section 1.3.3 for a list of key sites in the Magnesian Limestone area.

1.3.1 Existing initiatives and projects

There are a number of projects and initiatives which are working in this area. **The Bolsover Countryside Partnership**, hosted by Derbyshire County Council works throughout Bolsover District with a number of partners to deliver conservation, access and education projects.

The Limestone Journeys Project, is a HLF funded project to deliver conservation and heritage programmes in the area between 2011- 2016. The project boundary almost exactly matches the Action Area boundary.

The RSPB's **Lowland Derbyshire and Nottinghamshire farmland bird project** aims to work with landowners to submit Entry Level and Higher Level Stewardship applications to benefit farmland birds.

The aim of the National Trust's **Poulter Catchment Project**, which includes a small part of this area, is to improve the quality of the water bodies at Clumber Park in Nottinghamshire by carrying out catchment sensitive works to enhance riverine habitats, reduce flooding and retain soil on the land.

The **Bolsover Greenprint** is a mini-biodiversity action plan for the District of Bolsover. It has actions and targets relating to the entire District, only part of which lies within this Action Area.

1.3.2 Main landowning bodies

There are relatively few landowners within the area. The majority of the farmland is owned by Chatsworth and Welbeck estates, which they tenant out. They also own significant woodland sites. Major current mineral extraction sites are owned by Lafarge and Tarmac. The National Trust has an estate, which is larger than just Hardwick Park. Derbyshire County Council owns and manages a number of large former reclamation sites and the trails network. The Forestry Commission manages two very large woodlands, Pleasley Park and Whitwell Wood.

1.3.3 Key Sites

The key sites in Magnesian Limestone Action Area are:

- **SSSIs:** Creswell Crags SSSI, Hollinhill and Markland Grips SSSI
- **LNRs:** Pleasley Pit Country Park LNR, Rowthorne Trail LNR
- **Others:** Bolsover Moor Quarry, Hardwick Hall, Pleasley Park and Vale, Phoenix Trails network, Poulter Country Park, Scarcliffe Park, Steetley Quarry, Whitwell Quarry, Whitwell Wood and Wollen Meadow.

Pleasley Pit Country Park LNR.
Credit: Debbie Alston

1.4 KEY ACTIONS for the Magnesian Limestone area.

1. The **primary habitat objective** within the area is the maintenance, restoration and expansion of calcareous grassland, woodland and arable habitats to achieve targets in Table 1.1.

2. The **secondary objective** is to increase connectivity of semi-natural habitats to create larger habitat complexes using priority habitats, such as hedgerows wherever possible. To achieve this will require the creation of completely new habitats to link and extend existing networks.

3. Target renewing Entry Level Stewardship agreement holders to include appropriate actions for farmland birds.

4. Research and implement the creation of a white-clawed crayfish ark site.

Full targets for all Priority Habitats and Species are listed in Tables 1.1 and 1.2
All actions listed in the separate **Generic Action Plan** also apply to this area.

1.5 KEY TARGETS for the Magnesian Limestone area.

1.5.1 Targets for UK BAP PRIORITY HABITATS

Table 1.1 below lists the specific habitat targets for the Magnesian Limestone area. The requirements of UK BAP reporting mean that our own LBAP targets need to be presented as cumulative figures. The meaning of each column is explained below the table. See Maps section for the distribution of primary habitat features within this Action Area.

UK BAP Priority Habitat	(1) Current Extent at 2011 (i.e. Maintenance* Target to 2020)	Targets for 2011-2020		
		(2) Manage*	(3) Restore*	(4) Expand*
Primary feature:				
Lowland mixed deciduous woodland	900 ha	800 ha	n/a	30 ha
Lowland calcareous grassland	31 ha	25 ha	35 ha	20 ha
Hedgerows	unknown	An additional 10km	n/a	10 km
Field margins	unknown	60 ha#		
Secondary feature:				
Wood-pastures and Parkland	2 sites	2 sites	1 site	n/a
Lowland meadow	4 ha	4 ha	50 ha	2 ha
Localised feature:				
Traditional orchard	17 sites	5 sites	n/a	2 sites
Ponds	>90 ponds	40 ponds	5 ponds	5 ponds
Mire and Fen	3.1 ha	3.1	n/a	n/a
Open mosaic habitats	Unknown ∞			

Table 1.1 Targets for the Magnesian Limestone Action Area 2011-2020.

*Table explanation:
Terminology and measurements are the same as those used in the UK Biodiversity Action Plan (UK BAP). These are:

(1) ***'Maintenance'***–this is the current 2011 resource of each Priority Habitat, irrespective of condition and management that we must, *at the very least,* keep and carry forward into the next plan period after 2020. (i.e. no net loss.)
(2) ***'Manage'*** – The amount of Priority Habitat in (1) that we want to be under appropriate management to maintain in 'favourable' condition. This is a cumulative target, continuing on from the previous plan period.
(3) ***'Restore'*** – Habitat which is not in a 'favourable' condition, but which is under restorative management to bring it up to that condition. This is a cumulative target, continuing on from the previous plan period.
(4) ***'Expand'*** – New habitat created from scratch. This could be on a new site or an extension to an existing one. The target is for this Plan Period, though some habitats, such as woodland, take far longer to fully develop.

Notes to accompany Table 1.1

Grassland habitat creation should also be targeted where the underlying ground conditions are suitable and it links existing habitats.

Woodland creation should be appropriate and in accordance with the recommendations in the **Landscape Character of Derbyshire**, linking existing sites wherever possible.

Hedgerow restoration and creation work should be targeted along existing networks such as main roads, historic boundaries and green lanes where they are fragmented.

Due to the free-draining nature of this area, wetland creation is not suitable everywhere, so **pond** creation is likely to be associated with suburban situations and areas such as schools.

For **field margins** it is not possible to set separate targets for management, restoration or expansion. A single overall target for simply increasing this resource is provided. Figures can only be based on Entry Level Stewardship monitoring. Further habitat may also be provided through Living Bird Table initiatives

∞ ***Open mosaic habitats*** the distribution of this habitat is not well understood at the start of this Plan Period (see Generic Action Plan). Its presence is, however, important in this area. It should be maintained in situ wherever possible, especially where it contributes to a wider network linking key habitats.

1.5.2 Targets for UK BAP PRIORITY SPECIES

There are 76 UK BAP Priority Species recorded within the Magnesian Limestone Action Area since 2000. The distribution and status of many of these species is not currently well known, and consequently it is not possible to set meaningful targets for them. However, there are other species about which we do know enough to be able to set targets, monitor and assess their success. These are shown below in Table 1.2

The full list of UK BAP Species for the Magnesian Limestone area is given in Table 1.3 (see Section 1.6.2)

UK BAP Priority Species	Range targets to 2020 ($1km^2$)	Range expansion targets 2011-2020 ($1km^2$)	Method of expansion
Dingy Skipper	10	1	Appropriate habitat enhancement
Flamingo moss	1	n/a	n/a
Great crested newt	3	n/a	n/a
Grizzled Skipper	2	1	Appropriate habitat enhancement
Water Vole	5	n/a	n/a
White-clawed crayfish	0	1	Creation of 1 ark site
White- letter Hairstreak	20	2	Appropriate habitat enhancement

Table 1.2 Targets for UK BAP Species within the Magnesian Limestone Action Area.

Dingy skippers are relatively common in this area and have been recorded in ten grid squares (10 x 1 km^2) since 2000. These records are almost exclusively confined to short and developing grassland on former reclamation sites. Work has been carried out by Butterfly Conservation to enhance these sites to create optimal conditions for these butterflies. **Target:** Increase range by one 1 km^2 by appropriate habitat enhancement.

Flamingo moss has been recorded in just one grid square (1 x 1 km^2). This population, at Steetley Quarry, is potentially under threat from development. **Target:** Maintain range by appropriate habitat protection.

Great-crested newts have been recorded in three grid squares (3 x 1 km^2) since 1990. One, at Steetley Quarry, is potentially under threat from development. **Target:** Maintain range by appropriate habitat protection.

Grizzled skippers have been recorded in two grid squares (2 x 1 km^2) since 2000. Both of these have wide expanses of relatively open calcareous grassland and are subject to site alterations over the plan period. **Target:** Maintain range by appropriate habitat protection.

Water voles have been recorded in five grid squares (5 x 1 km^2) since 2000. They are severely restricted in this area as suitable waterbodies are limited because of the porous nature of the bedrock. Water voles have been recorded at Steetley Quarry and at Pebley Pond, as well as along the stream that flows into Creswell Crags **Target:** Maintain range by appropriate habitat protection.

White-clawed crayfish have not yet been recorded in the Magnesian Limestone area. This offers an opportunity to identify a suitable site for the development of an ark site which is remote and safe from disease contamination by existing crayfish populations. **Target:** Create one ark site.

White-letter hairstreak butterflies have been recorded in 20 grid squares (20 x 1 km^2) across the area since 2000, including at Scarcliffe Park, Whitwell Wood and Pleasley Pit. Like other areas in the country, it appears these populations may be in decline, although some work has taken place to plant suitable disease-free species of elms. **Target:** Increase range by two 1 km^2

White-letter Hairstreak
Credit: Alan Barns

1.6 Current Biodiversity Resources

This list of resources within the Magnesian Limestone area has been divided into three parts:

1.6.1. UK BAP Priority Habitat Resources
1.6.2 UK BAP Priority Species Resources
1.6.3 Organisational and Human Resources

1.6.1 UK BAP Priority Habitat Resources

The figures below show the total amount of each Priority Habitat known to exist in the Magnesian Limestone at the start of this Plan Period in 2011, with figures for sub-priority and newly created habitats where known. Brief notes on their distribution within the area then follow.

Total area of the Magnesian Limestone region =	**8,713 ha**
Total area of Priority biodiversity resource at start of Plan Period =	**1,286 ha**
Percentage of Action Area containing this biodiversity resource =	**15%**

Lowland Mixed Deciduous Woodland:

Ancient Semi-Natural Woodland =	104 ha
Plantation on Ancient Woodland Sites =	468 ha
Secondary =	151 ha
Plantation =	174 ha

Wet Woodland:	6 ha
Wood pasture and parkland: (2 sites)	316 ha
Traditional orchard: (17 sites)	4 ha
Lowland Calcareous Grassland: (Plus 26 ha of newly created and 36 ha sub-priority)	31 ha
Lowland Meadow: (Plus 2.1 ha of newly created and 60 ha of sub-priority)	4 ha
Rush- pasture:	14 ha

Wetland:

Ponds: > 90 ponds	
Lakes: 3	10 ha
Fen:	3 ha
Mire:	0.1 ha
Reedbed:	1 ha

Location of Priority Habitats in the Landscape:

Primary features:

Lowland mixed deciduous woodland: especially ancient woodland is mostly found in large sites such as Scarcliffe Park and Whitwell Wood

Hedgerows and field margins: widespread across the area

Lowland calcareous grassland: fragmented, with concentrations at Pleasley and Creswell

Secondary features:

Wood-pasture and parkland: associated with historic properties at Hardwick Hall and Barlborough Hall

Veteran trees: widespread, outside parklands mostly associated with hedgerows and former hedgerows

Neutral grassland: scattered and associated with deeper soils than calcareous grassland

Localised features:

Wet woodland and *floodplain grazing marsh:* associated with the limestone gorges

Standing open water, ponds: widespread across the area

Swamp and tall herb fen and mire: very localised in limestone gorges and subsidence flashes

Open mosaic habitats: occurs in areas of brownfield land. Known within Steetley Quarry

Note: The terms Primary, Secondary or Localised feature used above are synonymous with 'Primary Habitat' etc. used in the Landscape Character of Derbyshire (2003) see www.derbyshire.gov.uk/landscape. These describe how noticeable and distinctive each habitat is within the landscape itself. Only Primary Features are shown in the detailed map of each Action Area in the Maps section.

Creswell Crags and Pond.
Credit: Debbie Alston

1.6.2 UK BAP Priority Species Resources

Group	English Name
Moss	Flamingo moss
Vascular Plant	See footnote
Amphibian	Great crested newt
Amphibian	Common toad
Reptile	Common lizard
Reptile	Grass snake
Reptile	Slow worm
Bird	Bullfinch
Bird	Corn bunting
Bird	Cuckoo
Bird	Curlew
Bird	Dunnock
Bird	Grasshopper warbler
Bird	Grey partridge
Bird	Herring Gull (not breeding)
Bird	House sparrow
Bird	Lapwing
Bird	Lesser Redpoll
Bird	Lesser spotted woodpecker
Bird	Linnet
Bird	Marsh tit
Bird	Reed bunting
Bird	Skylark
Bird	Song thrush
Bird	Spotted flycatcher
Bird	Starling
Bird	Tree pipit
Bird	Tree sparrow
Bird	Turtle dove
Bird	Twite (not breeding
Bird	Willow tit
Bird	Yellowhammer
Bird	Yellow wagtail
Mammal	Brown hare
Mammal	Brown long-eared bat
Mammal	Harvest mouse
Mammal	Hedgehog
Mammal	Noctule
Mammal	Soprano pipistrelle

Group	English Name
Mammal	Water vole
Butterfly	Dingy skipper
Butterfly	Grizzled skipper
Butterfly	Small heath
Butterfly	Wall
Butterfly	White letter hairstreak
Moth	Beaded chestnut
Moth	Blood-vein
Moth	Brindled beauty
Moth	Broom moth
Moth	Brown-spot pinion
Moth	Buff ermine
Moth	Centre-barred sallow
Moth	Deep-brown dart
Moth	Dot moth
Moth	Dusky brocade
Moth	Garden tiger
Moth	Ghost moth
Moth	Grass rivulet
Moth	Green-brindled crescent
Moth	Grey dagger
Moth	Knot grass
Moth	Latticed heath
Moth	Mouse moth
Moth	Oak hook-tip
Moth	Powdered quaker
Moth	Rosy minor
Moth	Rosy rustic
Moth	Shaded broad-bar
Moth	Shoulder-striped wainscot
Moth	Small phoenix
Moth	Small square-spot
Moth	The cinnabar
Moth	The rustic
Moth	The sallow
Moth	The spinach
Moth	The streak
Moth	White ermine

Table 1.3 UK BAP Priority Species known to be present in the Magnesian Limestone area since 2000 (76 species)

Note: Burnt tip orchid was recorded from within this Action Area in 1994.

1.6.3 Organisational and Human Resources

Below is a list of organisations that are key to delivering the actions and targets in the Magnesian Limestone area. Reference should also be made to the table in the Generic Action Plan.

Statutory Agencies
Environment Agency *
Forestry Commission *
Natural England *

Voluntary organisations
Bolsover Countryside Partnership*
BTCV *
Creswell Heritage Trust
Derbyshire Wildlife Trust *
FWAG *
RSPB *
Groundwork Creswell, Ashfield and Mansfield *

Local and Community Groups
Clowne Wildlife Group
Elmton and Creswell Wildlife Group
Friends of Bolsover Parks *
Pleasley Pit Nature Study Group *
Whitwell Wood Natural History Group

Local Authorities (including Town and Parish Councils)
Derbyshire County Council *
Bolsover District Council *

Ault Hucknall Parish
Barlborough Parish *
Clowne Parish
Elmton with Creswell Parish
Glapwell Parish
Old Bolsover Town Council
Pleasley Parish
Shirebrook Town Council
Whitwell Parish

Other Landowning bodies
Chatsworth Estate
Land Restoration Trust
Lafarge
National Trust*
Private landowners and farmers
Sitwell Estate
Tarmac
Welbeck Estate
Homeowners (for UK BAP species in gardens)

* indicates Lowland Derbyshire Biodiversity Partnership member.
If your group or organisation would like to join the Partnership, go to
www.derbyshirebiodiversity.org.uk

Pond restoration
Credit: Bolsover Woodland Enterprise

1.7 Achievements to Date in Magnesian Limestone area

Figures are based on Nov 2011 data and rounded to nearest hectare

Woodland

720 ha (90% of the target) of lowland mixed deciduous woodland was considered to be under management (in an agri-environmental scheme or assessed as favourable or recovering condition)

Lowland Calcareous Grassland

18 ha (72% of the target) of priority lowland calcareous grassland was considered to be under management (in an agri-environmental scheme or assessed as favourable or recovering condition)

28 ha (80% of the target) of sub-priority lowland calcareous grassland was considered to be under restoration (in an agri-environmental scheme or assessed as 'favourable' or 'recovering' condition), looking to bring the habitat condition up to priority status.

Wood pasture and parkland

2 wood-pasture and parkland sites (100% of the area resource) were considered to be under management (in an agri-environmental scheme or assessed as favourable or recovering condition)

Lowland Meadow

3.83 ha (95% of the target) of priority lowland meadow was considered to be under management (in an agri-environmental scheme or assessed as favourable or recovering condition)

45ha (90% of the target) of sub-priority lowland meadow was considered to be under restoration (in an agri-environmental scheme or assessed as 'favourable' or 'recovering' condition), looking to bring the habitat condition up to priority status.

Ponds

12 ponds (30% of the target) are currently under management

Current Agri-environment Schemes:

5 Higher Level Stewardship schemes in the area
2 Countryside Stewardship schemes in the area

2

Rother and Doe Lea Valleys Area Action Plan

Lowland Derbyshire LBAP

Wetland habitat creation at Carr Vale. Credit: Derbyshire Wildlife Trust

Prepared by the Lowland Derbyshire Biodiversity Partnership

This document is part of the Lowland Biodiversity Action Plan 2011-2020

Rother and Doe Lea Valleys Area

Contents

Map of Rother and Doe Lea Valleys Action Area

2.1 Area Description

2.2 Vision

2.3 The Challenges and Opportunities

- 2.3.1 Existing initiatives and projects
- 2.3.2 Main landowning bodies
- 2.3.3 Key Sites

2.4 **Key Actions** for Rother and Doe Lea Valleys Area

2.5 **Key Targets** for Rother and Doe Lea Valleys Area

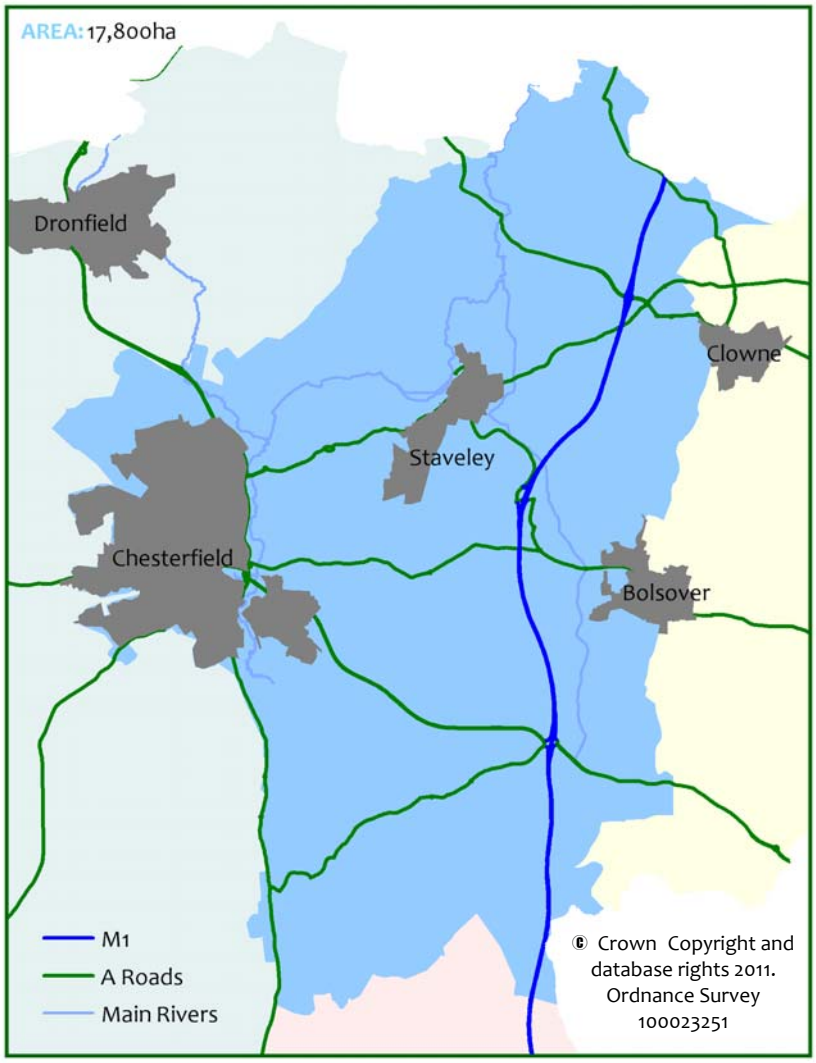
- 2.5.1 Targets for UK BAP Priority Habitats (with Target Table 2.1)
- 2.5.2 Targets for UK BAP Priority Species (with Target Table 2.2)

2.6 Appendix 1: Current Biodiversity Resources

- 2.6.1 UK BAP Habitat Resources
- 2.6.2 UK BAP Species Resources (with Species List Table 2.3)
- 2.6.3 Organisational and Manpower Resources

2.7 Appendix 2: Achievements to Date

2. Rother and Doe Lea Valleys Area
- ACTION PLAN –



Map of Rother and Doe Lea valleys Action Area

For further detail see Maps section

2.1 Area Description:

The Rother and Doe Lea Valleys and catchments form the northern part of the broader Derbyshire coalfield having a diversity of habitat types associated with the underlying geology and human influences. The area is predominantly characterised by mixed farming with remnant habitats associated with river valleys, meadows, heath and woodlands. To the north in areas around Renishaw small broadleaf woodlands can be found, including remnants of ancient woodland. The presence of other trees is variable with occasional scattered mature hedgerow trees. River valleys support important wetland habitats including reedbeds, fen and marsh.

The area includes three Sites of Special Scientific Interest, two of which are notified for their geological interest, three Local Nature Reserves, five RIGS, 118 LWS and more than 20 potential Local Wildlife Sites.

The Rother and Doe Lea Valleys area comprises five Derbyshire Landscape Character Types:

- Wooded Farmlands
- Riverside Meadows
- Estate Farmlands
- Limestone Farmlands
- Riverside Meadows

Use the Derbyshire County Council online mapping system to view Landscape Character Types within this Lowland Derbyshire LBAP area. www.derbyshire.gov.uk/maps

This Action Area includes the settlements of Killamarsh, Eckington, Barlborough, Staveley, Chesterfield, North Wingfield, Holmewood, Clay Cross, Pilsley and part of Bolsover.

2.2 Vision

Connected wetland habitats along the river and canal corridors and managed woodlands and semi-natural grassland habitats connected by hedgerows.

2.3 The Challenges and Opportunities

This area has a legacy associated with the coal mining industry, and restoration schemes have resulted in a number of large country parks and nature reserves. Restoration and large scale development is still continuing and, through the ten-year period of this plan, habitat creation schemes are likely to occur at Grassmoor, the former Avenue coking works, former Staveley works, Markham Vale and the former Biwaters site near Clay Cross. The development at Chesterfield Waterside presents a significant opportunity for sustainable projects, including the provision of green roofs.

The area's history has resulted in a landscape which has one of the lowest amounts of priority grassland and ancient woodland in the LBAP area. Much of the priority habitat is fragmented, with the remaining largely associated with the river corridors. The area does include a significant amount of recently planted woodland and seeded grassland which is now beginning to mature and add to the landscape.

Farmland is present on the fringes of the area, predominately on formerly restored fields. Hedgerow networks in these areas are poor, where present they are mostly gappy, over-managed, largely single-species and are lacking hedgerow trees. Coverage by Entry Level Schemes in the area is reasonable, but there are some

significant gaps where take-up of the scheme is poor. Uptake of England Woodland Grant Schemes is good, with many of the large landowning bodies having their own estate-wide scheme.

Much of the area is urban, including some areas of social deprivation, associated with the mining legacy. There are a number of local community groups which are carrying out work for biodiversity, but there is still considerable scope to increase voluntary involvement across the area.

Of the 118 Local Wildlife Sites in the area, only 48 (40%) are in 'favourable' or 'recovering' condition. There are a variety of reasons why sites are considered 'unfavourable', including neglect and lack of appropriate management. See section 2.3.3 for a list of key sites in the Rother and Doe Lea Valleys.

2.3.1 Existing initiatives and projects

The eastern side of the area is included within the **Doe Lea Catchment Project**, a three year scheme, started in 2009, to alleviate flooding in the catchment, retain soil resource on the land and carry out small scale habitat creation work.

This area lies within one of **Derbyshire Wildlife Trusts Living Landscapes Schemes**. These are landscapes where the Trust has identified areas for key habitats and species action. It will develop projects and use opportunities to strengthen and, where possible, expand the biodiversity resource.

The Bolsover, Chesterfield and North East Derbyshire **Greenprint** documents cover parts of this area. Greenprints are mini biodiversity action plans setting actions and targets for each local authority area.

2.3.2 Main landowning bodies

Landownership within the area is dominated by a handful of owners, mainly Chatsworth and Sitwell estates, where much of the land is tenanted. Derbyshire County Council and Chesterfield Borough Council also manage large areas of land including that associated with the Markham Vale development. The former Arkwright colliery is owned by UK Coal and is being managed according to an agreed restoration plan.

2.3.3 Key Sites

The key sites in the Rother and Doe Lea Valleys Action Area are:

- **SSSIs:** Crabtree Wood SSSI, Duckmanton SSSI.
- **LNRs:** Brearley Wetland LNR, Doe Lea LNR, Norbriggs Flash LNR.
- **Others:** Arkwright , Avenue Washlands, Carr Vale Flash, Chesterfield Canal, Grassmoor Country Park, Holmebrook Country Park, Peter Fidler, Poolsbrook Country Park, West Wood.

2.4 KEY ACTIONS for the Rother and Doe Lea Valleys area.

1. The **primary habitat objective** within the Rother and Doe Lea Valleys area is the maintenance, restoration and expansion of lowland meadow, woodland and wetlands to achieve targets in Table 2.1 below

2. The **secondary objective** in the area is to increase connectivity of semi-natural habitats to create larger habitat complexes using priority habitats wherever possible.

3. Investigate and develop two ark sites for white-clawed crayfish.

4. Continue to monitor water vole populations at key sites along the Rother and Doe Lea. Carry out mink control where necessary to protect water vole populations.

5. Work with landowners to reduce the cause, risk and effects of flooding along the Doe Lea, creating priority habitats where appropriate.

6. Promote volunteering for the environment, especially within areas of social deprivation, to increase capacity and to empower 'Friends of' groups to manage key sites.

Full targets for all Priority Habitats and Species are listed in Tables 2.1 and 2.2
All actions listed in the separate **Generic Action Plan** also apply to this area.

2.5 KEY TARGETS for the Rother and Doe Lea Valleys area.

2.5.1 Targets for UK BAP PRIORITY HABITATS

Table 2.1 below lists the specific habitat targets for the Rother and Doe Lea Valleys area. The requirements of UK BAP reporting mean that our own LBAP targets need to be presented as cumulative figures. The meaning of each column is explained below the table. See Maps section for the distribution of primary habitat features within this Action Area.

UK BAP Priority Habitat	(1) Current Extent at 2011 (i.e. Maintenance* Target to 2020)	Targets for 2011-2020		
		(2) Manage*	(3) Restore*	(4) Expand*
Primary feature:				
Lowland mixed deciduous woodland	1,109 ha	820 ha	-	100 ha
Lowland meadow	19 ha	19 ha	150 ha	15 ha
Lakes and Canals	6 lakes 1 canal	6 lakes 1 canal	n/a	Expand wetlands area within existing canal
Ponds	>200 ponds	60 ponds	25 ponds	25 ponds
Hedgerows	unknown	Additiona 15 km	n/a	5km
Wet woodland	11 ha	8 ha	n/a	3 ha
Floodplain Grazing marsh	unknown	n/a	n/a	10 ha
Secondary feature:				
Reedbed	19 ha	15 ha	n/a	5 ha
Field Margins	unknown	60 ha#		
Localised feature:				
Lowland calcareous grassland	5 ha	5 ha	57 ha	n/a

Traditional orchard	37 sites	n/a	n/a	5 sites
Heathland	0 ha	n/a	0.75 ha	1 ha
Wood-pasture and Parkland	7 sites	3 sites	n/a	n/a
Lowland dry acid grassland	3 ha	3 ha	20 ha	1 ha
Mire and Fen	3 ha	3 ha	n/a	n/a
Swamp	7 ha	7 ha	n/a	n/a
Open Mosaics	Unknown ∞			
Green roofs @				20 roofs

Table 2.1 Targets for the Rother and Doe Lea Valleys Action Area 2011-2020.

*Table explanation:
Terminology and measurements are the same as those used in the UK Biodiversity Action Plan (UK BAP). These are:

(1) ***'Maintenance'***–this is the current 2011 resource of each Priority Habitat, irrespective of condition and management that we must, *at the very least,* keep and carry forward into the next plan period after 2020. (i.e. no net loss.)

(2) ***'Manage'*** – The amount of Priority Habitat in (1) that we want to be under appropriate management to maintain in 'favourable' condition. This is a cumulative target, continuing on from the previous plan period.

(3) ***'Restore'*** – Habitat which is not in a 'favourable' condition, but which is under restorative management to bring it up to that condition. This is a cumulative target, continuing on from the previous plan period.

(4) ***'Expand'*** – New habitat created from scratch. This could be on a new site or an extension to an existing one. The target is for this Plan Period, though some habitats, such as woodland, take far longer to fully develop.

Notes to accompany Table 2.1

Wetland habitat creation should be targeted along river corridors, especially where they link existing wetland sites.

Grassland, **woodland** and **hedgerow** creation should also be targeted where the underlying ground conditions are suitable and especially where it links existing habitats.

Pond creation is suitable anywhere in the area, but is especially important where new ponds will add to existing networks, and can support great crested newt populations. Restoration should be targeted on sub-priority habitat, especially where it links to priority habitats.

[#] **Field Margins** It is not possible to set separate targets for management, restoration or expansion. A single overall target for simply increasing this resource is provided. Figures can only be based on Entry Level Stewardship monitoring. Further habitat may also be provided through Living Bird Table initiatives.

[∞] ***Open mosaic habitats*** the distribution of this habitat is not well understood at the start of this Plan Period (see Generic Action Plan). Its presence is, however, important in this area. It should be maintained in situ wherever possible, especially where it contributes to a wider network linking key habitats

[@]**Green roofs** Although not a UK Priority Habitat, the installation of green roofs on new developments and also on some existing urban structures can make a considerable contribution to biodiversity in towns and cities. For this reason they have been included in targets within the Rother and Doe Lea Valley area.

Hedgerow.
Credit: Debbie Alston

2.5.2 Targets for UK BAP PRIORITY SPECIES

There are 83 UK BAP Priority Species recorded within the Rother and Doe Lea Valleys Action Area since 2000. The distribution and status of many of these species is not currently well known, and consequently it is not possible to set meaningful targets for them. However, there are other species about which we do know enough to be able to set targets, monitor and assess their success. These are shown below in Table 2.2

The full list of BAP Species for the Rother and Doe Lea Valleys area is given in Table 2.3 (see Section 2.6.2)

UK BAP Priority Species	Range targets to 2020 ($1km^2$)	Range expansion targets 2011-2020 ($1km^2$)	Method of expansion
Dingy skipper	19	n/a	n/a
Great-crested newt	24	1	Expansion of existing pond network
Otter	n/a	2	Surveying and habitat enhancements.
Water vole	47	2	Canal restoration and creation of suitable wetland habitat
White-clawed crayfish	3	2	Creation of 2 ark sites

Table 2.2 Targets for UK BAP Species within the Rother and Doe Lea Valleys area.

This area is one of the local strongholds for **Dingy skippers**, which have been recorded in 19 grid squares (19 x 1 km^2) grid squares since 2000. They are present on many former extraction sites where relatively open habitats still exist. **Target:** Maintain range.

Great-crested newts have been recorded in 24 grid squares (24 x 1 km^2) since 1990. They are largely restricted to individual sites as, rather than the wider landscape and some of the records are old and populations may have disappeared.
Target: Increase range by one 1 km^2 by expanding pond networks.

The presence of **Otters** in the area is yet to be confirmed, but is expected in the near future as they have been recorded in the centre of Sheffield in the Don catchment to the north of the area. **Target:** Increase range by two 1 km^2

Water voles have been recorded in 47 grid squares since 2000. The Rother valley contains the strongest remaining population of water voles in the LBAP area. The tributaries of the Rother including the Doe Lea, the Pools Brook, Barlow Brook and Stockley Brook, are particularly important as is the Chesterfield Canal. **Target:** Increase range by two 1 km^2 by canal restoration and wetland habitat creation.

White-clawed crayfish have been recorded in three grid squares (3 x 1 km^2) since 2000. Until recently white-clawed crayfish have been recorded on the Hipper, the River Whitting and the lower part of the Barlow Brook. However, recent survey work has only confirmed their presence on the upper part of the Barlow Brook, just upstream of the section within this area. An ark site was set up at Holmebrook Country Park in 2008 and another healthy population exists on an isolated lake in Wingerworth. **Target:** Increase range by two 1 km^2 by pursuing opportunities for ark site creation.

White-clawed crayfish.
Credit: Environment Agency

2.6 Current Biodiversity Resources

This list of resources within the Rother and Doe Lea Valleys area has been divided into three parts:

2.6.1. UK BAP Priority Habitat Resources
2.6.2 UK BAP Priority Species Resources
2.6.3 Organisational and Manpower Resources

2.6.1 UK BAP Priority Habitat Resources

The figures below show the total amount of each Priority Habitat known to exist in the Rother and Doe lea valleys area at the start of this Plan Period in 2011.
Figures for sub-priority and newly created habitats are given if known.
Brief notes on their distribution within the area then follow.

Total area of the Rother and Doe Lea Valleys region = **17,824 ha**
Total area of priority biodiversity resource at start of Plan Period= **1,215 ha**
Percentage of Action Area containing this biodiversity resource = **6.8 %**

Mixed Deciduous Woodland:

Ancient Semi-Natural Woodland =	217 ha
Plantation on Ancient Woodland Sites =	68 ha
Secondary =	269 ha
Plantation (planted since 1980) =	548 ha

Wet Woodland: 11 ha

Traditional Orchard: (37 sites) 11 ha

Lowland Meadow: 19 ha
(Plus 186 ha of sub-priority and 20 ha newly created)

Lowland Calcareous Grassland: 5 ha
(Plus 57 ha of sub-priority and 11 ha newly created)

Lowland Acid Grassland: 3 ha
(Plus 21 ha of sub-priority and 4 ha newly created)

Heathland: 0.75 ha of sub-priority heathland

Wetland:

Lakes 6 sites	30 ha
Ponds 136 sites	
Reedbed	18 ha
Canal	7 ha
Swamp (incl. 1.1 ha newly planted)	6 ha
Fen	3 ha

Location of Priority Habitats in the Landscape:

Primary features:

Rivers and streams: River Rother is the main river with a number of tributaries, including Hipper, Westbrook and Doe Lea.
Floodplain grazing marsh: Associated largely with River Rother.
Standing open water and ponds: Widespread across the area.
Lowland meadow: Scattered and generally associated with former mineral sites.
Hedgerows: Widespread, often fragmented, across the area.
Veteran trees: Sporadically across the area.
Lowland mixed deciduous woodland: Widespread across the area, newer plantations associated with former mineral sites.
Wet woodland: associated with the River Rother corridor.

Secondary features:

Reedbed: Associated with the River Rother and Doe Lea, especially in areas of mining subsidence.
Field margins: Widespread across the area.
Open Mosaic Occurs in area of brownfield land, especially in and around the urban areas of Chesterfield and the former coal extraction sites such as at Grassmoor, Markham Vale and the former Avenue Coking site.

Localised features:

Lowland calcareous grassland: confined to the scarp slope below the limestone plateau.

Note: The terms Primary, Secondary or Localised feature used above are synonymous with 'Primary Habitat' etc. used in the Landscape Character of Derbyshire (2003) see www.derbyshire.gov.uk/landscape. These describe how noticeable and distinctive each habitat is within the landscape itself. Only Primary Features are shown in the detailed map of each Action Area in the Maps section.

New pond at Netherthorpe.
Credit: Debbie Alston

2.6.2 UK BAP Priority Species Resources

Group	English Name
Amphibian	Great crested newt
Amphibian	Common toad
Reptile	Common lizard
Reptile	Grass snake
Reptile	Slow worm
Fish	Eel
Bird	Bullfinch
Bird	Corn bunting
Bird	Cuckoo
Bird	Curlew
Bird	Dunnock
Bird	Grasshopper warbler
Bird	Grey partridge
Bird	Hawfinch
Bird	Herring gull
Bird	House sparrow
Bird	Lapwing
Bird	Lesser gedpoll
Bird	Lesser spotted woodpecker
Bird	Linnet
Bird	Marsh tit
Bird	Reed bunting
Bird	Skylark
Bird	Song thrush
Bird	Starling
Bird	Spotted flycatcher
Bird	Tree pipit
Bird	Tree sparrow
Bird	Turtle dove
Bird	Willow tit
Bird	Wood warbler
Bird	Yellowhammer
Bird	Yellow wagtail
Mammal	Brown hare
Mammal	Brown long-eared bat
Mammal	Harvest mouse
Mammal	Hedgehog
Mammal	Noctule
Mammal	Polecat (unconfirmed)
Mammal	Soprano pipistrelle
Mammal	Water vole
Butterfly	Dingy skipper

Group	English Name
Butterfly	Small heath
Butterfly	Wall
Butterfly	White letter hairstreak
Crustacean	White-clawed crayfish
Moth	August thorn
Moth	Autumnal rustic
Moth	Beaded chestnut
Moth	Blood-vein
Moth	Brindled beauty
Moth	Broom moth
Moth	Brown-spot pinion
Moth	Buff ermine
Moth	Centre-barred sallow
Moth	Dot moth
Moth	Dusky brocade
Moth	Dusky thorn
Moth	Dusky-lemon sallow
Moth	Feathered gothic
Moth	Figure of eight
Moth	Flounced chestnut
Moth	Garden dart
Moth	Garden tiger
Moth	Ghost moth
Moth	Green-brindled crescent
Moth	Heath rustic
Moth	Knot grass
Moth	Latticed heath
Moth	Minor shoulder-knot
Moth	Mottled rustic
Moth	Mouse moth
Moth	Oak hook-tip
Moth	Powdered quaker
Moth	Rosy minor
Moth	Rosy rustic
Moth	Shaded broad-bar
Moth	Shoulder-striped wainscot
Moth	Small phoenix
Moth	Small square-spot
Moth	The cinnabar
Moth	The sallow
Moth	White ermine

Table 2.3 UK BAP Priority Species known to be present within the Rother and Doe Lea Valleys area (83 species)

2.6.3 Organisational and Human Resources

Below is a list of organisations that are key to delivering the actions and targets in the Magnesian Limestone area. Reference should also be made to the table in the Generic Action Plan.

Statutory Agencies
Environment Agency *
Forestry Commission *
Natural England *

Voluntary organisations
Bolsover Countryside Partnership*
BTCV *
Chesterfield Canal Partnership
Derbyshire Wildlife Trust *
FWAG*
Groundwork Creswell, Ashfield and Mansfield*

Local and Community Groups
Chesterfield RSPB *
Dronfield and District Natural History Society *
Friends of Holmewood Country Park*
Friends of Poolsbrook Country Park*

Other Landowning bodies
Chatsworth Estate
East Midlands Development Agency (Avenue site)
National Trust*
Private landowners and farmers
Sitwell Estate
UK Coal
Homeowners (for UK BAP species in gardens)

Local Authorities (including Town and Parish Councils)
Derbyshire County Council *
Bolsover District Council *
Chesterfield Borough Council *
North East Derbyshire District Council *

Ault Hucknall Parish Council
Barlborough Parish Council *
Barlow Parish Council
Brampton Parish Council
Brimington Parish Council
Calow Parish Council
Clay Cross Parish Council
Clowne Parish Council
Eckington Parish Council
Glapwell Parish Council
Grassmoor, Hasland and Winsick Parish Council
Holymoorside and Walton Parish Council
Killamarsh Parish Council *
Morton Parish Council
North Wingfield Parish Council *
Old Bolsover Town Council
Pilsley Parish Council
Staveley Town Council *
Stretton Parish Council
Sutton cum Duckmanton Parish Council
Temple Normanton and Corbriggs Parish Council
Tibshelf Parish Council
Tupton Parish Council
Unstone Parish
Whitwell Parish
Wingerworth Parish

* indicates Lowland Derbyshire Biodiversity Partnership member.
If your group or organisation would like to join the Partnership, go to www.derbyshirebiodiversity.org.uk

2.7 Achievements to Date in Rother and Doe Lea Valleys area

Figures are based on Nov 2011 data and rounded to nearest hectare

Woodland

615 ha (75% of the target) of lowland Mixed Deciduous Woodland is considered to be under management (in an agri-environmental scheme or assessed as favourable or recovering condition)

Wet Woodland

4 ha (50 % of the target) of priority Wet Woodland was considered to be under management (in an agri-environmental scheme or assessed as favourable or recovering condition)

Lowland Meadow

16 ha (84 % of the target) of priority Lowland Meadow was considered to be under management (in an agri-environmental scheme or assessed as favourable or recovering condition)

125 ha (83% of the target) of sub-priority Lowland Meadow was considered to be under restoration (in an agri-environmental scheme or assessed as 'favourable' or 'recovering' condition), looking to bring the habitat condition up to priority status.

Lowland Calcareous Grassland

2.5 ha (50% of the target) of priority lowland Calcareous Grassland was considered to be under management (in an agri-environmental scheme or assessed as favourable or recovering condition)

55 ha (96 % of the target) of sub-priority lowland Calcareous Grassland was considered to be under restoration (in an agri-environmental scheme or assessed as 'favourable' or 'recovering' condition), looking to bring the habitat condition up to priority status.

Lowland Dry Acid Grassland

3 ha (100 % of the target) of priority Dry Acid Grassland was considered to be under management (in an agri-environmental scheme or assessed as favourable or recovering condition)

11 ha (55 % of the target) of sub-priority Dry Acid Grassland was considered to be under restoration (in an agri-environmental scheme or assessed as 'favourable' or 'recovering' condition), looking to bring the habitat condition up to priority status.

Heathland

0.75 ha (100 % of the target) of sub-priority Heathland was considered to be under restoration (in an agri-environmental scheme or assessed as 'favourable' or 'recovering' condition), looking to bring the habitat condition up to priority status.

Wetland

58 ponds (97% of the target) are currently under management

1 ponds (4% of the target) are currently under restoration management.

4 lakes or canal sites (57% of the target) are currently under management

8 ha of reedbed (53% of the target) are currently under management or restoration

0.85 ha of swamp (12 % of the target) are currently under management is under management

3 ha of mire and fen (100% of the target) are currently under management

Current Agri-environment Schemes:
2 Higher Level Stewardship schemes
2 Countryside Stewardship Schemes

3

Peak Fringe Area Action Plan

Lowland Derbyshire LBAP

Wooded Slopes and Valleys near Ashover. Credit: Derbyshire County Council

Prepared by the Lowland Derbyshire Biodiversity Partnership

This document is part of the Lowland Biodiversity Action Plan 2011-2020

Peak Fringe Area

Contents

Map of Peak Fringe Action Area

3.1 Area Description

3.2 Vision

3.3 The Challenges and Opportunities

- 3.3.1 Existing initiatives and projects
- 3.3.2 Main landowning bodies
- 3.3.3 Key Sites

3.4 **Key Actions** for Peak Fringe Area

3.5 **Key Targets** for Peak Fringe Area

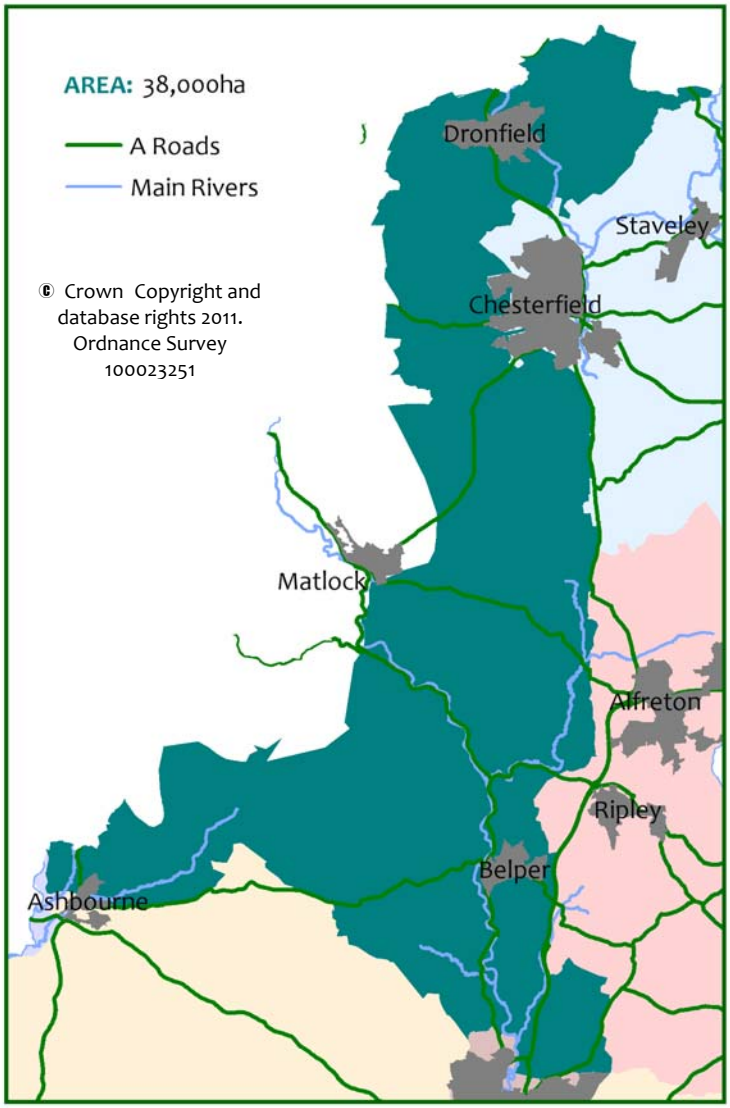
- 3.5.1 Targets for UK BAP Priority Habitats (with Target Table 3.1)
- 3.5.2 Targets for UK BAP Priority Species (with Target Table 3.2)

3.6 Appendix 1: Current Biodiversity Resources

- 3.6.1 UK BAP Habitat Resources
- 3.6.2 UK BAP Species Resources (with Species List Table 3.3)
- 3.6.3 Organisational and Manpower Resources

3.7 Appendix 2: Achievements to Date

3. Peak Fringe Area
- ACTION PLAN -



Map of Peak Fringe Action Area

For further detail see Maps section

3.1 Area Description:

An undulating well-wooded, pastoral landscape associated with the rising ground and foothills to the Peak District. Small irregular fields, many of which are species-rich, are enclosed by mixed species hedgerows with mature trees, contrasting with geometric and regular fields of the moorland fringe enclosed by dry stone walls. Towards the east of the area and on lower valley slopes there are areas of mixed farming that provide localised arable habitats. Extensive ancient woodland is a widespread and prominent feature of the landscape. The river valleys associated with the Derwent, Ecclesbourne and Amber provide valuable wetland habitats. By contrast the edge of the moorland area near Ashover provides patches of remnant moorland and acid grassland.

The Peak Fringe area comprises nine Derbyshire Landscape Character Types:

- Wooded Hills & Valleys
- Wooded Slopes & Valleys
- Wooded Farmlands
- Enclosed Moors and Heaths
- Settled Valley Pastures
- Gritstone Heaths & Commons
- Riverside Meadows
- Sandstone Slopes & Heaths
- Settled Plateau Farmlands

Use the Derbyshire County Council online mapping system to view Landscape Character Types within this Lowland Derbyshire LBAP area. www.derbyshire.gov.uk/maps

This Action Area includes the settlements of Dronfield, Wingerworth, Ashover, Crich, Ambergate, Belper, Duffield and part of Ashbourne.

3.2 Vision

A pastoral undulating landscape dominated by wildlife-rich ancient woodland, interspersed with upland heath and small flower-filled fields bounded by dry stone walls and species-rich hedgerows.

3.3 The Challenges and Opportunities

There is a high proportion of BAP Priority Habitat within this area. They offer good opportunities to conserve and enhance biodiversity. There is also much unimproved and semi-improved grassland scattered throughout the area, which offers the potential for restoration of a more species-rich landscape. Lack of grazing stock has left some grassland undermanaged. Others are under pressure for pony paddocks, especially in the northern part of the Peak Fringe, including the Moss Valley. Over-grazing, poaching, use of fertilisers, agricultural intensification and management for silage are also issues in this area.

Much of the woodland is of ancient origin. But many are unmanaged, with invasive species such as rhododendron now encroaching. The remaining areas of heathland are just small fragments of a historic moorland landscape which has largely disappeared. Many of these heaths are undermanaged, and almost all are surrounded and isolated by more intensive farmland.

This Action Area includes 34 RIGS and 317 Local Wildlife Sites, which is a third of all such sites in the entire LBAP area. Of these, 108 Local Wildlife Sites are in 'favourable' or 'recovering' condition, but the presence of invasive species and unmanaged grassland are the main reasons for an 'unfavourable' condition assessment in the remainder sites. See section 3.3.3 for a list of key sites in the Peak Fringe.

Greenprint documents, as mini-biodiversity plans, have been produced for the North-East Derbyshire District and Chesterfield Borough.

3.3.1 Existing initiatives and projects

Derbyshire Wildlife Trust's **Living Landscape** approach in the Derwent Valley and the northern Peak Fringe and Linacre will focus more of their efforts in these areas. These are landscapes where the Trust has identified areas for key habitat and species action as part of their Strategic Development Plan. It will develop projects and use opportunities to strengthen and expand the biodiversity resource, as envisaged in the 2011 Natural Environment White Paper.

Under the **Local Wildlife Sites Partnership,** much work has been carried out surveying grasslands in this area, adding new sites to the Local Wildlife Sites system and assisting in Higher Level Stewardship take-up.

The **Derwent Valley World Heritage Site** falls within this area. Both the main site and its buffer zone form the basis of the **Derwent Valley Landscapes Partnership Project**. This HLF-funded project was developed in 2011, and aims to manage existing woodland, grassland and wetland habitats, restoring them where necessary and creating appropriate habitats to maintain the key wildlife corridor through the valley between Matlock and Derby.

Work has been undertaken across the Moss Valley area as a mini landscape-scale project. Here, The Moss Valley Wildlife Group has been working with partners on a number of projects, including the removal of Himalayan Balsam.

The Peak Fringe falls within the **East Midlands Woodland Priority Area**, with the Derwent Valley specifically highlighted as a known hotspot for woodland birds. Those considered to be important in the area include tree pipit, wood warbler, pied flycatcher, lesser woodpecker, marsh tit, willow tit, willow warbler, garden warbler and hawfinch. Nightjars have recently also been recorded in the area.

3.3.2 Main landowning bodies

The area contains a wide range of owners, including the wider estates of both Sitwell and Chatsworth. There are three large reservoir complexes in the area owned by Severn Trent Water. Shining Cliff Wood, the largest woodland site in the area, is managed by the Forestry Commission. Other known major landowners include Derbyshire Wildlife Trust, Sheffield City Council (Sheffield Wildlife Trust), the Woodland Trust and Amber Valley Borough Council. Much of the remaining land is privately owned.

3.3.3 Key Sites

The key sites in the Peak Fringe Action Area are:

- **SSSIs:** Cromford Canal SSSI, Moss Valley Meadows SSSI, Moss Valley SSSI, Moss Valley Woods SSSI, Ogston Reservoir SSSI, Shining Cliff Woods SSSI.
- **LNRs:** Belper Parks LNR, Duffield Millennium Meadows LNR, Wessington Green LNR.
- **Others:** Black Rocks, Bow Wood, Carsington Water, Crich Chase, Crich Quarry, Frith Wood, Holmebrook Country Park, Linacre Reservoirs, Wyver Lane.

Cromford Canal SSSI.
Credit: Debbie Alston

3.4 KEY ACTIONS for the Peak Fringe area.

1. The **primary habitat objective** within the Peak Fringe area is the maintenance, restoration and expansion of woodland, grassland, heathland and wetlands to achieve targets in Table 3.1.

2. The **secondary objective** is to increase the connectivity of semi-natural habitats to make larger complexes, ideally using priority habitats wherever possible. To achieve this will require the creation of completely new habitats to link and extend existing networks.

3. Target woodland owners in the area to apply for woodland management options that will benefit woodland birds.

4. Develop a grassland project to facilitate the uptake of agri-environment schemes, the development of a grazing animals scheme, plus the creation of new grasslands.

5. Develop a project to involve local people in the protection and management of priority habitats within the Derwent Valley area, looking specifically at grassland, ancient woodlands and floodplain meadows.

6. Develop a project to involve local people in the protection and management of priority habitats within the Moss Valley area, looking specifically at grasslands, woodlands and hedgerows.

7. Research and implement the creation of a white-clawed crayfish ark site.

8. Monitor dormouse populations and carry out habitat enhancement works to allow the population to expand.

Full targets for all Priority Habitats and Species are listed in Tables 3.1 and 3.2
All actions listed in the separate **Generic Action Plan** also apply to this area.

3.5 KEY TARGETS for the Peak Fringe area.

3.5.1 Targets for UK BAP PRIORITY HABITATS

Table 3.1 below lists the specific habitat targets for the Peak Fringe area. The requirements of UK BAP reporting mean that our own LBAP targets need to be presented as cumulative figures. The meaning of each column is explained below the table. See Maps section for the distribution of primary habitat features within this Action Area.

UK BAP Priority Habitat	(1) Current Extent at 2011 (i.e. Maintenance* Target to 2020)	Targets for 2011-2020		
		(2) Manage*	(3) Restore*	(4) Expand*
Primary feature:				
Lowland mixed deciduous woodland	2,845 ha	2,050 ha	n/a	50 ha
Lowland meadow	235 ha	210 ha	420 ha	30 ha
Hedgerows	unknown	20 km additional	n/a	7 km
Lowland dry acid grassland	164 ha	120 ha	250 ha	10 ha
Floodplain Grazing marsh	216 ha	30 ha	0 ha	0 ha
Secondary feature:				
Heathland	36 ha	30 ha	37 ha	5 ha
Wood-pastures and Parkland	27 sites	15 sites	0 sites	0 sites
Lakes and Canals	16 sites	15 sites	0 ha	0 ha
Ponds	>300 ponds	60 ponds	10 ponds	10 ponds

Localised feature:				
Lowland calcareous grassland	8 ha	6 ha	3 ha	5 ha
Calaminarian grassland	1 ha	1 ha	0 ha	0 ha
Traditional orchard	23 sites	5 sites	5 sites	1 sites
Reedbed	2 ha	1 ha	0 ha	1 ha
Lowland Swamp	7 ha	6 ha	n/a	0 ha
Lowland Fen & Mire	6 ha	5 ha	1 ha	1 ha
Rush Pasture	6 ha	6 ha	14 ha	0 ha
Field Margins	unknown	50 ha#		
Wet Woodland	31 ha	20 ha	0 ha	0 ha

Table 3.1 Targets for the Peak Fringe Action Area 2011-2020.

*Table explanation:
Terminology and measurements are the same as those used in the UK Biodiversity Action Plan (UK BAP). These are:

(1) ***'Maintenance'***–this is the current 2011 resource of each Priority Habitat, irrespective of condition and management that we must, *at the very least,* keep and carry forward into the next plan period after 2020. (i.e. no net loss.)
(2) ***'Manage'*** – The amount of Priority Habitat in (1) that we want to be under appropriate management to maintain in **'favourable'** condition. This is a cumulative target, continuing on from the previous plan period.
(3) ***'Restore'*** – Habitat which is not in a **'favourable'** condition, but which is under restorative management to bring it up to that condition. This is a cumulative target, continuing on from the previous plan period.
(4) ***'Expand'*** – New habitat created from scratch. This could be on a new site or an extension to an existing one. The target is for this Plan Period, though some habitats, - such as woodland - take far longer to fully develop.

Notes to accompany Table 3.1

Ancient woodlands not already within a management scheme should be targeted, especially within the Derwent Valley and Moss valley areas. Wood creation should be targeted within existing wooded areas, especially where new sites will link existing ones in the Derwent, Linacre and Moss valley areas.

Lowland meadow, acid and calcareous grassland restoration and creation should be targeted where the underlying ground conditions are suitable and where sites would link with existing habitats.

Heathland management, restoration and creation are targeted within the Enclosed Moors and Heaths and the Enclosed Moorland landscape types.

Hedgerow restoration and creation work should be targeted along existing networks wherever they are fragmented.

Pond creation should be targeted in areas where it adds to existing pond clusters which already support great crested newts.

Field Margins It is not possible to set separate targets for management, restoration or expansion. A single overall target for simply increasing this resource is provided. Figures can only be based on Entry Level Stewardship monitoring. Further habitat may also be provided through Living Bird Table initiatives.

Hedgerow in fruit
Credit: Debbie Alston

3.5.2 Targets for UK BAP PRIORITY SPECIES

There are 95 UK BAP Priority Species recorded within the Peak Fringe Action Area since 2000. The distribution and status of many of these species is not currently well known, and consequently it is not possible to set meaningful targets for them. However, there are other species about which we do know enough to be able to set targets, monitor and assess their success. These are shown below in Table 3.2

The full list of BAP Species for the Peak Fringe area is given in Table 3.3 (see Section 3.6.2)

UK BAP Priority Species	Range targets to 2020 ($1km^2$)	Range expansion targets 2011-2020 ($1km^2$)	Method of expansion
Great-crested newt	12	1	Targeted pond creation
Otter	25	2	Appropriate Habitat enhancement
Water vole	79	1	Appropriate Habitat enhancement
Dormouse	2	1	Appropriate habitat enhancement
White-clawed crayfish	11	1	Creation of 1 ark site
Dingy skipper	5	1	Appropriate habitat enhancement

Table 3.2 Targets for UK BAP Species within the Peak Fringe Action Area.

Great-crested newts have been recorded in 12 grid squares (12 x 1 km^2) since 1990. Parts of this area are close to the White Peak area where great crested newts are abundant and associated with dew ponds. But ponds in the Peak Fringe area containing this species are scarce; most are either in gardens or schools. **Target:** Increase range by one 1 km^2 by targeted pond creation.

Otters have been recorded in 25 grid squares (25 x 1 km^2) since 1990. These are centred on the River Derwent, but have also been recorded on the Henmore Brook and River Ecclesbourne. **Target:** Increase range by two 1 km^2

Water Voles have been recorded in 79 grid squares (79 x 1 km^2) since 2000. Water vole populations have decreased in recent years along the River Derwent. They are still present in good numbers along the Cromford Canal and ponds associated with Carsington Water. Active mink control and habitat enhancement should enable populations to recover and recolonise areas where they used to be abundant. **Target:** Increase range by one 1 km^2

Dormice were recorded in the Derwent Valley in the beginning of the 20th century, but subsequent surveys have shown they died out here. A population was reintroduced in 2004 to one site in the Derwent Valley. Subsequent monitoring has shown they have now colonised adjacent sites within the valley. **Target:** Increase range by one 1 km^2

White-clawed crayfish have been recorded in 11 grid squares (11 x 1 km^2) since 2000. Populations are still continuing to decrease along streams and brooks, where non-native crayfish are able to colonise. Wingerworth Lido has a healthy population of white-clawed crayfish, whilst crayfish ark sites have been developed at Holmebrook Country Park and Carsington Water. **Target:** Increase range by one 1 km^2 by creation of a further ark site.

Dingy skippers have been recorded in five grid squares (5 x 1 km^2) since 2000. This species is not as numerous here as it is in other areas in the LBAP and is largely associated with the limestone outcrops. **Target:** Increase range by one 1 km^2

In addition, this area has been highlighted as being important for woodland birds including tree pipit, wood warbler, pied flycatcher, lesser woodpecker, marsh tit, willow tit, willow warbler, garden warbler and hawfinch. Nightjars have recently also been recorded in the area.

Water vole swimming at High Peak Junction
Credit: Debbie Alston

3.6 Current Biodiversity Resources

This list of resources within the Peak Fringe area has been divided into three parts:

3.6.1. UK BAP Priority Habitat Resources
3.6.2 UK BAP Priority Species Resources
3.6.3 Organisational and Manpower Resources

3.6.1 UK BAP Priority Habitat Resources

The figures below show the total amount of each Priority Habitat known to exist in the Peak Fringe area at the start of this Plan Period in 2011.
Figures for sub-priority and newly created habitats are given if known.
Brief notes on their distribution within the area then follow.

Total area of the Peak Fringe region = 37,988 ha
Total area of Priority biodiversity resource at start of Plan Period = 3,986 ha
Percentage of Peak Fringe containing Priority biodiversity resources = 10.5%

Woodland:

Ancient Semi-Natural Woodland =	1,381 ha
Plantation on Ancient Woodland Sites =	642 ha
Secondary =	695 ha
Plantation (incl 33 ha planted 2004-2010) =	127 ha

Wet Woodland: 31 ha

Wood pasture and parkland: (33 sites) 215 ha

Traditional orchard: (112 sites) 23 ha

Lowland Meadow: 235 ha
(Plus 17 ha newly created, 706 ha sub-priority)

Lowland Dry Acid Grassland: 164 ha
(Plus 731 ha sub-priority)

Lowland Calcareous Grassland: 8 ha
(Plus 4 ha of newly created and 4ha sub-priority)

Calaminarian Grassland: 1 ha

Rush- pasture: 7 ha
(Plus 16 ha of sub-priority)

Heathland: (Plus 61 ha of sub-priority)		42 ha
Wetland:		
Ponds	>300	
Lakes	15 sites	397 ha
Canal	1 site	
Reedbed		2 ha
Fen & Mire		6 ha
Swamp		10 ha

Location of Priority Habitats in the Landscape:

Primary features:

Woodland: There are extensive areas of semi-natural and replanted ancient woodland particularly in the Lower Derwent Valley, Moss Valley, Linacre Valley, Amber Valley around Ashover, and also around Wingerworth. There are some scattered wet woodlands.

Neutral and acid grassland: Scattered fields throughout the area with particular concentrations on the slopes of the Amber, Linacre, Ecclesbourne and Derwent Valleys.

Hedgerows: Widespread across the area, replaced by dry stone walls in gritstone areas.

Veteran Trees: Widespread across the area in woods, parklands, hedgerows and fields.

Floodplain Grazing Marsh: Large areas of floodplain in the Lower Derwent Valley, particularly south of Duffield.

Rivers and Streams: The main rivers of the Derwent, Amber and Ecclesbourne are important with extensive riparian habitats adjacent to the Derwent in particular.

Secondary features:

Heathland: Fragmented heathland blocks are under restoration around Cromford Moor, Ashover and Holymoorside.

Wood-Pasture and Parkland: Approximately 30 sites scattered across the area with notable examples at Champion Park, Alderwasley Park, Crich Chase and Breadsall Priory.

Lakes and Canals: Widespread throughout the area with key wader and wildfowl sites at Carsington and Ogston Reservoirs. The only section of canal is the Cromford Canal.

Localised features:

Calcareous grassland and caiaminarian grassland: Very localised examples around Ashover, Crich and Cromford.

Fen and Swamp: at the edges of large wetland systems.

Traditional orchards: Very small examples associated with farms throughout the area.

Note: The terms Primary, Secondary or Localised feature used above are synonymous with 'Primary Habitat' etc. used in the Landscape Character of Derbyshire (2003) see www.derbyshire.gov.uk/landscape. These describe how noticeable and distinctive each habitat is within the landscape itself. Only Primary Features are shown in the detailed map of each Action Area in the Maps section.

3.6.2 UK BAP Priority Species Resources

Group	English Name
Moss	Sausage-beard moss
Amphibian	Great crested newt
Amphibian	Common toad
Reptile	Adder
Reptile	Common lizard
Reptile	Grass snake
Reptile	Slow worm
Fish	Atlantic salmon
Fish	Brown trout
Fish	Eel
Bird	Bullfinch
Bird	Corn bunting
Bird	Cuckoo
Bird	Curlew
Bird	Dunnock
Bird	Grasshopper warbler
Bird	Grey partridge
Bird	Hawfinch
Bird	Herring gull
Bird	House sparrow
Bird	Lapwing
Bird	Lesser redpoll
Bird	Lesser spotted woodpecker
Bird	Linnet
Bird	Marsh tit
Bird	Reed bunting
Bird	Skylark
Bird	Song thrush
Bird	Spotted flycatcher
Bird	Starling
Bird	Tree pipit
Bird	Tree sparrow
Bird	Twite (non breeding)
Bird	Turtle dove
Bird	Willow tit
Bird	Wood warbler
Bird	Yellowhammer
Bird	Yellow wagtail
Mammal	Brown hare
Mammal	Brown long-eared bat
Mammal	Dormouse
Mammal	Harvest mouse
Mammal	Hedgehog
Mammal	Noctule
Mammal	Otter
Mammal	Pine martin (unconfirmed)
Mammal	Polecat
Mammal	Soprano pipistrelle

Group	English Name
Mammal	Water vole
Ant	Shining guest ant
Beetle	Necklace Ground Beetle
Butterfly	Dingy skipper
Butterfly	Small heath
Butterfly	Wall
Butterfly	White letter hairstreak
Crustacean	White-clawed crayfish
Moth	Argent and sable
Moth	Beaded chestnut
Moth	Blood-vein
Moth	Brindled beauty
Moth	Broom moth
Moth	Brown-spot pinion
Moth	Buff ermine
Moth	Centre-barred sallow
Moth	Dot moth
Moth	Double dart
Moth	Dusky brocade
Moth	Dusky thorn
Moth	Ear moth
Moth	Feathered gothic
Moth	Figure of eight
Moth	Flounced chestnut
Moth	Forester
Moth	Garden tiger
Moth	Ghost moth
Moth	Grass rivulet
Moth	Green-brindled crescent
Moth	Grey dagger
Moth	Knot grass
Moth	Latticed heath
Moth	Mottled rustic
Moth	Mouse moth
Moth	Powdered quaker
Moth	Rosy minor
Moth	Rosy rustic
Moth	September thorn
Moth	Shaded broad-bar
Moth	Shoulder-striped wainscot
Moth	Small phoenix
Moth	Small square-spot
Moth	The cinnabar
Moth	The rustic
Moth	The sallow
Moth	The spinach
Moth	White ermine

Table 3.3 UK BAP Priority Species known or believed to be present within the Peak Fringe area (95 species)

3.6.3 Organisational and Manpower Resources

Below is a list of organisations that are key to delivering the actions and targets in the Peak Fringe area. Reference should also be made to the action table in the Generic Action Plan.

Statutory Agencies

Environment Agency*
Forestry Commission *
Natural England *

Voluntary Organisations

BTCV *
Derbyshire Wildlife Trust *
FWAG *
Groundwork Creswell, Ashfield and Mansfield *
Groundwork Derby and Derbyshire *
RSPB *

Local and Community Groups

Antony Gel School Foundation *
Carsington Bird Club
Dronfield and District Natural History Group *
Duffield Millennium Meadow Conservation Trust
Friends of Belper Parks *
Friends of Holmebrook Country Park *
Grith Pioneers
Lea Brook Valley Project *
Moss Valley Wildlife Group *
Ogston Bird Club *
Wessington Green Management Committee

Local Authorities (including Town and Parish Councils)

Derbyshire County Council *
Amber Valley Borough Council *
Derbyshire Dales District Council *
North East Derbyshire District Council *

Alderwasley Parish Council
Ashbourne Town Council
Ashover Parish Council*
Atlow Parish Council
Barlow Parish Council
Beeley Parish Council
Belper Town Parish Council
Biggin -by-Hulland Parish Council
Brackenfield Parish Council
Bradbourne Parish Council
Bradley Parish Council
Brampton Parish Council
Brassington Parish Council
Breadsall Parish Council
Callow Parish Council
Carsington and Hopton Parish Council
Clay Cross Parish Council
Crich Parish Council
Cromford Parish Council*
Denby Parish Council
Dethick, Lea and Holloway Parish Council*
Dronfield Parish Council
Duffield Parish Council
Eckington Parish Council
Hazelwood Parish Council
Hognaston Parish Council*
Holbrook Parish Council*
Holmesfield Parish Council
Holymoorside and Walton Parish Council
Hopton Parish Council
Horsley Parish Council
Hulland Ward Parish Council
Idridgehay, Alton and Ashleyhay Parish Council
Kilburn Parish Council*
Kirk Ireton Parish Councii*
Kniveton Parish Council
Little Eaton Parish Council*
Mapleton Parish Council
Matlock Bath Parish Council
Matlock Town Parish Council
Morley Parish Council

Offcote and Underwood Parish Council
Pentrich Parish Council
Quarndon Parish Council
Ripley Parish Council
Shirland and Higham Parish Council
Shottle and Postern Parish Council
Smalley Parish Council
South Wingfield Parish Council
Stretton Parish Council
Tansley Parish Council
Turnditch and Windley Parish Council
Unstone Parish Council
Wessington Parish Council
Weston Underwood Parish Council
Windley Parish Council
Wingerworth Parish Council
Wirksworth Town Parish Council

Other Landowning bodies

Aggregate Industries
Chatsworth Estate
Private landowners and farmers
Severn Trent Water *
Sitwell Estate
Homeowners (for UK BAP species in gardens)

* indicates Lowland Derbyshire Biodiversity Partnership member.
If your group or organisation would like to join the Partnership, go to
www.derbyshirebiodiversity.org.uk

Wildflower plug planting at Duffield Millennium Meadow
Credit: Groundwork Derby and Derbyshire

3.7 Achievements to Date in Peak Fringe area

Figures are based on Nov 2011 data and rounded to nearest hectare

Woodland

1252 ha (61 % of the target) of all Mixed Deciduous Woodland was considered to be under management (in an agri-environmental scheme or assessed as favourable or recovering condition)

Wet Woodland

17 ha (85 % of the target) of priority Wet Woodland was considered to be under management (in an agri-environmental scheme or assessed as favourable or recovering condition)

Wood pasture and parkland

8 wood-pasture and parkland sites (53% of the area resource) were considered to be under management (in an agri-environmental scheme or assessed as favourable or recovering condition)

Lowland Meadow

176 ha (84 % of the target) of priority Lowland Meadow was considered to be under management (in an agri-environmental scheme or assessed as favourable or recovering condition)

355 ha (84 % of the target) of sub-priority Lowland Meadow was considered to be under restoration (in an agri-environmental scheme or assessed as 'favourable' or 'recovering' condition), looking to bring the habitat condition up to priority status.

Lowland Acid Grassland

95 ha (79 % of the target) of priority Acid Grassland was considered to be under management (in an agri-environmental scheme or assessed as favourable or recovering condition)

204 ha (81 % of the target) of sub-priority Acid Grassland was considered to be under restoration (in an agri-environmental scheme or assessed as 'favourable' or 'recovering' condition), looking to bring the habitat condition up to priority status.

Lowland Calcareous Grassland

3 ha (50 % of the target) of priority Calcareous Grassland was considered is to be under management (in an agri-environmental scheme or assessed as favourable or recovering condition)

1.2 ha (40 % of the target) of sub-priority Calcareous Grassland was considered to be under restoration, looking to bring the habitat condition up to priority status.

Rush- pasture

6 ha (100 % of the target) of priority Rush-pasture was considered to be under management (in an agri-environmental scheme or assessed as favourable or recovering condition)

12 ha (85 % of the target) of sub-priority Rush-pasture was considered to be under restoration (in an agri-environmental scheme or assessed as 'favourable' or 'recovering' condition), looking to bring the habitat condition up to priority status.

Heathland

16 ha (53% of the target) of priority Heathland was considered to be under management (in an agri-environmental scheme or assessed as favourable or recovering condition)

37 ha (100 % of the target) of sub-priority Heathland was considered to be under restoration (in an agri-environmental scheme or assessed as 'favourable' or 'recovering' condition), looking to bring the habitat condition up to priority status.

Wetland

29 ponds (48 of the target) are currently under management.

10 lakes and canals (66% of the target) are currently under management.

1ha of reedbed (100% of the target) is currently under management.

2ha of fen (40% of the target) are currently under management.

4 ha of swamp (66% of the target) are currently under management.

Current Agri-environment Schemes:

17 Higher Level Stewardship schemes
10 Countryside Stewardship Schemes

4

Erewash Valley Area Action Plan

Lowland Derbyshire LBAP

Coalfield Estatelands of the Golden Valley looking towards Riddings. Credit: Derbyshire County Council

Prepared by the Lowland Derbyshire Biodiversity Partnership

This document is part of the Lowland Biodiversity Action Plan 2011-2020

Erewash Valley Area

Contents

Map of Erewash Valley Action Area

4.1 Area Description

4.2 Vision

4.3 The Challenges and Opportunities

- 4.3.1 Existing initiatives and projects
- 4.3.2 Main landowning bodies
- 4.3.3 Key Sites

4.4 **Key Actions** for Erewash Valley Area

4.5 **Key Targets** for Erewash Valley Area

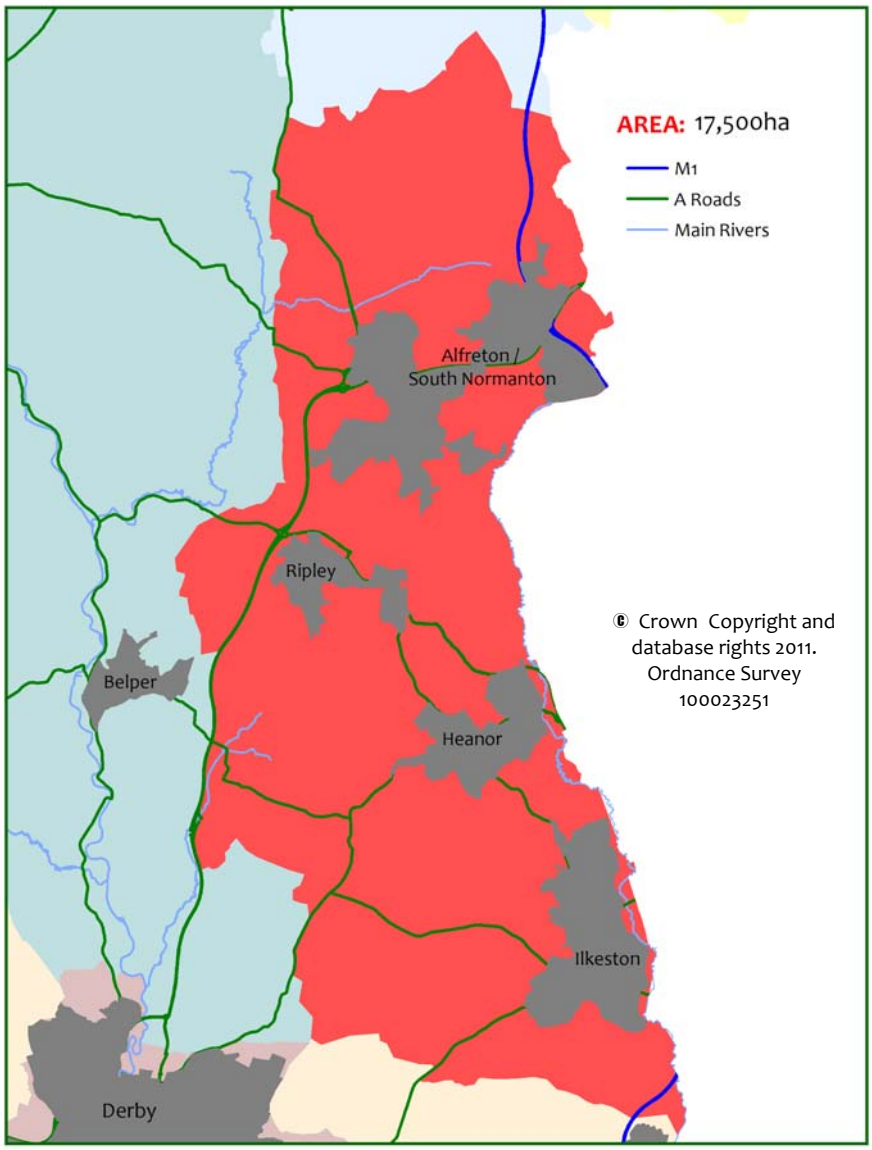
- 4.5.1 Targets for UK BAP Priority Habitats (with Target Table 4.1)
- 4.5.2 Targets for UK BAP Priority Species (with Target Table 4.2)

4.6 Appendix 1: Current Biodiversity Resources

- 4.6.1 UK BAP Habitat Resources
- 4.6.2 UK BAP Species Resources (with Species List Table 4.3)
- 4.6.3 Organisational and Manpower Resources

4.7 Appendix 2: Achievements to Date

4. Erewash Valley Area
- ACTION PLAN -



Map of Erewash Valley Action Area

For further detail see Maps section

4.1 Area Description:

The Erewash valley and catchment forms the southern part of the North Derbyshire Coalfield having a diversity of habitat types associated with the underlying geology and human influences. The area is predominantly characterised by mixed farming with remnant habitats associated with river valleys, meadows and woodlands. Woodland cover is variable, associated with former estate woodlands, more recent plantations and occasional semi natural woodland including some ancient woodland in the south of the area. The presence of other trees is variable with occasional scattered mature hedgerow trees and veteran trees in areas of historic parkland. There are large urban areas including Heanor and Ilkeston. The Erewash valley supports important wetland

habitats including reedbeds, fen and marsh. There are nine Local Nature Reserves, 3 RIGS, 126 Local Wildlife Sites and more than 20 potential Local Wildlife Sites.

The Erewash Valley area comprises five Derbyshire Landscape Character

- Sandstone Slopes & Heaths
- Coalfield Estatelands
- Lowland Village Farmlands
- Riverside Meadows
- Estate Farmlands

Use the Derbyshire County Council online mapping system to view Landscape Character Types within this Lowland Derbyshire LBAP area. www.derbyshire.gov.uk/maps

This Action Area includes the settlements of Tibshelf, South Normanton, Alfreton, Ripley, Somercotes, Heanor, Kilburn, West Hallam, Ilkeston, Kirk Hallam.

4.2 Vision

A rich diversity of wetland habitats linked by a river channel restored to a more natural condition, and flanked by farmland rich in wildlife.

4.3 The Challenges and Opportunities

This is a landscape heavily influenced by its history of mining, with a number of former opencast sites restored, or in the process of restoration for farmland and/or nature conservation. Former industrial development has left a number of disused large sites, some of which contain open mosaic habitats.

While opencast has the potential to destroy priority habitats, agreed restoration schemes at sites such as Lodge House will deliver significant new areas. The legacy of deep mining includes land subsidence, which has created wetland flashes in some places which are of significant value for wildlife.

The industrial past, urbanisation and the growth of more intensive agriculture have led to the extensive loss and fragmentation of habitats, notably ancient woodland and semi-natural grassland. The valley is important for its hedgerows, although the network is increasingly fragmented and many have declined in ecological interest through intensive management.

The River Erewash itself has been modified in many places as a result of mining activities and urbanisation. However, significant stretches of unmodified river remain and the difficulty in draining the floodplain for agriculture has meant that areas of wetland and pasture have survived, in addition to those created by subsidence. Urbanisation and industrial development mean that these areas are often isolated and declining ecologically through lack of management. Land ownership issues in the valley are often complex.

There is continuing demand for development in the area for industry and housing, and this presents both threats and opportunities. Policies aimed at protecting and enhancing Green Infrastructure are likely to be increasingly significant in delivering biodiversity benefits. Areas of semi-improved habitat associated with previous land restoration schemes present significant opportunities for habitat restoration and creation.

Canals are a significant feature, including the Erewash Canal. The Cromford Canal, which in this area is disused, has been lost along much of its line through industrial activities and development. Many stretches of canal are now Local Wildlife Sites. Proposals to restore the Cromford canal could benefit biodiversity in some areas if done sensitively, but in others could result in negative impacts. It is important that any decision to restore is made on the basis of a detailed impact assessment. The River Erewash forms the boundary with Nottinghamshire for much of its length, meaning that there is a need to work strategically across administrative areas.

The area includes 126 Local Wildlife Sites, 49 of which (39%) are in favourable or recovering condition. The main reasons for unfavourable condition are associated with lack of appropriate management, especially of grassland, and recreational pressure and anti-social behaviour on some urban fringe sites. See section 4.3.3 for a list of key sites in the Erewash Valley Action Area.

4.3.1 Existing initiatives and projects

The **Erewash Valley Trail Project** is a partnership initiative, the primary aim of which is to create a walking and cycling trail. Under the project Derbyshire and Nottinghamshire Wildlife Trusts are delivering biodiversity improvements on a selection of key sites, and contributing to efforts to raise public awareness of the ecological importance of the valley.

The Erewash Valley is a Derbyshire and Nottinghamshire Wildlife Trust **Living Landscape Area**. The Trusts aim to work together and with others to develop a project aimed at delivering a functioning network of priority habitats.

Groundwork Derby and Derbyshire has built up a good network of community groups, mostly associated with Local Nature Reserves. The **Community Wildspaces** initiative has had a number of external grants to maintain this support.

Greenprint documents, as mini-biodiversity documents, have been produced for the North East Derbyshire and Erewash areas. The Bolsover Greenprint relates to the entire District of Bolsover, although only a part of it lies within this Action Area.

4.3.2 Main landowning bodies

Local authorities own many sites in the area, some of which are designated as Local Nature Reserves, others are associated with trail networks. UK Coal owns a number of sites in the area associated with former mineral extraction. The Locko estate is one of the largest private landowning estates in this area.

4.3.3 Key Sites

The key sites in Erewash Valley Action Area are:

- **LNRs:** Carr Wood LNR, Hammersmith Meadows LNR, Oakerthorpe LNR, Pennytown Ponds LNR, Pewitt Carr LNR, Pioneer Meadows LNR, Red River LNR, Trowell Marsh LNR, Stanton Gate LNR.
- **Others:** Aldercar Flashes, Bennerley Flash, Brinsley Meadows Erewash Canal, Erewash Meadows Nature Reserve, Forge Waste Complex, Kirk Hallam Lake and Meadows, Mapperley Nature Reserve, New Eastwood Meadows, Nutbrook Canal, Shipley Country Park, Shipley Nature Reserve, Strelley Wood and Waingroves Wood.

Hammersmith Meadows Local Nature Reserve
Credit: Groundwork Derby and Derbyshire

4.4 KEY ACTIONS for the Erewash Valley area.

1. The **primary habitat objective** within the Erewash Valley area is the maintenance, restoration and expansion of wetlands including floodplain grazing marsh, lowland meadow, reedbed, woodland, wet woodland, ponds, swamp and fen, to achieve targets in Table 4.1.

2. The **secondary objective** is to increase connectivity of semi-natural habitats to create larger habitat complexes using priority habitats wherever possible. New hedgerows and in particular management of watercourses will be key to achieving this objective.

3. Develop a project to engage with land managers with the aim of creating a strategic network of functionally linked priority habitats.

4. Target renewing Entry Level Stewardship agreement holders to include appropriate actions for hedgerows.

Full targets for all Priority Habitats and Species are listed in Tables 4.1 and 4.2
All actions listed in the separate **Generic Action Plan** also apply to this area.

4.5 KEY TARGETS for the Erewash Valley area.

4.5.1 Targets for UK BAP PRIORITY HABITATS

Table 4.1 below lists the specific habitat targets for the Erewash Valley area. The requirements of UK BAP reporting mean that our own LBAP targets need to be presented as cumulative figures. The meaning of each column is explained below the table. See Maps section for the distribution of primary habitat features within this Action Area.

UK BAP Priority Habitat	(1) Current Extent at 2011 (i.e. Maintenance* Target to 2020)	Targets for 2011-2020		
		(2) Manage*	(3) Restore*	(4) Expand*
Primary feature:				
Floodplain Grazing marsh	47 ha	30 ha	10 ha	2 ha
Lakes and Canals	10 sites	10 sites	n/a	n/a
Lowland mixed deciduous woodland	690 ha	450 ha	n/a	40 ha
Lowland meadow	50 ha	42 ha	70 ha	20 ha
Wet woodland	28 ha	21 ha	n/a	5 ha
Ponds	>250 ponds	72 ponds	5 ponds	15 ponds
Secondary feature:				
Reedbed	3 ha	2 ha	n/a	1 ha
Wood-pastures and Parkland	11 sites	5 sites	n/a	n/a
Open mosaic habitats	Unknown∞			
Field margins	unknown	50 ha #		
Localised feature:				

Lowland dry acid grassland	1.3 ha	1.3 ha	12 ha	5 ha
Heathland	1 ha	1 ha	0 ha	2 ha
Lowland calcareous grassland	0 ha	0 ha	6 ha	0 ha
Traditional orchard	35 sites	15 sites	n/a	5 sites
Hedgerows	unknown	additional 10km	n/a	10 km
Lowland Swamp	37	19	0	1
Lowland Fen	3	3	0	1

Table 4.1 Targets for the Erewash Valley Action Area 2011-2020.

*Table explanation:
Terminology and measurements are the same as those used in the UK Biodiversity Action Plan (UK BAP). These are:

(1) ***'Maintenance'***–this is the current 2011 resource of each Priority Habitat, irrespective of condition and management that we must, *at the very least,* keep and carry forward into the next plan period after 2020. (i.e. no net loss.)
(2) ***'Manage'*** – The amount of Priority Habitat in (1) that we want to be under appropriate management to maintain in 'favourable' condition. This is a cumulative target, continuing on from the previous plan period.
(3) ***'Restore'*** – Habitat which is not in a 'favourable' condition, but which is under restorative management to bring it up to that condition. This is a cumulative target, continuing on from the previous plan period.
(4) ***'Expand'*** – New habitat created from scratch. This could be on a new site or an extension to an existing one. The target is for this Plan Period, though some habitats, - such as woodland - take far longer to fully develop.

Notes to accompany Table 4.1

∞ ***Open mosaic habitats*** the distribution of this habitat is not well understood at the start of this Plan Period (see Generic Action Plan). Its presence is, however, important in this area. It should be maintained in situ wherever possible, especially where it contributes to a wider network linking key habitats

Field Margins It is not possible to set separate targets for management, restoration or expansion. A single overall target for simply increasing this resource is provided. Figures can only be based on Entry Level Stewardship monitoring. Further habitat may also be provided through Living Bird Table initiatives.

4.5.2 Targets for UK BAP PRIORITY SPECIES

There are 78 UK BAP Priority Species recorded within the Erewash Valley Action Area since 2000. The distribution and status of many of these species is not currently well known, and consequently it is not possible to set meaningful targets for them. However, there are other species about which we do know enough to be able to set targets, monitor and assess their success. These are shown below in Table 4.2

The full list of UK BAP Species for the Erewash Valley area is given in Table 4.3 (see Section 4.6.2)

UK BAP Priority Species	Range targets to 2020 (1km^2)	Range expansion targets 2011-2020 (1km^2)	Method
Grass-wrack pondweed	3	maintain current range only	
Dingy skipper	19	1	Appropriate habitat enhancement
Great-crested newt	16	1	Targeted pond creation
Otter	1	2	Appropriate habitat enhancement
Water Vole	42	maintain current range only	Mink control and appropriate habitat enhancement
White-clawed crayfish	11	1	Creation of 1 ark site

Table 4.1 Targets for UK BAP Species within the Erewash Valley Action Area.

Since 1990 **otters** have begun to be recorded along the lower reaches of the River Erewash. There are records in two grid squares (2 x 1 km^2)since 1990. **Target:** Increase range by two 1 km^2 by 2020.

Water Voles have been recorded in 42 grid squares (42 x 1 km^2) since 2000, but have suffered a drastic decline and populations are now few and far between in this area, confined primarily to small watercourses and along canals. **Target:** Maintain 2011 range by 2020.

Great-crested newts have been recorded in 16 grid squares (16 x 1 km^2) since 1990 **Target:** Increase range by one 1 km^2 by 2020.

The areas of open habitats associated with land restoration make ideal habitat for **Dingy skippers**, which have recorded in 19 grid squares (19 x 1 km^2) since 2000. **Target:** Increase range by one 1 km^2 by 2020.

Grass-wrack pondweed has been recorded in three grid squares (3 x 1 km^2) since 2000, due to its location the population is under increased pressure from recreational activities. **Target:** Maintain 2011 range by 2020.

Grass-wrack pondweed.
Credit: Debbie Alston

4.6 Current Biodiversity Resources

This list of resources within the Erewash Valley Action Area has been divided into three parts:

4.6.1. UK BAP Priority Habitat Resources
4.6.2 UK BAP Priority Species Resources
4.6.3 Organisational and Manpower Resources

4.6.1 UK BAP Priority Habitat Resources

The figures below show the total amount of each Priority Habitat known to exist in the Erewash Valley area at the start of this Plan Period in 2011. Figures for sub-priority and newly created habitats are given if known.

Brief notes on their distribution within the area then follow.

Total area of the Erewash Valley area = **17,580 ha**

Total area of Priority biodiversity resource at start of Plan Period = **932.2 ha**

Percentage of Erewash Valley containing this biodiversity resource = **5.3%**

Lowland Mixed Deciduous Woodland:

Ancient Semi-Natural Woodland =	120 ha
Plantation on Ancient Woodland Sites =	29 ha
Secondary =	244 ha
Plantation =	269 ha

Wet Woodland: 28 ha

Wood pasture and parkland: (11 sites) 26 ha

Traditional orchard: (35 sites) 8 ha

Lowland Meadow : 50 ha
(Plus 210 ha of sub-priority and 47 ha of newly created)

Lowland Dry Acid Grassland: 1.2 ha
(Plus 31 ha of sub-priority)

Lowland Calcareous Grassland: (6ha of sub-priority grassland)

Floodplain Grazing Marsh: 75 ha

Heathland:
(1.1ha of sub-priority heathland)

Wetland:

>250 ponds	
5 lakes and 5 sections of canal	33 ha
Reedbed:	3 ha
Swamp:	37 ha
Fen:	9 ha

Location of Priority Habitats in the Landscape:

Primary features:

Rivers/streams: The main river is the Erewash with its tributaries Normanton brook, Stanley brook, Nutbrook and Golden Brook.
Floodplain grazing marsh: Particularly in areas between the River Erewash and other lines features such as the railway, roads or the Erewash canal and at the lower reaches of the River Erewash.
Standing open water and ponds: Some large lakes associated with water storage and many ponds around the edges of towns which are fished.
Lowland meadow: Sparse habitat, main concentrations around Blackwell and Horsley Woodhouse.
Hedgerows: Widespread throughout the area.
Veteran trees: Relatively sparse in the area outside main parkland areas.
Lowland mixed deciduous woodland: Mostly secondary and plantation woodlands associated with coal extraction sites, some ancient woodlands on steep slopes.
Wet woodland: Associated with river corridor habitat.

Secondary features:

Reedbed: Largely confined to river corridors.
Field margins: Widespread on farmland habitat throughout area.
Wood-pasture and parkland: A few small areas associated with small estates.
Open Mosaic: Occurs on brownfield sites, areas known on the former Stanton Ironworks site.

Localised features:

Lowland calcareous grassland: Along former railway lines.
Lowland dry acid grassland and *heathland:* On the sandstone ridge between Sandiacre and Little Eaton.

Note: The terms Primary, Secondary or Localised feature used above are synonymous with 'Primary Habitat' etc. used in the Landscape Character of Derbyshire (2003) see www.derbyshire.gov.uk/landscape. These describe how noticeable and distinctive each habitat is within the landscape itself. Only Primary Features are shown in the detailed map of each Action Area in the Maps section.

4.6.2 UK BAP Priority Species Resources

Group	English Name
Plant *	Grass-wrack Pondweed
Plant *	Tubular Water Dropwort
Amphibian	Great crested newt
Amphibian	Common toad
Reptile	Common lizard
Reptile	Grass snake
Reptile	Slow worm
Bird	Bullfinch
Bird	Dunnock
Bird	Grey partridge
Bird	Herring gull
Bird	House sparrow
Bird	Lapwing
Bird	Lesser spotted woodpecker
Bird	Linnet
Bird	Marsh tit
Bird	Reed bunting
Bird	Skylark
Bird	Song thrush
Bird	Spotted flycatcher
Bird	Starling
Bird	Tree pipit
Bird	Tree sparrow
Bird	Twite (non breeding)
Bird	Turtle Dove
Bird	Willow tit
Bird	Wood warbler
Bird	Yellowhammer
Bird	Yellow wagtail
Mammal	Brown hare
Mammal	Brown long-eared bat
Mammal	Harvest mouse
Mammal	Hedgehog
Mammal	Noctule
Mammal	Polecat
Mammal	Soprano pipistrelle
Mammal	Water vole
Butterfly	Dingy skipper
Butterfly	Small heath

Group	English Name
Butterfly	Wall
Butterfly	White letter hairstreak
Crustacean	White-clawed crayfish
Moth	Autumnal rustic
Moth	Beaded chestnut
Moth	Blood-vein
Moth	Brindled beauty
Moth	Broom moth
Moth	Brown-spot pinion
Moth	Buff ermine
Moth	Centre-barred sallow
Moth	Dark-barred twin-spot carpet
Moth	Deep-brown dart
Moth	Dot moth
Moth	Dusky brocade
Moth	Dusky thorn
Moth	Figure of eight
Moth	Garden dart
Moth	Ghost moth
Moth	Green-brindled crescent
Moth	Knot grass
Moth	Latticed heath
Moth	Mouse moth
Moth	Oak hook-tip
Moth	Powdered quaker
Moth	Rosy minor
Moth	Rosy rustic
Moth	Shaded broad-bar
Moth	Shoulder-striped wainscot
Moth	Small emerald
Moth	Small phoenix
Moth	Small square-spot
Moth	The cinnabar
Moth	The rustic
Moth	The sallow
Moth	The spinach
Moth	The sprawler
Moth	The streak
Moth	White ermine

Table 4.3 UK BAP Priority Species known to be present within the Erewash Valley area since 2000 (78 species)

*__Note:__ Marsh Stitchwort has been recorded at sites in this Action Area in the 1990s.

4.6.3 Organisational and Manpower Resources

Below is a list of organisations that are key to delivering the actions and targets in the Erewash Valley area. Reference should also be made to the table in the Generic Action Plan.

Statutory Agencies

Environment Agency*
Forestry Commission*
Natural England *

Voluntary organisations

BTCV *
Derbyshire Wildlife Trust *
FWAG *
Groundwork Creswell, Ashfield and Mansfield *
Groundwork Derby and Derbyshire *
RSPB *

Local and Community Groups

Denby Footpaths Group *
Friends of Carr Wood and Hammersmith Meadows
Friends of Kirk Hallam Lake and Meadows *
Friends of Pennytown Ponds
Friends of Red River *
Friends of Shipley Country Park
Stanley & Stanley Common Wildlife Group
Waingroves Wood Group

Local Authorities (including Town and Parish Councils)

Derbyshire County Council *
Amber Valley Borough Council *
Bolsover District Council *
Erewash Borough Council *
North East Derbyshire District Council *
Aldercar and Langley Mill Parish Council
Alfreton Town Parish Council
Ault Hucknall Parish Council
Belper Town Parish Council
Blackwell Parish Council
Codnor Parish Council
Dale Abbey Parish Council
Denby Parish Council
Heanor and Loscoe Town Council
Holbrook Parish Council
Horsley Parish Council
Horsley Woodhouse Parish Council
Ironville Parish Council*
Kilburn Parish Council
Mapperley Parish Council*
Morley Parish Council
Morton Parish Council
Pentrich Parish Council
Pilsley Parish Council
Pinxton Parish Council
Ripley Parish Council*
Sandiacre Parish Council
Shipley Parish Council
Shirland and Higham Parish Council
Smalley Parish Council*
Somercotes Parish Council
South Normanton Parish Council
South Wingfield Parish Council
Stanley and Stanley Common Parish Council*
Stanton by Dale Parish Council
Swanwick Parish Council
Tibshelf Parish Council*
West Hallam Parish Council

Other Landowning bodies

Locko Estate
Network Rail
Private landowners and farmers
Severn Trent Water *
UK Coal
Homeowners (for UK BAP species in gardens)

* indicates Lowland Derbyshire Biodiversity Partnership member. If your group or organisation would like to join the Partnership, go to www.derbyshirebiodiversity.org.uk

4.7 Achievements to Date in Erewash Valley area

Figures are based on Nov 2011 data and rounded to nearest hectare

Woodland

300 ha (66 % of the target) of priority Mixed Deciduous Woodland was considered to be under management (in an agri-environmental scheme or assessed as favourable or recovering condition)

Wet Woodland

15 ha (71 % of the target) of priority Wet Woodland was considered to be under management (in an agri-environmental scheme or assessed as favourable or recovering condition)

Wood pasture and parkland

1 wood-pasture and parkland site (20 % of the area resource) was considered to be under management (in an agri-environmental scheme or assessed as favourable or recovering condition)

Lowland meadow

32 ha (76% of the target) of priority Lowland Meadow was considered to be under management (in an agri-environmental scheme or assessed as favourable or recovering condition)

51 ha (73% of the target) of sub-priority Lowland Meadow was considered to be under restoration (in an agri-environmental scheme or assessed as 'favourable' or 'recovering' condition), looking to bring the habitat condition up to priority status.

Lowland dry acid grassland

1.3 ha (100% of the target) of priority Dry Acid Grassland was considered to be under management (in an agri-environmental scheme or assessed as favourable or recovering condition)

6 ha (50% of the target) of sub-priority Dry Acid Grassland was considered to be under restoration (in an agri-environmental scheme or assessed as 'favourable' or 'recovering' condition), looking to bring the habitat condition up to priority status.

Wetland

35 ponds (49% of the target) are currently under management

8 lakes and canals (80% of the target) are currently under management.

0.3 ha of reedbed (15% of the target) are currently under management.

5 ha of swamp (26% of the target) are currently under management.

3 ha of fen (100% of the target) are currently under management.

Current Agri-environment Schemes:

1 Higher Level Stewardship Scheme

7 Countryside Stewardship Schemes

5

Claylands Area Action Plan

Lowland Derbyshire LBAP

Sand quarries of the Sandstone Slopes and Heaths near Muggington. Credit: Derbyshire County Council

Prepared by the Lowland Derbyshire Biodiversity Partnership

This document is part of the Lowland Biodiversity Action Plan 2011-2020

Claylands Area

Contents

Map of Claylands Action Area

5.1 Area Description

5.2 Vision

5.3 The Challenges and Opportunities

- 5.3.1 Existing initiatives and projects
- 5.3.2 Main landowning bodies
- 5.3.3 Key Sites

5.4 **Key Actions** for Claylands Area

5.5 **Key Targets** for Claylands Area

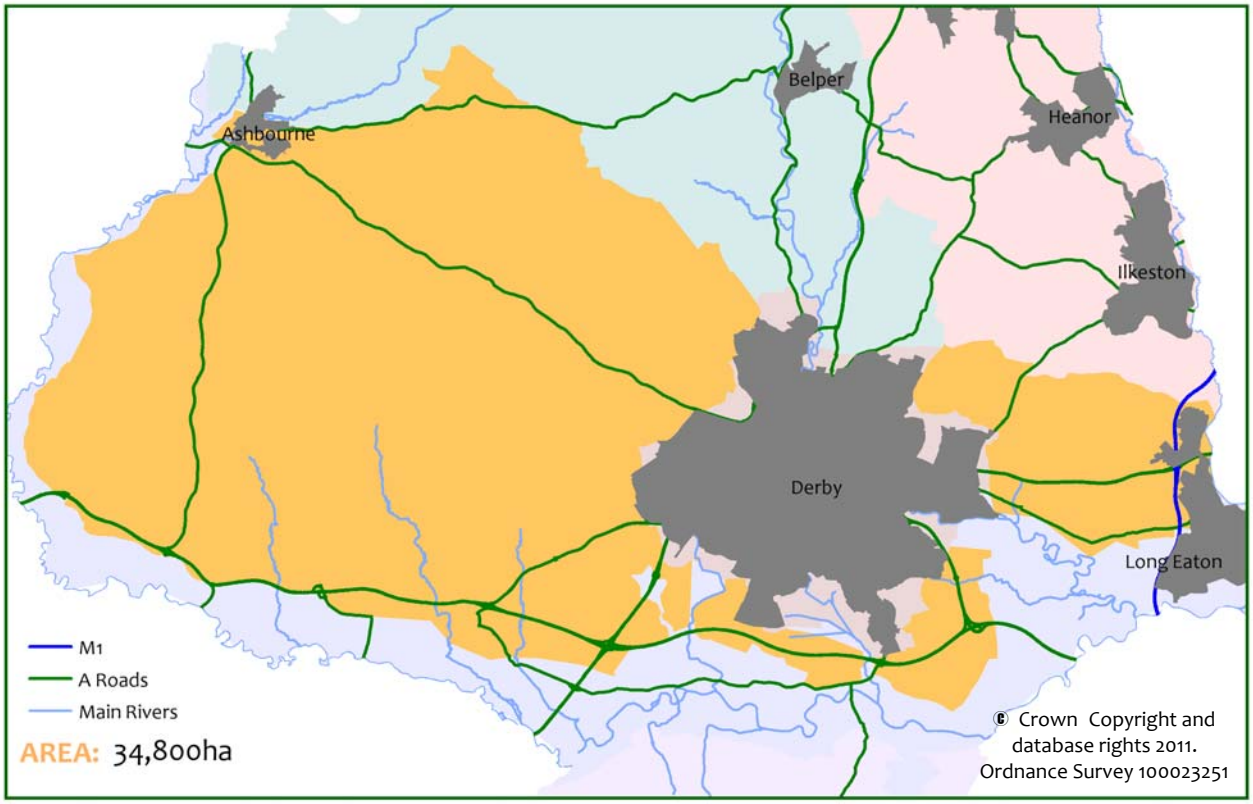
- 5.5.1 Targets for UK BAP Priority Habitats (with Target Table 5.1)
- 5.5.2 Targets for UK BAP Priority Species (with Target Table 5.2)

5.6 Appendix 1: Current Biodiversity Resources

- 5.6.1 UK BAP Habitat Resources
- 5.6.2 UK BAP Species Resources (with Species List Table 5.3)
- 5.6.3 Organisational and Manpower Resources

5.7 Appendix 2: Achievements to Date

5. Claylands Area
- ACTION PLAN –



Map of Claylands Action Area

For further detail see Maps section

5.1 Area Description:

This is an area of gently undulating to rolling pastoral landscape over Mercia mudstones, sandstones and glacial drift to the west and east of Derby. Small irregular fields are enclosed by mixed species hedgerows with many mature hedgerow trees while the plateau areas have more regular shaped fields with thorn hedgerows and fewer trees. Where the topography allows and on lower valley slopes towards the Trent valley there are areas of mixed farming that provide localised arable habitats. Woodland habitat occurs sparsely but there are important veteran trees associated with historic parklands. There is a dense network of small tributary streams that provide important wetland habitats including rush pasture, mire and fen.

The area includes four Sites of Special Scientific Interest, no Local Nature Reserves, 16 RIGS, 133 Local Wildlife Sites and a number of potential Local Wildlife Sites.

The Claylands area comprises seven Derbyshire Landscape Character Types:

- Sandstone Slopes & Heaths
- Plateau Estate Farmlands
- Estate Farmlands

- Settled Farmlands
- Settled Plateau Farmlands
- Lowland Village Farmlands
- Riverside Meadows

Use the Derbyshire County Council online mapping system to view Landscape Character Types within this Lowland Derbyshire LBAP area. www.derbyshire.gov.uk/maps

This Action Area includes the settlements of Ashbourne (part of), Brailsford, Hilton, Etwall, Borrowash, Stapleford.

5.2 Vision

Maintaining flower rich pastoral grasslands bound by species-rich hedgerows with mature trees, connecting to isolated fragments of wildlife rich ancient woodland and ponds.

5.3 The Challenges and Opportunities

There are some very large land holding organisations within the area, who need to be engaged with to deliver biodiversity. Many of these estates use the woodlands for pheasant rearing.

Where semi-natural grasslands occur, many of these are under-managed due to lack of grazing stock.

There are no community groups and a limited number of parish councils and landowners engaged in biodiversity work within this area. The **Mercaston and Markeaton Brook Project**, however, has the potential to act as a vehicle for facilitating BAP delivery through HLS and other mechanisms. This project runs until 2013.

The aggregate sites around Mercaston offer opportunities through restoration schemes to deliver positively for biodiversity, and the larger areas of acid grassland occur within the disused quarries (Derby Hills, Mercaston Pit).

The area includes 133 **Local Wildlife Sites**, 39 of which (29%) are in 'favourable' or 'recovering' condition. The main reasons for 'unfavourable' condition are associated with unmanaged grassland, the presence of non-native species in woodlands and pollution incidents. See section 5.3.3 for a list of key sites in the Claylands area.

5.3.1 Existing initiatives and projects

The area around Mugginton is within a target area forHigher Level Stewardship. Much of which is associated with the SSSIs.

Markeaton and Mercaston Brook Project, led by the National Trust, has been running since 2006. The aim of the project is to improve the quality of the lakes

in the SSSI at Kedleston Hall, looking holistically at the watercourses flowing into the lakes and trying to reduce the nutrient and sediment run-off as well as improving the habitat for priority riverine species. The project has a grant through the SITA Trust until 2012.

Greenway development, along former railway lines, presents opportunities, so long as their development protects and enhances the existing habitats.

Part of the **Erewash Greenprint document** covers parts of this area. These documents are mini biodiversity action plans setting actions and targets for the local authority areas.

5.3.2 Main landowning bodies

There are a number of large estates in this area, including the National Trust, Meynell Langley, Shirley, Locko and Osmaston Estates. Hansons own a complex of aggregate sites in the Hulland Ward and Muggington area, which offer substantial opportunities for habitat restoration and creation. Derbyshire Wildlife Trust owns a couple of reserves in the area. There is very little publicly owned land in the area, apart from a number of trail networks.

5.3.3 Key Sites

The key sites in the Claylands Action Area are:

- **SSSIs:** Breadsall Railway Cutting SSSI, Hilton Gravel Pits SSSI, Hulland Moss SSSI, Kedleston Hall SSSI, Mercaston Marsh and Muggington Bottom SSSI, Morley Brickpits SSSI.
- **Others:** Great Northern Greenway, Locko Park, Meynell Langley Parkland, Osmaston Park, Radbourne Park, Ravensdale Park.

Reedbed planting at Hilton Gravel Pits SSSI
Credit: Debbie Alston

5.4 KEY ACTIONS for the Claylands area.

1. The **primary habitat objective** within the Claylands area is the maintenance, restoration and expansion of wetlands, hedgerows, grassland and parkland habitats to achieve targets in Table 5.1 below.

2. The **secondary objective** is to increase connectivity of semi-natural habitats to create larger habitat complexes using priority habitats wherever possible. New habitats, linking and extending existing networks will be key to achieving this objective.

3. Target renewing Entry Level Stewardship agreement holders to include appropriate actions for hedgerows, farmland birds and field margins.

4. Explore options to work closer with community groups in this area .

5. Investigate and develop one ark site for white-clawed crayfish.

6. Target Parish Councils to join up and support the LBAP partnership .

Full targets for all Priority Habitats and Species are listed in Tables 5.1 and 5.2
All actions listed in the separate **Generic Action Plan** also apply to this area.

5.5 KEY TARGETS for the Claylands area.

5.5.1 Targets for UK BAP PRIORITY HABITATS

Table 5.1 below lists the specific habitat targets for the Claylands area. The requirements of UK BAP reporting mean that our own LBAP targets need to be presented as cumulative figures. The meaning of each column is explained below the table. See Maps section for the distribution of primary habitat features within this Action Area.

UK BAP Priority Habitat	(1) Current Extent at 2011 (i.e. Maintenance* Target to 2020)	Targets for 2011-2020		
		(2) Manage*	(3) Restore*	(4) Expand*
Primary feature:				
Lowland meadow	42 ha	40 ha	165 ha	15 ha
Wood-pastures and Parkland	16 sites	9 sites	n/a	n/a
Hedgerows	unknown	Additional 10 km	n/a	7 km
Ponds	>500 ponds	40 ponds	15 ponds	ponds
Secondary feature:				
Field margins	unknown	50 ha #		
Lowland mixed deciduous woodland	885 ha	700 ha	n/a	20 ha
Wet Woodland	38 ha	20 ha	n/a	n/a
Lowland dry acid grassland	58 ha	40 ha	130 ha	5 ha
Lakes and Canals	6 lakes	6 lakes	n/a	n/a
Rush Pasture	15 ha	15 ha	15 ha	0 ha
Localised feature:				
Traditional orchard	155 sites	60 sites	10 sites	10 sites

Lowland Swamp	13 ha	10 ha	n/a	n/a
Lowland Fen	4 ha	4 ha	2 ha	n/a
Lowland Mire	7 ha	7 ha	n/a	n/a
Heathland	n/a	n/a	0.2 ha	n/a

Table 5.1 Targets for the Claylands Action Area 2011-2020.

*Table explanation:
Terminology and measurements are the same as those used in the UK Biodiversity Action Plan (UK BAP). These are:

(1) ***'Maintenance'***–this is the current 2011 resource of each Priority Habitat, irrespective of condition and management that we must, *at the very least,* keep and carry forward into the next plan period after 2020. (i.e. no net loss.)
(2) ***'Manage'*** – The amount of Priority Habitat in (1) that we want to be under appropriate management to maintain in **'favourable'** condition. This is a cumulative target, continuing on from the previous plan period.
(3) ***'Restore'*** – Habitat which is not in a **'favourable'** condition, but which is under restorative management to bring it up to that condition. This is a cumulative target, continuing on from the previous plan period.
(4) ***'Expand'*** – New habitat created from scratch. This could be on a new site or an extension to an existing one. The target is for this Plan Period, though some habitats, - such as woodland - take far longer to fully develop.

Notes to accompany Table 5.1

Create **woodlands** where opportunities exist to enlarge, link and buffer smaller woodlands (particularly ancient woods) in the area between Snelston and Kedleston.

Grassland management, restoration and creation should be targeted in the area from Ashbourne to Weston Underwood, north of the A52.

Field Margins It is not possible to set separate targets for management, restoration or expansion. A single overall target for simply increasing this resource is provided. Figures can only be based on Entry Level Stewardship monitoring. Further habitat may also be provided through Living Bird Table initiatives.

5.5.2 Targets for UK BAP PRIORITY SPECIES

There are 77 UK BAP Priority Species recorded within the Claylands Action Area since 2000. The distribution and status of many of these species is not currently well known, and consequently it is not possible to set meaningful targets for them. However, there are other species about which we do know enough to be able to set targets, monitor and assess their success. These are shown below in Table 5.2

The full list of UK BAP Species for the Claylands area is given in Table 5.3 (see Section 5.6.2)

UK BAP Priority Species	Range targets to 2020 ($1km^2$)	Range expansion targets 2011-2020 ($1km^2$)	Method
Dingy skipper	5	1	Appropriate habitat Enhancement
Great-crested newt	17	2	Targeted pond creation
Oak polypore	1	Maintain current range only	Care of veteran trees
Otter	11	2	Appropriate habitat enhancement
Water vole	16	Maintain current range only	Control mink; habitat maintenance; recording
White-clawed crayfish	3	1	Creation of one ark site

Table 5.2 Targets for UK BAP Species within the Claylands Action Area.

Dingy skippers have been recorded in five grid squares (5 x 1 km^2) since 2000, these are mostly associated with the open character of the aggregate complex near Hulland Ward and Muggington. **Target:** Increase range by one 1 km^2 by appropriate habitat enhancement.

Great-crested newts have been recorded in 17 grid squares (17 x 1 km^2) since 1990. **Target:** Increase range by two 1 km^2 by pond creation activities.

Oak Polypore has been recorded in one grid square (1 x 1 km^2) in this Action Area on a single tree at Kedleston Hall. It is unlikely that additional sites will be found. **Target:** Maintain existing range by monitoring and protecting the veteran tree resource.

Otters have been recorded in 11 grid squares (11 x 1 km^2) since 1990, these are mostly associated with tributaries of the River Trent and Dove. Unconfirmed records of otters have also been recorded along the Markeaton Brook as it leaves the City.

Water Voles have declined in this area, as other areas, and have been recorded in 16 grid squares (16 x 1 km^2) since 2000. **Target:** Maintain existing range by controlling mink where appropriate and ensuring potential habitat is maintained in good condition.

White-clawed crayfish are a key species within this area, but have only been recorded at three grid squares (3 x 1 km^2) since 2000. These are at isolated sites, such as Kedleston Hall and Shirley lakes. **Target:** Increase range by the creation of an additional ark site.

Dingy Skipper
Credit: Debbie Alston

5.6 Current Biodiversity Resources

This list of resources within the Claylands area has been divided into three parts:

5.6.1. UK BAP Priority Habitat Resources
5.6.2 UK BAP Priority Species Resources
5.6.3 Organisational and Manpower Resources

5.6.1 UK BAP Priority Habitat Resources

The figures below show the total amount of each Priority Habitat known to exist in the Claylands area at the start of this Plan Period in 2011. Figures for sub-priority and newly created habitats are given if known.
Brief notes on their distribution within the area then follow.

Total area of the Claylands region = **34,825 ha**
Total area of Priority biodiversity resource at start of Plan Period = **1,675.2 ha**
Percentage of the Claylands area containing this biodiversity resource = **4.8%**

Woodland:

Ancient Semi-Natural Woodland =	142 ha
Plantation on Ancient Woodland Sites =	93 ha
Secondary =	582 ha
Plantation =	69 ha

Wet Woodland: 38 ha

Wood pasture and parkland: 27 sites 520 ha

Traditional orchard: **c.**155 sites = 42 ha

Lowland Meadow: 42 ha
(Plus 238 ha of sub-priority, 15 ha of newly created)

Lowland Dry Acid: 58 ha
(Plus 140 ha of sub-priority)

Rush- pasture: 15 ha
(Plus 15 ha of sub-priority and 39 ha newly created)

Floodplain Grazing Marsh: 20 ha

Heathland: 0.2 ha

Wetland:

Lakes (6)	30 ha
Ponds (>500)	
Swamp	13 ha
Fen	4 ha
Mire	7 ha

Location of Priority Habitats in the Landscape:

Primary features:

Wood-pasture and Parkland: Scattered across the area with fine examples at Kedleston, Meynell Langley, Locko Park, Osmaston Park, Radbourne Park, Snelston Park.
Veteran trees: Mainly found in the parks, but also in fields, hedges and woods across the area.
Hedgerows: Widespread throughout the area.
Lowland Meadow: Main concentration in the Mercaston Brook catchment between Hulland Ward and Kedleston .
Ponds: Main concentration between Osmaston and Kedleston.

Secondary features:

Lowland mixed deciduous woodland: A swathe across the northern part of the area, mainly estate woodlands around Kedleston, Osmaston, Snelston.
Wet woodland: Small scattered good examples of alder carr woodland adjacent to watercourses.
Field Margins: Widespread across the area.
Floodplain Grazing Marsh: Mainly on the Erewash, with smaller examples on the Hilton and Foston Brooks.
Rush Pasture: Mainly around Mercaston.
Lowland Dry Acid Grassland: Around Ashbourne, and Mercaston.
Lakes: Mainly associated with the parklands.

Localised features:

Fen, mire and swamp: Concentration between Osmaston and Mugginton.
Heathland: Very small area at Hulland Moss SSSI only.

Note: The terms Primary, Secondary or Localised feature used above are synonymous with 'Primary Habitat' etc. used in the Landscape Character of Derbyshire (2003) see www.derbyshire.gov.uk/landscape. These describe how noticeable and distinctive each habitat is within the landscape itself. Only Primary Features are shown in the detailed map of each Action Area in the Maps section.

Parkland at Kedleston.
Credit: Debbie Alston

5.6.2 UK BAP Priority Species Resources

Group	English Name
Fungus	Oak polypore
Amphibian	Great crested newt
Amphibian	Common toad
Reptile	Common lizard
Reptile	Grass snake
Reptile	Slow worm
Fish	Brown trout
Fish	Eel
Bird	Bullfinch
Bird	Corn bunting
Bird	Cuckoo
Bird	Curlew
Bird	Dunnock
Bird	Grasshopper warbler
Bird	Grey partridge
Bird	Hawfinch
Bird	Herring Gull
Bird	House sparrow
Bird	Lapwing
Bird	Lesser redpoll
Bird	Lesser spotted woodpecker
Bird	Linnet
Bird	Marsh tit
Bird	Reed bunting
Bird	Skylark
Bird	Song thrush
Bird	Spotted flycatcher
Bird	Starling
Bird	Tree pipit
Bird	Tree sparrow
Bird	Turtle dove
Bird	Willow tit
Bird	Wood warbler
Bird	Yellowhammer
Bird	Yellow wagtail
Mammal	Brown hare
Mammal	Brown long-eared bat
Mammal	Harvest mouse
Mammal	Hedgehog

Group	English Name
Mammal	Noctule
Mammal	Otter
Mammal	Polecat
Mammal	Soprano pipistrelle
Mammal	Water vole
Butterfly	Dingy skipper
Butterfly	Wall
Butterfly	White letter hairstreak
Crustacean	White-clawed crayfish
Moth	August thorn
Moth	Beaded chestnut
Moth	Blood-vein
Moth	Brindled beauty
Moth	Broom moth
Moth	Buff ermine
Moth	Centre-barred sallow
Moth	Deep-brown dart
Moth	Dot moth
Moth	Dusky brocade
Moth	Dusky thorn
Moth	Garden tiger
Moth	Ghost moth
Moth	Green-brindled crescent
Moth	Grey dagger
Moth	Latticed heath
Moth	Mottled rustic
Moth	Mouse moth
Moth	Oak hook-tip
Moth	Oblique carpet
Moth	Rosy rustic
Moth	September thorn
Moth	Shaded broad-bar
Moth	Shoulder-striped wainscot
Moth	Small phoenix
Moth	Small square-spot
Moth	The cinnabar
Moth	The rustic
Moth	White ermine

Table 5.3 UK BAP Priority Species known to be present within the Claylands area since 2000. (77 species)

5.6.3 Organisational and Manpower Resources

Below is a list of organisations which are key to delivering the actions and targets in the Claylands area. Reference should also be made to the table in the Generic Action Plan.

Statutory Agencies
Environment Agency*
Forestry Commission *
Natural England *

Voluntary organisations
BTCV *
Derbyshire Wildlife Trust *
Groundwork Derby and Derbyshire *
Private landowners and farmers

Local and Community Groups
Ashbourne Field Club

Local Authorities (including Town and Parish Councils)
Derbyshire County Council *
Amber Valley Borough Council *
Derbyshire Dales District Council *
Erewash Borough Council *
South Derbyshire District Council *

Alkmonton and Hungry Bentley Parish Council
Ashbourne Town Council
Aston upon Trent Parish Council
Atlow Parish Council
Barrow upon Trent Parish Council
Barton Blount Parish Council
Bearwardcote Parish Council
Biggin-by-Hulland Parish Council
Boylestone Parish Council
Bradley Parish Council
Brailsford Parish Council
Breaston Parish Council
Burnaston Parish Council
Church Broughton Parish Council
Clifton and Compton Parish Council
Cubley Parish Council
Dalbury Lees Parish Council
Dale Abbey Parish Council
Doveridge Parish Council
Draycott and Church Wilne Parish Council
Edlaston and Wyaston Parish Council
Egginton Parish Council
Elvaston Parish Council
Etwall and Ash Parish Council
Findern Parish Council
Foston and Scropton Parish Council
Hatton Parish Council
Hilton Parish Council
Hognaston Parish Council
Hollington Parish Council
Hoon Parish Council
Hulland Parish Council
Hulland Ward Parish Council
Hungry Bentley Parish Council
Kedleston Parish Council
Kirk Langley Parish Council
Longford Parish Council
Mackworth Parish Council*
Marston Montgomery Parish Council
Marston on Dove Parish Council
Mercaston Parish Council
Morley Parish Council
Norbury and Roston Parish Council
Ockbrook and Borrowash Parish Council
Offcote and Underwood Parish Council
Osleston and Thurvaston Parish Council
Osmaston and Yeldersley Parish Council
Quarndon Parish Council
Radbourne Parish Council
Ravensdale Park Parish Council
Risley Parish Council
Rodsley and Yeaveley Parish Council

Sandiacre Parish Council
Shirley Parish Council
Snelston Parish Council
Somersal Herbert Parish Council
Stanley and Stanley Common Parish Council
Stanton by Dale Parish Council
Stenson Fields Parish Council
Sudbury Parish Council
Sutton on the Hill Parish Council
Swarkestone Parish Council
Trusley Parish Council
Twyford and Stenson Parish Council
Weston Underwood Parish Council
Weston upon Trent Parish Council
Willington Parish Council
Windley Parish Council

Other Landowning bodies

Hansons
Meynell Langley Estate
National Trust*
Homeowners (for UK BAP species in gardens)

* indicates Lowland Derbyshire Biodiversity Partnership member.
If your group would like to join the Partnership, go to
www.derbyshirebiodiversity.org.uk

Recording Veteran Trees at Kedleston Park.
Credit: Debbie Alston

5.7 Achievements to Date in the Claylands area

Figures are based on Nov 2011 data and rounded to nearest hectare

Woodland

680 ha (97 % of the target) of priority Mixed Deciduous Woodland was considered to be under management (in an agri-environmental scheme or assessed as favourable or recovering condition)

Wet Woodland

8 ha (40 % of the target) of priority Wet Woodland was considered to be under management (in an agri-environmental scheme or assessed as favourable or recovering condition)

Wood pasture and parkland

6 wood-pasture and parkland sites (67 % of the area resource) were considered to be under management (in an agri-environmental scheme or assessed as favourable or recovering condition)

Lowland Meadow

33 ha (83 % of the target) of priority Lowland Meadow was considered to be under management (in an agri-environmental scheme or assessed as favourable or recovering condition)

132 ha (80 % of the target) of sub-priority Lowland Meadow was considered to be under restoration (in an agri-environmental scheme or assessed as 'favourable' or 'recovering' condition), looking to bring the habitat condition up to priority status.

Lowland Dry Acid Grassland

29 ha (73 % of the target) of priority Dry Acid Grassland was considered to be under management (in an agri-environmental scheme or assessed as favourable or recovering condition)

122 ha (94 % of the target) of sub-priority Dry Acid Grassland was considered to be under restoration (in an agri-environmental scheme or assessed as 'favourable' or 'recovering' condition), looking to bring the habitat condition up to priority status.

Rush- pasture

12 ha (80 % of the target) of priority Rush-pasture was considered to be under management (in an agri-environmental scheme or assessed as favourable or recovering condition)

12 ha (80 % of the target) of sub-priority Rush-pasture was considered to be under restoration (in an agri-environmental scheme or assessed as 'favourable' or 'recovering' condition), looking to bring the habitat condition up to priority status.

Heathland

0.2 ha (100 % of the target) of sub-priority Heathland was considered to be under restoration (in an agri-environmental scheme or assessed as 'favourable' or 'recovering' condition), looking to bring the habitat condition up to priority status.

Wetland

24 ponds (60% of the target) are currently under management

3 lakes (50% of the target) are currently under management

8 ha of swamp (80% of the target) are currently under management

4 ha (100% of the target) of fen is currently under management

2 ha (100% of the target) of fen is currently under restorative management

3 ha of mire (43% of the target) are currently under management

Current Agri-environment Schemes:
9 Higher Level Stewardship Schemes
10 Countryside Stewardship Schemes

6

Derby Area Action Plan

Lowland Derbyshire LBAP

Weir on the River Derwent near Borrowash. Credit: Debbie Alston

Prepared by the Lowland Derbyshire Biodiversity Partnership

This document is part of the Lowland Biodiversity Action Plan 2011-2020

Derby Area

Contents

Map of Derby Action Area

6.1 Area Description

6.2 Vision

6.3 The Challenges and Opportunities

- 6.3.1 Existing initiatives and projects
- 6.3.2 Main landowning bodies
- 6.3.3 Key Sites

6.4 **Key Actions** for Derby Area

6.5 **Key Targets** for Derby Area

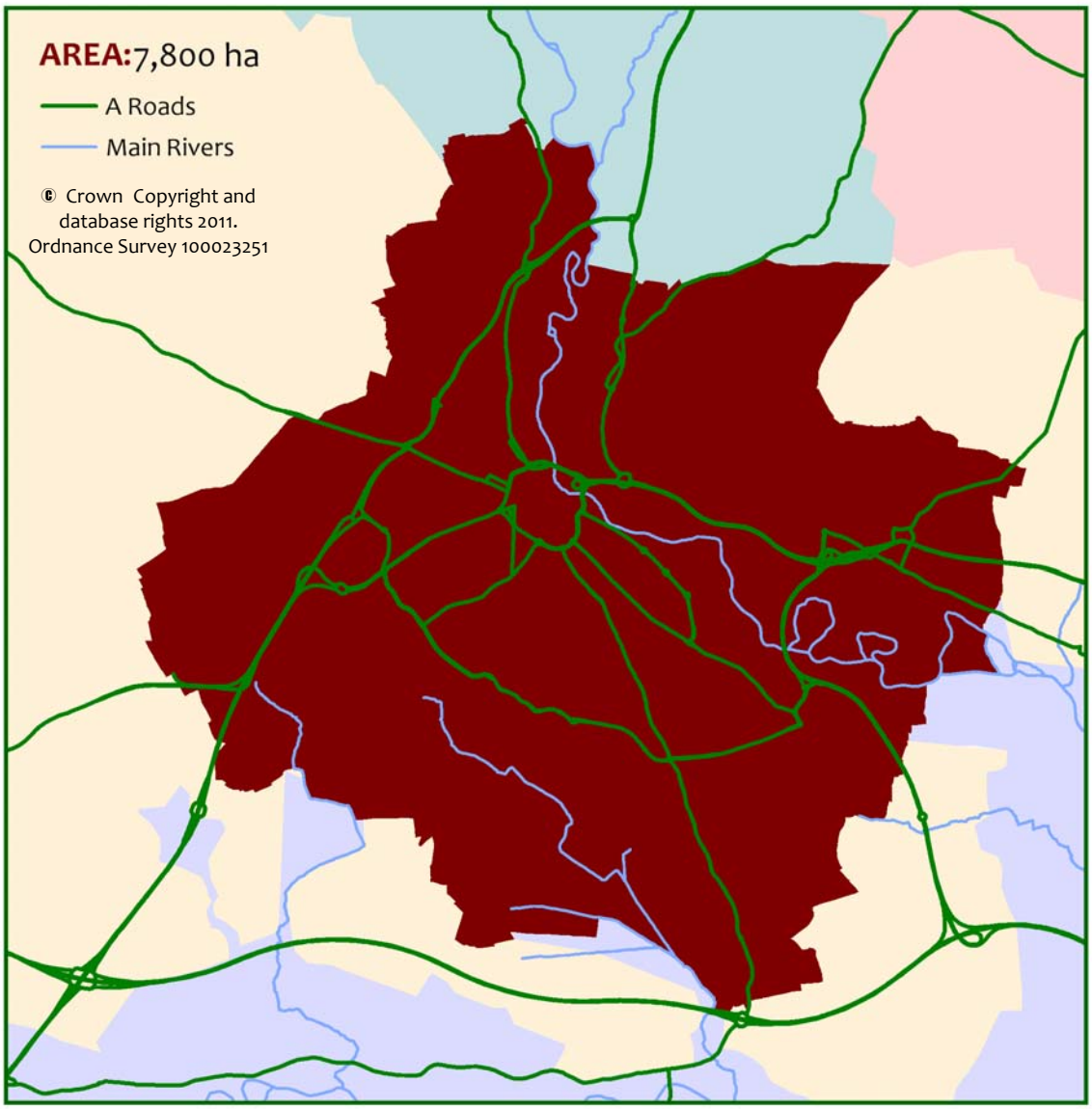
- 6.5.1 Targets for UK BAP Priority Habitats (with Target Table 6.1)
- 6.5.2 Targets for UK BAP Priority Species (with Target Table 6.2)

6.6 Appendix 1: Current Biodiversity Resources

- 6.6.1 UK BAP Habitat Resources
- 6.6.2 UK BAP Species Resources (with Species List Table 6.3)
- 6.6.3 Organisational and Manpower Resources

6.7 Appendix 2: Achievements to Date

6. Derby Area
- ACTION PLAN -



Map of Derby Action Area
For further detail see Maps section

6.1 Area Description:

Three quarters of this area is covered by built development. Derby City is located at the junction of a number of landscape character areas and as a result maintains many remnant habitats throughout its green wedges and open spaces. Woodland and trees are evident to the north of Derby as an extension to the Peak Fringe landscape and important veteran trees are found at Markeaton and Allestree Parks. The River Derwent provides an important habitat corridor into the city centre with associated wetland and grassland linking in the south to other similar habitats associated with the Trent valley.

The area includes one Sites of Special Scientific Interest, which is

designated for its geological importance, 4 other RIGS, 10 Local Nature Reserves, 62 LWS and a number of potential Local Wildlife Sites.
See section 6.3.3 for a list of key sites in the Derby area .

This Action Area is defined by the City of Derby administrative boundary.

6.2 Vision

An area where all people have access to and value their wildlife rich environment close to where they live and work. This is provided by an interlinking green infrastructure system having the River Derwent at its spine. Open land will be sustainably managed for people and wildlife, new built development will play a part in delivering new and enhanced habitats.

6.3 The Challenges and Opportunities

Much of the priority habitat in Derby is fragmented in very small areas. Many have and will come under increasing pressure from development or by increased public access. A number of green areas could be managed better to optimise their value for wildlife including significant restoration opportunities using different management regimes.

Of the 62 Local Wildlife Sites designated in the City, 43 (69%) are considered to be in favourable or a recovering condition. Opportunities exist through development proposals, project work and providing advice for owners to increase this figure throughout the plan period.

There are a number of landscape projects which include part of Derby within their areas and are likely to deliver some biodiversity targets within the plan period. These projects are listed below. Further large-scale re-development on the Celanese site may also include habitat creation and management of existing habitats. Additional opportunities should be sought via development proposals to manage the current resource.

6.3.1 Existing initiatives and projects

The **WildDerby Project**, co-ordinated by Derby City Council, works with a number of different organisations, including many local community groups to deliver conservation projects and raise awareness of biodiversity through events and education.

WildDerby also works with the Derby City Pond Wardens Association on the Wild About Ponds project which runs from 2010-2013 and will see the creation and restoration of a number of key ponds within the city.

Part of Derby lies within the Derwent Valley World Heritage Site, which is the basis of the **Derwent Valley Landscapes Partnership Project**. This project aims to mange existing woodland, grassland and wetland habitats, restore them where necessary and create appropriate habitats to maintain the key wildlife

corridor through the valley.

The River Derwent also falls within one of **Derbyshire Wildlife Trusts Living Landscapes Schemes**. These are areas where Derbyshire Wildlife Trust has identified areas for key habitats and species and will develop projects and use opportunities to strengthen and expand, where possible, the biodiversity resource.

The Markeaton Brook within Derby falls within the **Markeaton and Mercaston Brook Project** which is working on enhancing the river habitats of the catchment.

6.3.2 Main landowning bodies

Derby City Council owns the majority of key sites and open space within the City. Other owners of large important sites include Severn Trent Water, Celanese and Rolls Royce plus riparian owners of the River Derwent and main tributaries.

6.3.3 Key Sites

The key sites in the Derby Action Area are:

- **SSSIs:** Boulton Moor SSSI
- **LNRs:** Allestree Park LNR, Chaddesden Wood LNR, Chellaston Brickworks LNR, Darley and Nutwood LNR, Elm Wood LNR, Mickleover Meadows LNR, Sinfin Moor LNR, Sunnydale Park LNR, The Sanctuary LNR, West Park Meadows LNR
- **Others:** Accordis Lagoons, Chaddesden Park, Darley Park, Markeaton Brook, Markeaton Park, Sturgess Fields, River Derwent Sewage Farm Lagoon and Derwent Meadows.

West Park Meadows LNR.
Credit: Debbie Alston

6.4 KEY ACTIONS for the Derby area.

1. The **primary habitat objective** within the Derby action area is the maintenance, restoration and expansion of any semi-natural habitat to achieve targets in Table 6.1 below

2. The **secondary objective** is to increase connectivity of semi-natural habitats to create larger habitat complexes using priority habitats wherever possible. Habitat creation, through development, will be key to achieving this objective.

3. Work with owners of three golf courses to develop and work towards the achievement of a site biodiversity management plan by 2020.

4. Work with the staff and pupils of five secondary schools to develop and work towards the achievement of biodiversity management plans. Schools should be prioritised where they either include, or are adjacent to, Local Wildlife Sites.

5. Investigate and develop one ark site for white-clawed crayfish.

Full targets for all Priority Habitats and Species are listed in Tables 6.1 and 6.2
All actions listed in the separate **Generic Action Plan** also apply to this area.

6.5 KEY TARGETS for the Derby area.

6.5.1 Targets for UK BAP PRIORITY HABITATS

Table **6.1** below lists the specific habitat targets for the Derby action area. The requirements of UK BAP reporting mean that our own LBAP targets need to be presented as cumulative figures. The meaning of each column is explained below the table. See Maps section for the distribution of primary habitat features in this Action Area.

UK BAP Priority Habitat	(1) Current Extent at 2011 (i.e. Maintenance* Target to 2020)	Targets for 2011-2020		
		(2) Manage*	(3) Restore*	(4) Expand*
Primary feature:				
Floodplain grazing marsh	99 ha	99 ha	n/a	9 ha
Lowland mixed deciduous woodland	100 ha	90 ha	n/a	1 ha
Wood-pasture and parkland	3 sites	3 sites	n/a	n/a
Ponds	>90 ponds	65 ponds	15 ponds	20 ponds
Rivers and streams	Unknown #			
Secondary feature:				
Lowland meadow	7 ha	7 ha	90 ha	1 ha
Hedgerow	187 km	additional 5 km	n/a	1 km
Swamp	13	13	n/a	n/a
Wet woodland	5	4	n/a	2
Open Mosaic habitats	Unknown∞			
Localised feature:				
Lakes	3 sites	3 sites	n/a	n/a
Lowland calcareous grassland	0.2 ha	0.2 ha	2 ha	n/a

Lowland dry acid grassland	1 ha	1 ha	2 ha	n/a
Traditional orchards	4 sites	4 sites	n/a	n/a
Green roofs [@]				20 roofs

Table 6.1 Targets for the Derby Action Area 2011-2020.

[*]Table explanation:
Terminology and measurements are the same as those used in the UK Biodiversity Action Plan (UK BAP). These are:

(1) ***'Maintenance'***–this is the current 2011 resource of each Priority Habitat, irrespective of condition and management that we must, *at the very least,* keep and carry forward into the next plan period after 2020. (i.e. no net loss.)
(2) ***'Manage'*** – The amount of Priority Habitat in (1) that we want to be under appropriate management to maintain in **'favourable'** condition. This is a cumulative target, continuing on from the previous plan period.
(3) ***'Restore'*** – Habitat which is not in a **'favourable'** condition, but which is under restorative management to bring it up to that condition. This is a cumulative target, continuing on from the previous plan period.
(4) ***'Expand'*** – New habitat created from scratch. This could be on a new site or an extension to an existing one. The target is for this Plan Period, though some habitats, - such as woodland - take far longer to fully develop.

Notes to accompany Table 6.1

Habitat creation should be targeted wherever there are opportunities to link with existing habitats, and where the underlying ground conditions are suitable.

Hedgerow restoration and creation work should be targeted along existing networks where they are fragmented.

[#] **Rivers and streams** are an important part of the Derby Action Area, however, the resource is difficult to calculate and monitor against any set targets.

[∞] ***Open mosaic habitats*** the distribution of this habitat is not well understood at the start of this Plan Period (see Generic Action Plan). Its presence is, however, important in this area. It should be maintained in situ wherever possible, especially where it contributes to a wider network linking key habitats

[@]**Green roofs** Although not a UK Priority Habitat, the installation of green roofs on new developments and also on some existing urban structures can make a considerable contribution to biodiversity in towns and cities. For this reason they have been included in targets within the Derby area.

6.5.2 Targets for UK BAP PRIORITY SPECIES

There are 74 UK BAP Priority Species recorded within the Derby Action Area since 2000. The distribution and status of many of these species is not currently well known, and consequently it is not possible to set meaningful targets for them. However, there are other species about which we do know enough to be able to set targets, monitor and assess their success. These are shown below in Table 6.2

The full list of UK BAP Species for the Derby area is given in Table 6.3 (see Section 6.6.2)

UK BAP Priority Species	Range targets to 2020 (1km^2)	Range expansion targets 2011-2020 (1km^2)	Method of expansion
Great-crested newt	11	n/a	-
Otter	8	2	Appropriate Habitat enhancement
Water vole	11	1	Appropriate Habitat enhancement
White-clawed crayfish	3	1	Creation of 1 ark site
White-letter hairstreak	16	3	Appropriate Habitat enhancement

Table 6.2 Targets for UK BAP Species within the Derby Action Area.

Otters have been recorded in eight grid squares (8 x 1 km^2) since 1990. These are centred along the River Derwent, but are also known to have been recorded up the Markeaton Brook. **Target:** Increase range by two 1 km^2 by 2020.

Water Voles have been recorded in 11 grid squares (11 x 1 km^2) since 2000. Water Voles have come under increasing pressure from mink predation and lack of appropriate habitat management. Effort should be targeted to maintaining the existing populations of water voles by habitat management and, where appropriate, mink control. They have been regularly recorded along the Chaddesden Brook and old records exist from the Markeaton Brook. **Target:** Increase range by one 1 km^2 by 2020.

Great-crested newts have been recorded in 11 grid squares (11 x 1 km^2) since 1990. Great crested newts are confined almost exclusively to the outskirts of Derby with a population in Mickleover and one associated with the mitigation wetland of the A6 bypass. **Target:** Maintain range at 11 1 km^2 by 2020.

White-clawed crayfish have been recorded in three grid squares (3 x 1 km^2) since 2000. The remaining white-clawed crayfish population in Derby is associated with the Markeaton Brook catchment, however in recent years the population has

reduced in size and appears to be suffering from disease. It is thought that the development of an ark site (a safe site away from other water courses) within the city would help maintain a population within the city. **Target:** Increase range by one 1 km^2 by 2020.

The **White-letter hairstreak** butterfly has been recorded in 16 grid squares (16 x 1 km^2) since 1990. These are scattered throughout the city, and need elm trees to sustain a population. Additional strategic planting of suitable elm trees will help expand this species' range. **Target:** Increase range by three 1 km^2 by 2020.

Otter.
Credit: Debbie Alston

6.6 Current Biodiversity Resources

This list of resources within the Derby area has been divided into three parts:

6.6.1. UK BAP Priority Habitat Resources
6.6.2 UK BAP Priority Species Resources
6.6.3 Organisational and Manpower Resources

6.6.1 UK BAP Priority Habitat Resources

The figures below show the total amount of each Priority Habitat known to exist in the Derby area at the start of this Plan Period in 2011, with figures for sub-priority and newly created habitats where known.
Brief notes on their distribution within the area then follow.

Total area of the Derby region = **7,803 ha**
Total area of Priority biodiversity resource at start of Plan Period= **464 ha**
Percentage of Derby region containing Priority biodiversity resources = **5.9%**

Lowland Mixed Deciduous Woodland:		
	Ancient Semi-Natural Woodland =	13 ha
	Secondary =	74 ha
	Plantation =	13 ha
Wet Woodland:		5 ha
Wood pasture and parkland:	3 sites	243 ha
Traditional orchard:	(4 sites)	1 ha
Lowland Meadow:		7 ha
(Plus 115 ha of sub-priority and 1ha newly created)		
Lowland Calcareous Grassland:		0.2 ha
(Plus 2ha of sub-priority)		
Lowland Dry Acid Grassland:		0.8 ha
(Plus 2.1 ha of sub-priority)		
Floodplain Grazing marsh:		99 ha
Wetland:		
Ponds >90		
Lakes 3		8 ha
Swamp		13 ha
Hedgerows:		187 km

Location of Priority Habitats in the Landscape:

Primary features:

Rivers and streams: River Derwent and tributaries such as Markeaton Brook, Chaddesden Brook, and Bramble Brook.
Floodplain grazing marsh: Associated primarily with the River Derwent.
Lowland mixed deciduous woodland: Scattered throughout the City, Chaddesden Wood is the largest area of ancient woodland, most of the others are secondary.
Wood-pasture and parkland: Markeaton, Allestree and Darley Park are all landscaped parklands with many veteran trees.
Veteran trees: Scattered throughout the city, with a particular concentration within Oakwood.
Ponds: Widespread, but generally associated with publicly owned land, many new ponds have been created on the Local Nature Reserves.

Secondary features:

Lowland meadow: A small number of fragmented sites across the area.
Open mosaic: Brownfield sites exist throughout the City, many of which are allocated for development opportunities.
Hedgerows: Species-rich examples can be found on the edge of the area, a network of hedgerows also spread into the centre of the area.
Swamp: Associated with wetlands within floodplain areas.
Wet woodland: Two examples both associated with adjacent water courses.

Localised features:

Lowland calcareous grassland: Two sites, one on the former Mickleover railway line, the other a small area at Chellaston Brickworks.
Lowland dry acid grassland: One field at Allestree Park on the bunter sandstone.

Note: The terms Primary, Secondary or Localised feature used above are synonymous with 'Primary Habitat' etc. used in the Landscape Character of Derbyshire (2003) see www.derbyshire.gov.uk/landscape. These describe how noticeable and distinctive each habitat is within the landscape itself. Only Primary Features are shown in the detailed map of each Action Area in the Maps section.

6.6.2 UK BAP Priority Species Resources

Group	English Name
Amphibian	Great crested newt
Amphibian	Common toad
Reptile	Common lizard
Reptile	Grass snake
Reptile	Slow worm
Bird	Bullfinch
Bird	Corn bunting
Bird	Cuckoo
Bird	Curlew
Bird	Dunnock
Bird	Grasshopper warbler
Bird	Grey partridge
Bird	Hawfinch
Bird	Herring gull
Bird	House sparrow
Bird	Lapwing
Bird	Lesser spotted woodpecker
Bird	Linnet
Bird	Marsh tit
Bird	Reed bunting
Bird	Skylark
Bird	Song thrush
Bird	Spotted flycatcher
Bird	Starling
Bird	Tree pipit
Bird	Tree sparrow
Bird	Willow tit
Bird	Wood warbler
Bird	Yellow wagtail
Bird	Yellowhammer
Mammal	Brown hare
Mammal	Brown long-eared bat
Mammal	Harvest mouse
Mammal	Hedgehog
Mammal	Noctule
Mammal	Otter
Mammal	Polecat

Group	English Name
Mammal	Soprano pipistrelle
Mammal	Water vole
Butterfly	White letter hairstreak
Crustacean	White-clawed crayfish
Moth	Beaded chestnut
Moth	Blood-vein
Moth	Brindled beauty
Moth	Broom moth
Moth	Buff ermine
Moth	Centre-barred sallow
Moth	Dark spinach
Moth	Deep-brown dart
Moth	Dot moth
Moth	Dusky brocade
Moth	Dusky thorn
Moth	Garden dart
Moth	Ghost moth
Moth	Green-brindled crescent
Moth	Grey dagger
Moth	Latticed heath
Moth	Minor shoulder-knot
Moth	Mottled rustic
Moth	Mouse moth
Moth	Oak hook-tip
Moth	Powdered quaker
Moth	Rosy minor
Moth	Rosy rustic
Moth	Shaded broad-bar
Moth	Shoulder-striped wainscot
Moth	Small emerald
Moth	Small phoenix
Moth	Small square-spot
Moth	The cinnabar
Moth	The rustic
Moth	The sallow
Moth	The spinach
Moth	White ermine

Table 6.3 UK BAP Priority Species known to be present within the Derby area since 2000 (74 species)

6.6.3 Organisational and Manpower Resources

Below is a list of organisations that are key to delivering the actions and targets in the Derby area. Reference should also be made to the table in the Generic Action Plan.

Statutory Agencies
Environment Agency*
Forestry Commission*
Natural England *

Voluntary organisations
BTCV *
Derbyshire Wildlife Trust *
Groundwork Derby and Derbyshire *

Local and Community Groups
Darley and Nutwood Management Group *
Derby City Pond Wardens Association *
Derby Natural History Society
Derby RSPB Group *
Derwent Green Gym *
Friends of Allestree Park *
Friends of Alvaston Park
Friends of Chaddesden Wood
Friends of Chellaston Brickworks *
Friends of Chaddesden Park *
Friends of Markeaton Brook*
Friends of Markeaton Park *
Friends of Mickleover Meadow *
Friends of Sinfin Moor
Sustrans Rangers
West Park Meadows Working Party

Local Authorities
Derby City Council *

Other Landowning bodies
Goodman
Lafarge
Private landowners and farmers
Severn Trent Water
Schools
Homeowners (for UK BAP species in gardens)
University Of Derby

* indicates Lowland Derbyshire Biodiversity Partnership member.
If your group or organisation would like to join the Partnership, go to www.derbyshirebiodiversity.org.uk

Hedge laying.
Credit: BTCV

6.7 Achievements to Date in the Derby area

Figures are based on Nov 2011 data and rounded to nearest hectare

Woodland

81 ha (90 % of the target) of Lowland Mixed Deciduous Woodland was considered to be under management (in an agri-environmental scheme or assessed as favourable or recovering condition)

Wood pasture and parkland

3 wood-pasture and parkland sites (100 % of the area resource) were considered to be under management (in an agri-environmental scheme or assessed as favourable or recovering condition)

Lowland Meadow

7 ha (100 % of the target) of priority Lowland Meadow was considered to be under management (in an agri-environmental scheme or assessed as favourable or recovering condition)

72 ha (80 % of the target) of sub-priority Lowland Meadow was considered to be under restoration (in an agri-environmental scheme or assessed as 'favourable' or 'recovering' condition), looking to bring the habitat condition up to priority status.

Lowland Dry Acid Grassland

0.8 ha (100 % of the target) of priority Dry Acid Grassland was considered to be under management (in an agri-environmental scheme or assessed as favourable or recovering condition)

0 ha (0 % of the target) of sub-priority Dry Acid Grassland was considered to be under restoration (in an agri-environmental scheme or assessed as 'favourable' or 'recovering' condition), looking to bring the habitat condition up to priority status.

Lowland Calcareous Grassland

0.2 ha (100 % of the target) of priority Dry Calcareous Grassland was considered to be under management (in an agri-environmental scheme or assessed as favourable or recovering condition)

0 ha (0 % of the target) of sub-priority Dry Calcareous Grassland was considered to be under restoration (in an agri-environmental scheme or assessed as 'favourable' or 'recovering' condition), looking to bring the habitat condition up to priority status.

Wetland

20 ponds (31% of the target) are currently under management

3 lakes (100% of the target) are currently under management

13 ha of swamp (100% of the target) are currently under management

Current Agri-environment Schemes:

There are currently no agri-environment schemes in this Action Area

7

Trent and Dove Valleys Area Action Plan

Lowland Derbyshire LBAP

River Dove. Credit: Debbie Alston

Prepared by the Lowland Derbyshire Biodiversity Partnership

This document is part of the Lowland Biodiversity Action Plan 2011-2020

Trent and Dove Valleys Area

Contents

Map of Trent and Dove Valleys Action Area

7.1 Area Description

7.2 Vision

7.3 The Challenges and Opportunities

- 7.3.1 Existing initiatives and projects
- 7.3.2 Main landowning bodies
- 7.3.3 Key Sites

7.4 **Key Actions** for Trent and Dove Valleys Area

7.5 **Key Targets** for Trent and Dove Valleys Area

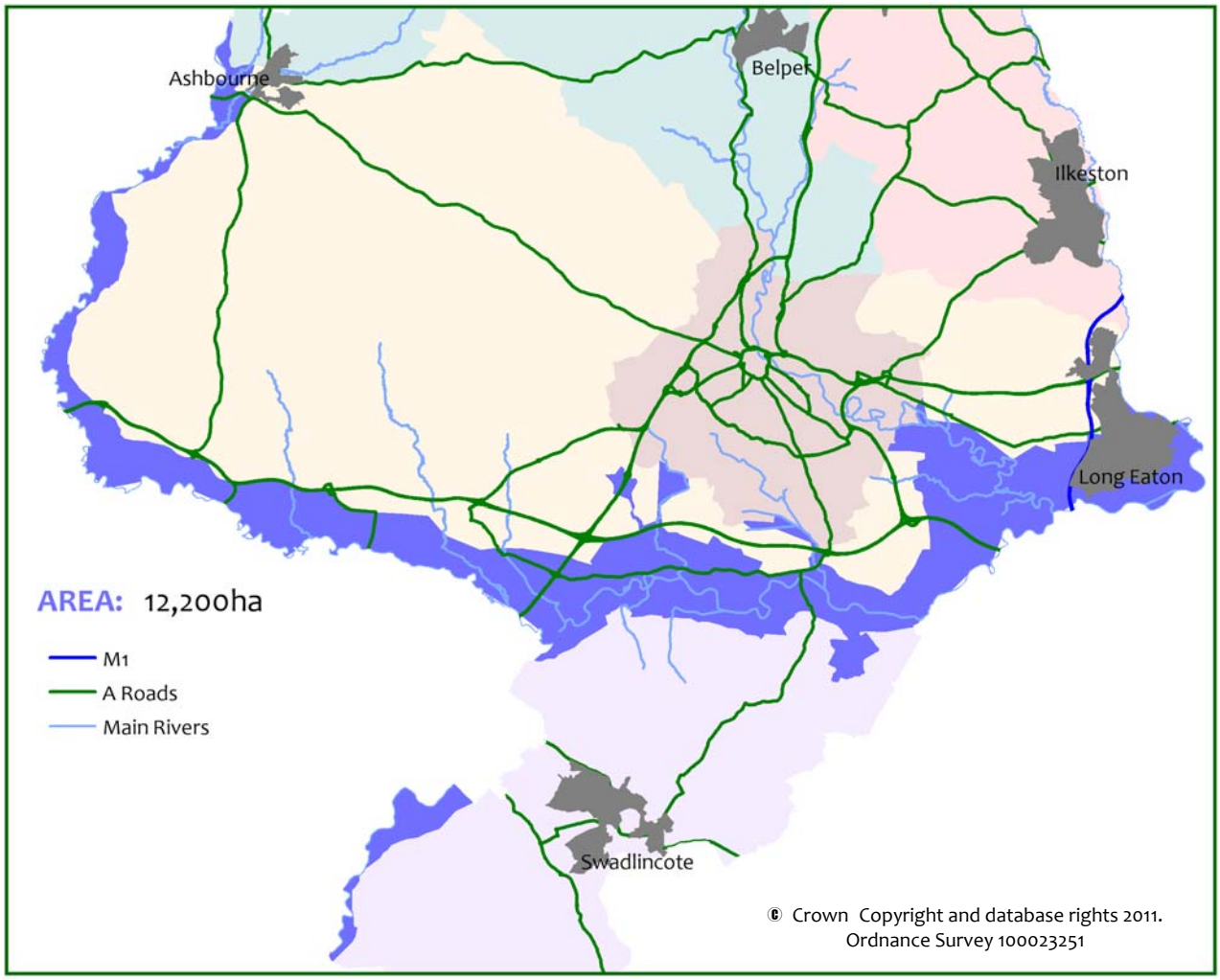
- 7.5.1 Targets for UK BAP Priority Habitats (with Target Table 7.1)
- 7.5.2 Targets for UK BAP Priority Species (with Target Table 7.2)

7.6 Appendix 1: Current Biodiversity Resources

- 7.6.1 UK BAP Habitat Resources
- 7.6.2 UK BAP Species Resources (with Species List Table 7.3)
- 7.6.3 Organisational and Manpower Resources

7.7 Appendix 2: Achievements to Date

7. Trent and Dove Valleys Area
- ACTION PLAN –



Map of Trent and Dove Valleys Action Area

For further detail see Maps section

7.1 Area Description:

This is a mixed farming landscape associated with the floodplains of the rivers Trent and Dove although grassland habitat is more prevalent within the Dove valley. The landform is flat to gently rolling and is characterised by areas of pasture and semi-improved flood meadows enclosed by predominantly hawthorn hedgerows. Willow pollards, wet woodland and scrub are locally distinctive sitting alongside gravel pits and other industrial development particularly within the Trent valley. The meandering river channel, flood meadow and numerous flooded gravel pits and other man-made lakes influences the character of the area.

The area does not include any SSSIs, but does include four Local Nature Reserves, 3 RIGS, 84 Local Wildlife Sites and a number of potential Local Wildlife Sites.

The Trent and Dove Valleys area comprises five Derbyshire Landscape Character Types:

- Riverside Meadows
- Settled Farmlands
- Lowland Village Farmlands
- Estate Farmlands
- Wet Pasture Meadows

Use the Derbyshire County Council online mapping system to view Landscape Character Types within this Lowland Derbyshire LBAP area. www.derbyshire.gov.uk/maps

This Action Area includes the settlements of Doveridge, Sudbury, Hatton, Willington, Melbourne, Shardlow and Long Eaton.

7.2 Vision

A rich diversity of wetland habitats linked by river corridors restored to a more natural condition, and flanked by farmland rich in wildlife.

7.3 The Challenges and Opportunities

The Trent Valley has a long history of aggregate extraction, which has left a legacy of large open water bodies and associated wetlands, many of which are now of significant value for wildlife. Some of these are already managed as nature reserves and others will be restored for conservation under planning obligations. Some long-standing applications for new schemes/extensions are yet to be determined, but if approved could deliver targets within the LBAP period. However there are constraints to the east of the area due to the proximity of East Midlands Airport. The closure of power stations at Willington and Drakelow also presents potential opportunities for habitat creation in association with new development.

There is, however, a need for a more strategic approach to site restoration which aims to link sites through the river corridors where possible, and takes into account the needs of priority species and the function of the valleys as important migratory and dispersal routes, linking the Trent lowlands with the uplands of the Peak District. Much of the area is high quality agricultural land and has become more intensively farmed in recent decades, with an increase in arable and field drainage. This has lead to the loss and fragmentation of priority habitats, especially grassland.

The Trent is a highly modified river, and has been extensively used for navigation and water supply. The Dove retains more of its natural features, although there are weirs which present barriers to migratory fish. In both river valleys areas of floodplain have been impounded and detached from the river system for flood defence and/ or agriculture. However the recent shift in

national policy towards the restoration of rivers and floodplains, and the creation of new wetlands for flood management presents opportunities for biodiversity gain.

Only part of the Trent falls within Derbyshire, and the Dove for most of its length forms the Derbyshire/ Staffordshire border. A strategic approach to conservation working across administrative boundaries is therefore essential, mediated through such bodies as the OnTrent Partnership and Central Rivers Initiative.

The area includes 84 Local Wildlife Sites, only 29 of which (35%) are in favourable or recovering condition. The main reasons for unfavourable condition are associated with the presence of non-native species in woodlands and lack of appropriate management in grasslands.

7.3.1 Existing initiatives and projects

The **OnTrent Partnership** is a project involving a wide range of public, voluntary and commercial organisations. It is working to secure a sustainable balance between the natural and historic heritage, agriculture, commercial activity and development along the River Trent.

The **Central Rivers Initiative** is a partnership project, the area for which includes the Derbyshire Trent to the west of Willington. The aim of the project is to deliver strategic wetland creation and enhancement by influencing mineral restoration schemes.

The Trent and Dove Valleys are both Derbyshire Wildlife Trust **Living Landscape Areas**. The Trust is currently developing a project to deliver strategic wetland creation in the Trent, Dove and Derwent Valleys as a successor to its Water for Wildlife project which has worked with many land managers in the Dove and Derwent.

Derbyshire Wildlife Trust's **Transforming the Trent Valley** Accreditation Scheme encourages landowners to pledge to enhance biodiversity on their land. Toyota were the first to achieve accreditation for their Burnaston plant in 2010.

The Trent Valley has been identified by RSPB as a **Futurescape** area.

The Erewash **Greenprint document** covers parts of this area. These documents are mini biodiversity action plans setting actions and targets for the local authority areas.

7.3.2 Main landowning bodies

Much of the land within the northern and eastern part of Trent valley is within mineral operator's ownership. The Church Commissioners own much of the land within the southern part of the Trent Valley. The Dove valley is largely within the ownership of private landowners.

7.3.3 Key Sites

The key sites in Trent and Dove Valleys Action Area are:

- **LNRs:** Elvaston Castle LNR, Forbes Hole LNR, Fox Covert LNR and St Chads LNR
- **Others:** Attenborough West Gravel Pits, Barrow Gravel Pits, Dovecliffe Ponds, Drakelow Nature Reserve, Golden Brook Storage Lagoon Nature Reserve, Marston Crossing Oxbow, Sawley Carr, Swarkestone Gravel Pits, The Wiggs and Cliffe House Plantation, Toyota Balancing Ponds, Trent and Mersey Canal, Willington Gravel Pits Nature Reserve, Witches Oak Waters.

Witches Oak Water.
Credit: Glynis Foster

7.4 KEY ACTIONS for the Trent and Dove Valleys area.

1. The **primary habitat objective** within the Trent and Dove Valleys area is the maintenance, restoration and expansion of wetlands including floodplain grazing marsh, reedbed, wet woodland, lakes, swamp and fen, forming where possible a connected network to achieve targets in Table 7.1 below

2. The **secondary objective** is to increase connectivity of semi-natural habitats to create larger habitat complexes using priority habitats wherever possible and be reconnected with the river. New hedgerows, arable field margins and, in particular, management of watercourses will be key to achieving this objective.

3. Develop a project to engage with minerals operators and land managers with the aim of creating a strategic network of functionally linked wetland habitats.

4. Target renewing Entry Level Stewardship agreement holders to include appropriate actions for farmland birds, hedgerows and field margins.

5. Continue strategic mink control on the Dove to safeguard nationally important populations of water vole, as well as benefiting other species.

Full targets for all Priority Habitats and Species are listed in Tables 7.1 and 7.2
All actions listed in the separate **Generic Action Plan** also apply to this area.

7.5 KEY TARGETS for the Trent and Dove Valleys area.

7.5.1 Targets for UK BAP PRIORITY HABITATS

Table 7.1 below lists the specific habitat targets for the **Trent and Dove Valleys** area. The requirements of UK BAP reporting mean that our own LBAP targets need to be presented as cumulative figures. The meaning of each column is explained below the table. See Maps section for the distribution of primary habitat features in this Action Area.

UK BAP Priority Habitat	(1) Current Extent at 2011 (i.e. Maintenance* Target to 2020)	Targets for 2011-2020		
		(2) Manage*	(3) Restore*	(4) Expand*
Primary feature:				
Lowland meadow	6 ha	6 ha	30 ha	14 ha
Field Margins	unknown	30 ha ∞		
Reedbed	46 ha	35 ha	n/a	15 ha
Wet woodland	61 ha	55 ha	n/a	8 ha
Lakes and canals	31	28	n/a	n/a
Ponds	>150 ponds	60 ponds	20 ponds	25 ponds
Rivers and streams	Unknown #			
Floodplain Grazing Marsh	132 ha	95 ha	n/a	30 ha
Secondary feature:				
Hedgerows	unknown	additional 5 km	n/a	10 km
Lowland mixed deciduous woodland	190 ha	140 ha	n/a	18 ha
Lowland Swamp	16 ha	15 ha	n/a	5 ha
Localised feature:				

Traditional orchard	21 sites	10 sites	n/a	1 site
Rush Pasture	4 ha	4 ha	5 ha	5 ha
Lowland Dry Acid Grasslands	2 ha	2 ha	2 ha	n/a

Table 7.1 Targets for the Trent and Dove Valleys Action Area 2011-2020.

*Table explanation:
Terminology and measurements are the same as those used in the UK Biodiversity Action Plan (UK BAP). These are:

(1) ***'Maintenance'***–this is the current 2011 resource of each Priority Habitat, irrespective of condition and management that we must, *at the very least,* keep and carry forward into the next plan period after 2020. (i.e. no net loss.)
(2) ***'Manage'*** – The amount of Priority Habitat in (1) that we want to be under appropriate management to maintain in 'favourable' condition. This is a cumulative target, continuing on from the previous plan period.
(3) ***'Restore'*** – Habitat which is not in a 'favourable' condition, but which is under restorative management to bring it up to that condition. This is a cumulative target, continuing on from the previous plan period.
(4) ***'Expand'*** – New habitat created from scratch. This could be on a new site or an extension to an existing one. The target is for this Plan Period, though some habitats, - such as woodland - take far longer to fully develop.

Notes to accompany Table 7.1

Opportunities for habitat creation and restoration are going to be largely confined to land restoration associated with mineral extraction, these should be appropriate to underlying ground conditions and future management of habitats should be secured throughout.

Rivers and streams are an important part of the Trent and Dove Valleys Action Area, however, the resource is difficult to calculate and monitor against any set targets.

∞ **Field Margins** It is not possible to set separate targets for management, restoration or expansion. A single overall target for simply increasing this resource is provided. Figures can only be based on Entry Level Stewardship monitoring. Further habitat may also be provided through Living Bird Table initiatives.

Note: The terms Primary, Secondary or Localised feature used above are synonymous with 'Primary Habitat' etc. used in the Landscape Character of Derbyshire (2003) see www.derbyshire.gov.uk/landscape. These describe how noticeable and distinctive each habitat is within the landscape itself. Only Primary Features are shown in the detailed map of each Action Area in the Maps section.

7.5.2 Targets for UK BAP PRIORITY SPECIES

There are 90 UK BAP Priority Species recorded within the Trent and Dove Valleys Action Area since 2000. The distribution and status of many of these species is not currently well known, and consequently it is not possible to set meaningful targets for them. However, there are other species about which we do know enough to be able to set targets, monitor and assess their success. These are shown below in Table 7.2

The full list of UK BAP Species for the Trent and Dove Valleys area is given in Table 7.3 (see Section 7.6.2)

UK BAP Priority Species	Range targets to 2020 ($1km^2$)	Range expansion targets 2011-2020 ($1km^2$)	Method of expansion
Great-crested newt	4	1	Targeted pond creation
Otter	55	2	Appropriate Habitat enhancement
Water vole	4	4	Appropriate habitat enhancement strategic mink control and

Table 7.1 Targets for UK BAP Species within the Trent and Dove Valleys Action Area.

Otters have been recorded in 55 grid squares (55 x 1 km^2) since 1990, and are regularly recorded on both the Dove and Trent with evidence of breeding. **Target:** Increase range by two 1 km^2 by 2020

Water Voles have been recorded in four grid squares (4 x 1 km^2) since 2000, with some evidence of expansion on the Dove. Mink control is ongoing on the Dove, coordinated by DWT. **Target:** Increase range by four 1 km^2 by 2020

Great-crested newts have been recorded in four grid squares (4 x 1 km^2) since 1990. **Target:** Increase range by one 1 km^2 by 2020

Great Crested Newt.
Credit: Lofaesofa (Creative Commons)

7.6 Current Biodiversity Resources

This list of resources within the Trent and Dove Valleys area has been divided into three parts:

7.6.1. UK BAP Priority Habitat Resources
7.6.2 UK BAP Priority Species Resources
7.6.3 Organisational and Manpower Resources

7.6.1 UK BAP Priority Habitat Resources

The figures below show the total amount of each Priority Habitat known to exist in the Trent and Dove Valleys area at the start of this Plan Period in 2011. Figures for sub-priority and newly created habitats are given if known. Brief notes on their distribution within the area then follow.

Total area of the Trent and Dove Valleys region = **12,211 ha**
Total area of Priority biodiversity resource at start of Plan Period = **576 ha**
Percentage of Action Area containing this biodiversity resource = **4.7%**

Lowland Deciduous Mixed Woodland:

Ancient Semi-Natural Woodland =	7 ha
Secondary=	129 ha
Plantation =	54 ha

Wet Woodland: 61 ha

Traditional Orchard: (21 sites) 2 ha

Lowland meadow: 6 ha
(Plus 61 ha of sub-priority and 7 ha of newly created)

Lowland dry acid grassland: 2 ha
(Plus 3 ha sub-priority)

Rush-pasture: (4 ha newly created)

Wetland:

Ponds: >150 ponds	
Lakes: 31 lakes and one canal	255 ha
Reedbed: (including 20ha of newly planted reedbed)	46 ha
Swamp:	16 ha

Location of Priority Habitats in the Landscape:

Primary features:

Rivers and streams: Main rivers are the Dove and Trent and the lower reaches of the River Derwent, where it joins the Trent with some important tributaries including the Hilton brook.
Wet woodland: This is the most important area in the LBAP area for this habitat, it occurs in narrow bands lining the River Trent, in old ox-bows and along its tributaries.
Field margins: Widespread across the area.
Floodplain grazing marsh: Concentrated along the River Trent and Dove, especially where the main channel has not been modified.
Reedbeds: This is the most important area for this habitat in the LBAP area, which mainly occurs in association with former gravel extraction sites.
Lowland meadows: Rare habitat concentrated in the Long Eaton and Willington areas.
Lakes and canals: Lakes associated primarily with the former gravel extraction sites and water storage, Trent and Mersey Canal flows in this area from Egginton to Great Wilne.
Ponds: Scattered throughout the area; most are fished.

Secondary features:

Lowland mixed deciduous woodlands: Mostly small secondary and recently planted woodlands scattered across the area, but not within the immediately river corridors.
Veteran trees: Widespread across the area
Hedgerows: Widespread across the area
Lowland swamp: Associated with large wetland complexes in the immediate floodplain area.

River Dove.
Credit: Debbie Alston

7.6.2 UK BAP Priority Species Resources

Group	English Name
Amphibian	Great crested newt
Plant	*see footnote*
Amphibian	Common toad
Reptile	Common lizard
Reptile	Grass snake
Reptile	Slow worm
Fish	Atlantic salmon
Fish	Brown trout
Fish	Eel
Bird	Bullfinch
Bird	Corn bunting
Bird	Cuckoo
Bird	Curlew
Bird	Dunnock
Bird	Grasshopper warbler
Bird	Grey partridge
Bird	Herring gull
Bird	Hawfinch
Bird	House sparrow
Bird	Lapwing
Bird	Lesser redpoll
Bird	Lesser spotted woodpecker
Bird	Linnet
Bird	Marsh tit
Bird	Reed bunting
Bird	Skylark
Bird	Song thrush
Bird	Spotted flycatcher
Bird	Starling
Bird	Tree pipit
Bird	Tree sparrow
Bird	Twite
Bird	Turtle dove
Bird	Willow tit
Bird	Wood warbler
Bird	Yellowhammer
Bird	Yellow wagtail
Mammal	Brown hare
Mammal	Brown long-eared bat
Mammal	Harvest mouse
Mammal	Hedgehog
Mammal	Noctule
Mammal	Otter
Mammal	Polecat
Mammal	Soprano pipistrelle
Mammal	Water vole

Group	English Name
Butterfly	Small heath
Butterfly	Wall
Butterfly	White letter hairstreak
Moth	Autumnal rustic
Moth	Beaded chestnut
Moth	Blood-vein
Moth	Brindled beauty
Moth	Brown-spot pinion
Moth	Buff ermine
Moth	Centre-barred sallow
Moth	Dark spinach
Moth	Dark-barred twin-spot carpet
Moth	Deep-brown dart
Moth	Dot moth
Moth	Double dart
Moth	Dusky brocade
Moth	Dusky thorn
Moth	Dusky-lemon sallow
Moth	Feathered gothic
Moth	Garden dart
Moth	Garden tiger
Moth	Ghost moth
Moth	Green-brindled crescent
Moth	Grey dagger
Moth	Large nutmeg
Moth	Latticed heath
Moth	Minor shoulder-knot
Moth	Mottled rustic
Moth	Mouse moth
Moth	Oak hook-tip
Moth	Pale eggar
Moth	Powdered quaker
Moth	Rosy minor
Moth	Rosy rustic
Moth	Shaded broad-bar
Moth	Shoulder-striped wainscot
Moth	Small emerald
Moth	Small phoenix
Moth	Small square-spot
Moth	The cinnabar
Moth	The crescent
Moth	The rustic
Moth	The sallow
Moth	The spinach
Moth	White ermine

Table 7.3 UK BAP Priority Species present in the Trent and Dove Valleys area since 2000 (90 species)

Note: Grass-wrack Pondweed occurs just 200m beyond this Action Area in Staffordshire, at a site formerly within the county of Derbyshire. Another site is known from Leicestershire, close to the confluence of the Trent and Derwent.

7.6.3 Organisational and Manpower Resources

Below is a list of organisations that are key to delivering the actions and targets in the Trent and Dove Valleys area. Reference should also be made to the table in the Generic Action Plan.

Statutory Agencies

Environment Agency *
Forestry Commission *
Natural England *

Voluntary organisations

BTCV *
Central Rivers Initiative
Derbyshire Wildlife Trust *
FWAG *
Groundwork Derby and Derbyshire *
On Trent Partnership
RSPB *

Local and Community Groups

Dove Valley Community Project *
Findern Footpaths Group *
Friends of Forbes Hole *
Long Eaton Natural History Society *

Local Authorities (including Town and Parish Councils)

Derbyshire County Council *
Derbyshire Dale District Council *
Erewash Borough Council *
South Derbyshire District *

Aston upon Trent Parish Council
Barrow upon Trent Parish Council
Breaston Parish Council
Burnaston Parish Council
Clifton and Compton Parish Council
Doveridge Parish Council*
Drakelow Parish Council
Draycott and Church Wilne Parish Council
Egginton Parish Council
Elvaston Parish Council
Findern Parish Council*
Foremark Parish Council
Foston and Scropton Parish Council
Hatton Parish Council
Hilton Parish Council
Hoon Parish Council
Ingleby Parish Council
Mapleton Parish Council
Marston Montgomery Parish Council
Marston on Dove Parish Council
Melbourne Parish Council
Newton Solney Parish Council*
Norbury and Roston Parish Council
Ockbrook and Borrowash Parish Council
Offcote and Underwood Parish Council
Repton Parish Council*
Sawley Parish Council
Shardlow and Great Wilne Parish Council
Snelston Parish Council
Stanton by Bridge Parish Council
Sudbury Parish Council
Swarkestone Parish Council
Twyford and Stenson Parish Council
Walton upon Trent Parish Council
Weston upon Trent Parish Council
Willington Parish Council*

Other Landowning bodies

Cemex
Church Commissioners
Lafarge
Hanson
Tarmac
Private landowners and farmers
Severn Trent Water *
Homeowners (for UK BAP species in gardens)

* indicates Lowland Derbyshire Biodiversity Partnership member.
If your group or organisation would like to join the Partnership, go to www.derbyshirebiodiversity.org.uk

7.7 Achievements to Date in Trent and Dove Valleys area

Figures are based on Nov 2011 data and rounded to nearest hectare

Woodland

109 ha (78% of the target) of lowland Mixed Deciduous Woodland was considered to be under management (in an agri-environmental scheme or assessed as favourable or recovering condition)

Wet Woodland

38 ha (69% of the target) of Wet Woodland was considered to be under management (in an agri-environmental scheme or assessed as favourable or recovering condition)

Lowland Meadow

5 ha (83 % of the target) of priority Lowland Meadow was considered to be under management (in an agri-environmental scheme or assessed as favourable or recovering condition)

10 ha (33 % of the target) of sub-priority Lowland Meadow was considered to be under restoration (in an agri-environmental scheme or assessed as 'favourable' or 'recovering' condition), looking to bring the habitat condition up to priority status.

Lowland Dry Acid Grassland

1 ha (50 % of the target) of priority Dry Acid Grassland was considered to be under management (in an agri-environmental scheme or assessed as favourable or recovering condition)

0 ha (0 % of the target) of sub-priority Dry Acid Grassland was considered to be under restoration (in an agri-environmental scheme or assessed as 'favourable' or 'recovering' condition), looking to bring the habitat condition up to priority status.

Wetland

30 ponds (50% of the target) are currently under management

21 lakes and canals (75& of the target) are currently under management

13 ha under mature Reedbed (37% of the target) are currently under management

14 ha of swamp (93% of the target) are currently under management or restoration

Current Agri-environment Schemes:

1 Higher Level Stewardship Scheme

3 Countryside Stewardship Schemes

8

National Forest Area Action Plan

Lowland Derbyshire LBAP

View towards Robin Wood. Credit: Derbyshire County Council

Prepared by the Lowland Derbyshire Biodiversity Partnership

This document is part of the Lowland Biodiversity Action Plan 2011-2020

National Forest Area

Contents

Map of National Forest Action Area

8.1 Area Description

8.2 Vision

8.3 The Challenges and Opportunities

- 8.3.1 Existing initiatives and projects
- 8.3.2 Main landowning bodies
- 8.3.3 Key Sites

8.4 **Key Actions** for National Forest Area

8.5 **Key Targets** for National Forest Area

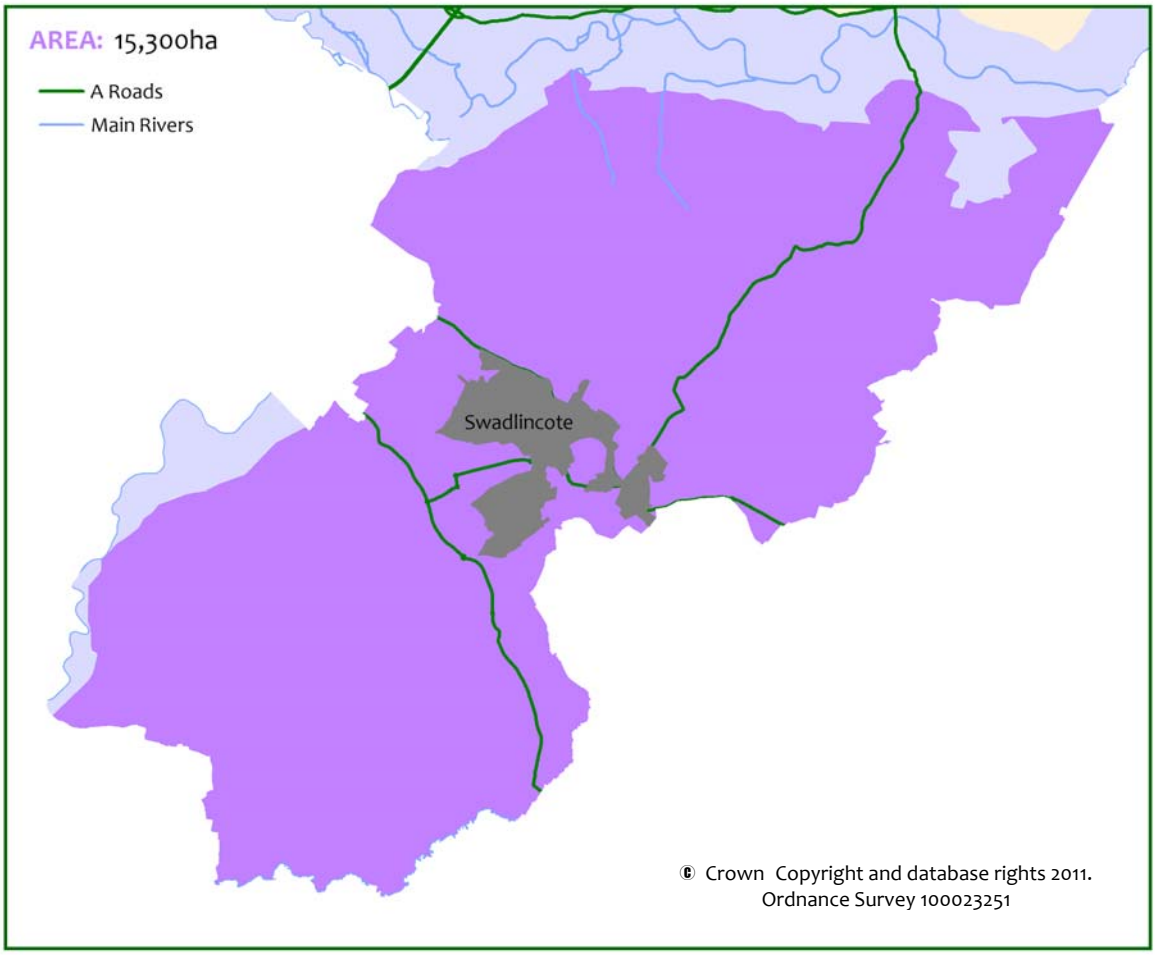
- 8.5.1 Targets for UK BAP Priority Habitats (with Target Table 8.1)
- 8.5.2 Targets for UK BAP Priority Species (with Target Table 8.2)

8.6 Appendix 1: Current Biodiversity Resources

- 8.6.1 UK BAP Habitat Resources
- 8.6.2 UK BAP Species Resources (with Species List Table 8.3)
- 8.6.3 Organisational and Manpower Resources

8.7 Appendix 2: Achievements to Date

8. National Forest Area
- ACTION PLAN -



Map of National Forest Action Area

For further detail see Maps section

8.1 Area Description:

This is a complex area comprising three sub-areas. The Melbourne Parklands in the north is an undulating mixed farming landscape with country houses, landscaped parks and estate plantations to the north of Charnwood Forest. Large areas are intensively farmed for arable crops with low, fragmented hedgerows and few hedgerow trees. The Swadlincote area comprises fragmented woodlands, occasional mixed species hedgerows and more recent post-industrial habitats. The Claylands in the south is a gently rolling mixed farming landscape with regular shaped fields enclosed by hawthorn hedgerows, remnant unimproved grassland and occasional estate plantations. Minor stream corridors provide opportunities for wetland habitats. Historic parkland such as Calke Abbey has substantial woodland with veteran trees. Much of the area lies within the National Forest providing opportunities for environmental enhancement.

The area includes three Sites of Special Scientific Interest and part of the River Mease Special Area of Conservation (SAC), one Local Nature Reserve, 4 RIGS, 79 Local Wildlife Sites and a number of potential Local Wildlife Sites.

The National Forest area comprises six Derbyshire Landscape Character Types:

- Wooded Estatelands
- Village Estate Farmlands
- Riverside Meadows
- Coalfield Village Farmlands
- Sandstone Slopes & Heaths
- Estate Farmlands

Use the Derbyshire County Council online mapping system to view Landscape Character Types within this Lowland Derbyshire LBAP area. www.derbyshire.gov.uk/maps

This Action Area includes the settlements of Repton, Ticknall, Swadlincote, Overseal, Walton on Trent, Lullington.

8.2 Vision

A managed working landscape, where existing habitats are buffered and linked with new habitats to create strong habitat corridors. Hedgerows especially are strengthened where they form vital corridors.

8.3 The Challenges and Opportunities

The mineral extraction industry and subsequent development has resulted in a fragmented landscape in and around the Swadlincote part of this area. There has been considerable regeneration in the former coalfield part of the area, with much of this land having been planted with woodland supported by grants from the National Forest Company. Other habitats around this area are now very fragmented. Semi-natural grassland in particular is rare in this area.

The National Forest area covers a very large proportion of this area and has its own biodiversity action plan which guides habitat creation. Between 1992 and 2010 more than 1,000 ha of woodland was planted, funded by the National Forest Company. Work is now taking place to look strategically at this work and target areas which will links these sites through appropriate habitats corridors. There remains significant opportunity for habitat creation and targeted restoration and management work under agri-environmental schemes in the National Forest.

The area includes 79 Local Wildlife Sites, only 34 of which (43%) are in 'favourable' or 'recovering' condition. The main reasons for 'unfavourable'

condition assessments are associated with non-native species present in woodlands, and the lack of management on grasslands and wetlands.
See section 8.3.3 for a list of key sites in this National Forest Action Area.

8.3.1 Existing initiatives and projects

The **National Forest** covers almost 90% of this area and parts of Leicestershire and Staffordshire amounting to 200 square miles. The concept of the National Forest was to transform an area of lowland England with a low coverage of woodland to one which had a much higher coverage of woodland and other connected habitats. In 1991 the National Forest area as a whole had 6% woodland coverage, by 2010 this had risen to 18% with more than 700 ha of woodland planted in this area of lowland Derbyshire. The National Forest Company, which operates in the National Forest area, runs a number of grant schemes encouraging landowners to create habitats, especially where these form wildlife corridor links to mature habitats.

The area to the north of Hartshorne falls within the Trent Higher Level Stewardship targeting area. One of the primary aims of this targeting area is to provide an expansion to the parkland habitat at Calke Abbey so that species found within the veteran trees might in time be able to colonise other nearby parklands such as Donnington Park which is just over the county border in Leicestershire.

8.3.2 Main landowning bodies

A number of relatively large estates make up the majority of the landholding in this area. These include Melbourne, Bretby, Church Commissioners Estates, National Trust and Severn Trent Water.

8.3.3 Key Sites

The key sites in National Forest Action Area are:

- **National Nature Reserve:** Calke Abbey
- **SSSIs:** River Mease Special Area for Conservation (SAC), Calke Abbey SSSI, Carvers Rocks SSSI, Ticknall Limeyards SSSI.
- **LNRs:** Coton Park LNR
- **Others:** Foremark Reservoir, Grange Wood , Repton Shrubs, Robin Wood, Staunton Harold Reservoir and South Wood .

8.4 KEY ACTIONS for the National Forest area.

1. The **primary habitat objective** within the National Forest area is the maintenance, restoration and expansion of priority habitats, especially woodlands and grasslands to achieve targets in Table 8.1 below

2. The **secondary objective** is to increase connectivity of semi-natural habitats to create larger habitat complexes using priority habitats wherever possible. New habitats such as plantation woodland and hedgerows will be key to achieving this objective.

3. Target renewing Entry Level Stewardship agreement holders to include appropriate actions for farmland birds and field margins.

4. Strengthen hedgerow corridors, especially where they link with woodlands.

5. Re-introduce dormice to the area, via a recognised re-introduction programme and monitor the population.

Full targets for all Priority Habitats and Species are listed in Tables 8.1 and 8.2
All actions listed in the separate **Generic Action Plan** also apply to this area.

8.5 KEY TARGETS for the National Forest area.

8.5.1 Targets for UK BAP PRIORITY HABITATS

Table 8.1 below lists the specific habitat targets for the National Forest area. The requirements of UK BAP reporting mean that our own LBAP targets need to be presented as cumulative figures. The meaning of each column is explained below the table. See Maps section for the distribution of primary habitat features in this Action Area.

UK BAP Priority Habitat	(1) Current Extent at 2011 (i.e. Maintenance* Target to 2020)	Targets for 2011-2020		
		(2) Manage*	(3) Restore*	(4) Expand*
Primary feature:				
Lowland meadow	12 ha	12 ha	150 ha	20 ha
Hedgerows	unknown	additional 10 km	n/a	7 ha
Lowland mixed deciduous woodland	2,194 ha	2,000 ha	n/a	150 ha
Wet woodland	23 ha	15 ha	n/a	8 ha
Wood-pasture and parkland	4 sites	4 sites	n/a	1 site
Lakes and canals	3 lakes	3 lakes	n/a	n/a
Ponds	> 200 ponds	100 ponds	20 ponds	25 ponds
Secondary feature:				
Field margins	unknown	100 ha #		
Lowland dry acid grassland	8 ha	8 ha	40 ha	5 ha
Floodplain grazing marsh	unknown	10 ha	n/a	10 ha

Localised feature:				
Heathland	n/a	n/a	0.2 ha	0.5 ha
Traditional orchard	61 sites	20 sites	n/a	10 sites
Open mosaic habitats	Unknown [∞]			
Lowland calcareous grassland	8 ha	8 ha	n/a	n/a

Table 8.1 Targets for National Forest Action Area 2011-2020.

[*]Table explanation:
Terminology and measurements are the same as those used in the UK Biodiversity Action Plan (UK BAP). These are:

(1) ***'Maintenance'***–this is the current 2011 resource of each Priority Habitat, irrespective of condition and management that we must, *at the very least,* keep and carry forward into the next plan period after 2020. (i.e. no net loss.)

(2) ***'Manage'*** – The amount of Priority Habitat in (1) that we want to be under appropriate management to maintain in 'favourable' condition. This is a cumulative target, continuing on from the previous plan period.

(3) ***'Restore'*** – Habitat which is not in a 'favourable' condition, but which is under restorative management to bring it up to that condition. This is a cumulative target, continuing on from the previous plan period.

(4) ***'Expand'*** – New habitat created from scratch. This could be on a new site or an extension to an existing one. The target is for this Plan Period, though some habitats, - such as woodland - take far longer to fully develop.

Notes to accompany Table 8.1

Calke Abbey forms the core of the parkland habitat within the area, two current Higher Level Stewardship schemes have made provision to expand the parkland habitat, by planting suitable specimen trees within a grassland habitat. Efforts should be made to continue this expansion, where possible, by linking parkland at Calke with other smaller parkland in the area and over the county border.

Grassland, woodland and **hedgerow** creation should also be targeted where the underlying ground conditions are suitable and it links existing habitats.

Pond creation is suitable anywhere in the area, but is especially important where new ponds will add to existing pond networks, and can support great crested newt populations. Restoration should be targeted on sub-priority habitat, especially where it links to priority habitats.

[#] For **field margins** it is not possible to set separate targets for management, restoration or expansion. A single overall target for simply increasing this resource is provided. Figures can only be based on Entry Level Stewardship

monitoring. Further habitat may also be provided through Living Bird Table initiatives.

∞ ***Open mosaic habitats*** the distribution of this habitat is not well understood at the start of this Plan Period (see Generic Action Plan). Its presence is, however, important in this area. It should be maintained in situ wherever possible, especially where it contributes to a wider network linking key habitats.

Calke ponds and weirs project.
Credit: Debbie Alston

8.5.2 Targets for UK BAP PRIORITY SPECIES

There are 93 UK BAP Priority Species recorded within the National Forest area since 2000. The distribution and status of many of these species is not currently well known, and consequently it is not possible to set meaningful targets for them. However, there are other species about which we do know enough to be able to set targets, monitor and assess their success. These are shown below in Table 8.2

The full list of BAP Species for the National Forest area is given in Table 8.3 (see Section 8.6.2)

UK BAP Priority Species	Range targets to 2020 ($1km^2$)	Range expansion targets 2011-2020 ($1km^2$)	Method of expansion
Dingy skipper	9	5	Appropriate Habitat enhancement
Dormouse	nil	2	Natural England approved re-introduction programme
Great-crested newt	8	2	Targeted pond creation
Grizzled Skipper	1	1	Appropriate Habitat enhancement
Oak Polypore	2	Maintain current extent	Appropriate habitat enhancement
Otter	3	2	Appropriate habitat enhancement
Water vole	2	2	Mink control and appropriate habitat enhancement
White clawed crayfish	4	1	Ark development and appropriate habitat enhancement

Table 8.2 Targets for UK BAP Species within the National Forest Action Area.

Efforts should be targeted in this area to maintaining the existing populations of water voles, white-clawed crayfish and skipper butterflies. Targeted pond creation can aid with great crested newt range expansion. Otters have only been recorded at one location along the River Mease, however, with increased monitoring efforts their presence will hopefully be revealed in more kilometre grid squares.

Dingy skippers are less well recorded in this area, than those in the north of the LBAP area. They have been recorded in nine grid squares (9 x 1 km^2) since 2000, one of these is at Carvers Rocks, others are on sites in Swadlincote where glades exist in recently planted woodlands. **Target:** Increase range by five 1 km^2 by 2020

Dormice have not been recorded in south Derbyshire since the start of the 1900's, where they are recorded in the Victorian County History as scarce in southern

Derbyshire. National 'nut hunts' have failed to find them. A suitable site in the Action Area has been highlighted as a potential for a licensed re-introduction scheme. **Target:** Increase range to two 1 km^2 by 2020

Great-crested newts have been recorded in eight grid squares (8 x 1 km^2) since 1990, many of these records are very old and could relate to populations that no longer exist or that are under development pressure. **Target:** Increase range by two 1 km^2 by 2020

Grizzled skippers have been recorded in only one grid square (1 x 1 km^2) since 2000. The species has not been recorded at the site in Swadlincote in recent years and it is believed that it may be extinct in the area. **Target:** Increase range by one 1km^2 by 2020

Oak Polypore has been recorded a few times since 2000 associated with the veteran trees at Calke Abbey, it has been recorded in two grid squares (2 x 1 km^2). One specimen was removed and preserved at Kew. **Target:** Maintain 2011 range by 2020

Otters have been recorded in three grid squares (3 x 1 km^2) since 1990. The River Mease Special Area of Conservation (SAC) is designated for the presence of a number of key species, including otters, although they have only recently been recorded in 1m grid square along the river in the LBAP area. Old records of otters exist from Foremark and Staunton Harold Reservoir. **Target:** Increase range by two 1 km^2 by 2020

Water Voles have suffered a large decline in the area over the last 15 years or so. They have only been recorded in two grid squares (2 x 1 km^2) since 2000 and are in isolated areas that are very vulnerable to the future of the population. **Target:** Increase range by two 1 km^2 by 2020

White-clawed crayfish are rare within the area, only being recorded in four grid squares (4 x 1 km^2) since 2000. The core of this population is associated with Calke Abbey, where work has been done recently to enhance appropriate habitats on one of the main lakes. Two ark sites have been set up nearby on National Trust owned land. **Target:** Increase range by one 1 km^2 by 2020

Dormouse.
Credit: Debbie Alston

8.6 Current Biodiversity Resources

This list of resources within the National Forest area has been divided into three parts:

8.6.1. UK BAP Priority Habitat Resources
8.6.2 UK BAP Priority Species Resources
8.6.3 Organisational and Manpower Resources

8.6.1 UK BAP Priority Habitat and other Resources

The figures below show the total amount of each Priority Habitat known to exist in the National Forest area at the start of this Plan Period in 2011. Figures for sub-priority and newly created habitats are given if known.
Brief notes on their distribution within the area then follow.

Total area of the National Forest region = 15,283 ha
Total area of Priority biodiversity resource at start of Plan Period = 2,788 ha
Percentage of National Forest containing this biodiversity resource = **18.2%**

Lowland Mixed Deciduous Woodland:

Ancient Semi-natural woodland =	166 ha
Plantation on Ancient Woodland Sites =	268 ha
Secondary =	357 ha
Plantation =	1,403 ha

Wet Woodland: 23 ha

Wood pasture and parkland: (4 sites) 336 ha

Traditional orchard: (61 sites) 19 ha

Lowland meadow: 12 ha
(Plus 647 ha of sub-priority and 57 ha of newly created)

Lowland Calcareous: 8 ha

Lowland Dry Acid Grassland: 8 ha
(Plus 45 ha sub-priority and 2ha of newly created)

Rush- pasture: (7 ha of sub-priority, 4 ha newly created)

Wetland:

Ponds: >200 ponds	
Lakes (3 lakes)	181 ha
Reedbed	0.5 ha
Swamp	6 ha

Location of Priority Habitats in the Landscape:

Primary features:

Lowland deciduous woodland: Few ancient woodlands, but now the landscape is relatively wooded with recent plantations forming large blocks of woodland.
Wood-pasture and parkland: Concentrated within the Melbourne parkland area, the largest of which is Calke Abbey.
Veteran trees: Widespread throughout the area, especially within the Melbourne parkland area.
Wet woodland: Associated with the upper reaches of streams and brook that feed into River Trent and along the River Mease corridor.
Lowland meadow: Mostly in the eastern part of the area and relatively rare.
Hedgerows: Widespread, but in many places fragmented and under managed
Lakes: Two large reservoirs, Staunton Harold and Foremark, built for water storage.
Ponds: Widespread, including many new ponds associated with agri-environmental schemes.

Secondary features:

Lowland dry acid grassland: Associated with the sandstone soils south of Ticknall.
Field margins: Widespread throughout the area.

Localised features:

Heathland: Only present in very small patches at Carvers Rocks SSSI.
Lowland calcareous grassland: Only present at Ticknall and Bretby areas associated with limestone outcrops.
Traditional orchards: Widespread but very small in size.
Floodplain grazing marsh: Associated with the River Mease.
Open mosaic habitats: Occurs in areas of brownfield land, especially on former industrial and coal extraction sites.

Note: The terms Primary, Secondary or Localised feature used above are synonymous with 'Primary Habitat' etc. used in the Landscape Character of Derbyshire (2003) see www.derbyshire.gov.uk/landscape. These describe how noticeable and distinctive each habitat is within the landscape itself. Only Primary Features are shown in the detailed map of each Action Area in the Maps section.

8.6.2 UK BAP Priority Species Resources

Group	English Name
Fungus	Oak polypore
Plant	*See footnote*
Amphibian	Great crested newt
Amphibian	Common toad
Reptile	Adder
Reptile	Common lizard
Reptile	Grass snake
Reptile	Slow worm
Bird	Bullfinch
Bird	Corn bunting
Bird	Cuckoo
Bird	Curlew
Bird	Dunnock
Bird	Grasshopper warbler
Bird	Grey partridge
Bird	Hawfinch
Bird	Herring Gull
Bird	House sparrow
Bird	Lapwing
Bird	Lesser Redpoll
Bird	Lesser spotted woodpecker
Bird	Linnet
Bird	Marsh tit
Bird	Reed bunting
Bird	Skylark
Bird	Song thrush
Bird	Spotted flycatcher
Bird	Starling
Bird	Tree pipit
Bird	Tree sparrow
Bird	Turtle dove
Bird	Willow tit
Bird	Wood warbler
Bird	Yellowhammer
Bird	Yellow wagtail
Mammal	Brown hare
Mammal	Brown long-eared bat
Mammal	Harvest mouse
Mammal	Hedgehog
Mammal	Noctule
Mammal	Otter
Mammal	Polecat
Mammal	Soprano pipistrelle
Mammal	Water vole
Butterfly	Dingy skipper
Butterfly	Grizzled skipper
Butterfly	Small heath
Butterfly	Wall

Group	English Name
Butterfly	White admiral
Butterfly	White letter hairstreak
Crustacean	White-clawed crayfish
Moth	Argent and sable
Moth	Autumnal rustic
Moth	Beaded chestnut
Moth	Blood-vein
Moth	Brindled beauty
Moth	Broom moth
Moth	Brown-spot pinion
Moth	Buff ermine
Moth	Centre-barred sallow
Moth	Deep-brown dart
Moth	Dot moth
Moth	Double dart
Moth	Dusky brocade
Moth	Dusky thorn
Moth	Dusky-lemon sallow
Moth	Flounced chestnut
Moth	Garden dart
Moth	Garden tiger
Moth	Ghost moth
Moth	Green-brindled crescent
Moth	Grey dagger
Moth	Knot grass
Moth	Latticed heath
Moth	Mottled rustic
Moth	Mouse moth
Moth	Oak hook-tip
Moth	Pale eggar
Moth	Powdered quaker
Moth	Pretty chalk carpet
Moth	Rosy minor
Moth	Rosy rustic
Moth	Shaded broad-bar
Moth	Shoulder-striped wainscot
Moth	Small emerald
Moth	Small phoenix
Moth	Small square-spot
Moth	The cinnabar
Moth	The crescent
Moth	The rustic
Moth	The sallow
Moth	The spinach
Moth	White ermine
Moth	White-spotted pinion

Table 8.3 UK BAP Priority Species present within the National Forest Area since 2000 (93 species)

Note: Shepherd's-needle was recorded within this Action Area near Linton in 1996.

8.6.3 Organisational and Manpower Resources

Below is a list of organisations that are key to delivering the actions and targets in the National Forest area. Reference should also be made to the table in the Generic Action Plan.

Statutory Agencies
Environment Agency *
Forestry Commission *
Natural England *

Voluntary organisations
BTCV *
Derbyshire Wildlife Trust *
FWAG *
Groundwork Derby and Derbyshire *
RSPB *

Other Organisations
Environmental Education Project *
National Forest Company *

Local Authorities (including Town and Parish Councils)
Derbyshire County Council *
South Derbyshire District Council *

Bretby Parish Council
Calke Parish Council
Castle Gresley Parish Council
Cauldwell Parish Council
Coton in the Elms Parish Council
Drakelow Parish Council
Foremark Parish Council
Hartshorne Parish Council
Ingleby Parish Council
Linton Parish Council
Lullington Parish Council
Melbourne Parish Council
Netherseal Parish Council
Newton Solney Parish Council
Overseal Parish Council
Repton Parish Council
Rosliston Parish Council
Smisby Parish Council
Stanton by Bridge Parish Council
Ticknall Parish Council
Walton upon Trent Parish Council
Woodville Parish Council*

Other Landowning bodies
Church Commissioners
Homeowners (for UK BAP species in gardens)
National Trust
Private landowners and farmers
Severn Trent Water
Woodland Trust

* indicates Lowland Derbyshire Biodiversity Partnership member.
If your group or organisation would like to join the Partnership, go to www.derbyshirebiodiversity.org.uk

8.7 Achievements to Date in National Forest area

Figures are based on Nov 2011 data and rounded to nearest hectare

Woodland

1, 517 ha (76 % of the target) of lowland Mixed Deciduous Woodland was considered to be under management (in an agri-environmental scheme or assessed as favourable or recovering condition)

Wet Woodland

10 ha (66 % of the target) of lowland Wet Woodland (including newly planted woodland) was considered to be under management (in an agri-environmental scheme or assessed as favourable or recovering condition)

Lowland Meadow

11 ha (92 % of the target) of priority Lowland Meadow was considered to be under management (in an agri-environmental scheme or assessed as favourable or recovering condition)

87 ha (58 % of the target) of sub-priority Lowland Meadow was considered to be under restoration (in an agri-environmental scheme or assessed as 'favourable' or 'recovering' condition), looking to bring the habitat condition up to priority status.

Lowland Dry Acid Grassland

7 ha (88 % of the target) of priority Lowland Dry Acid Grassland was considered to be under management (in an agri-environmental scheme or assessed as favourable or recovering condition)

36 ha (90 % of the target) of sub-priority Lowland Dry Acid Grassland was considered to be under restoration (in an agri-environmental scheme or assessed as 'favourable' or 'recovering' condition), looking to bring the habitat condition up to priority status.

Wetland

30 ponds under management (30%)

2 lakes (66% of the target) are under management

Current Agri-environment Schemes:

1 Higher Level Stewardship Scheme
3 Countryside Stewardship Schemes

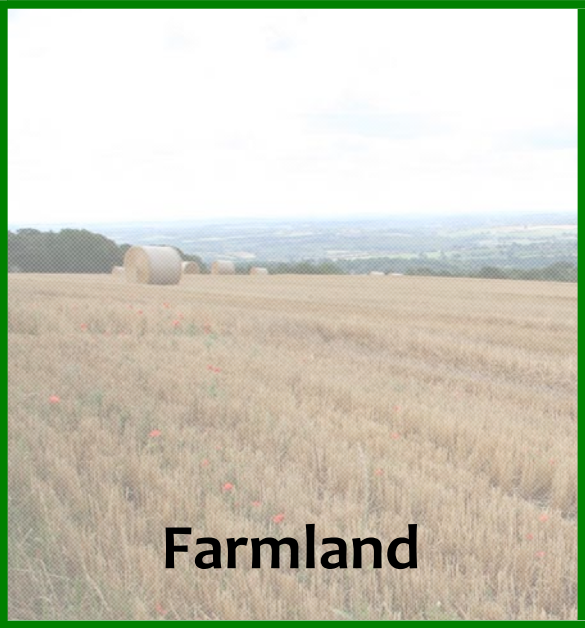
Lowland Derbyshire Local Biodiversity Action Plan
Habitat Targets 2011-2020

The table below provides an overview of the habitat targets for the LBAP.

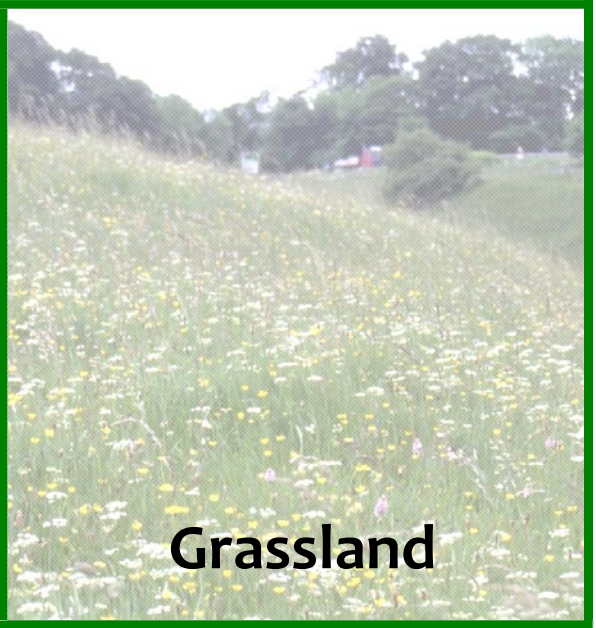
	Habitat	Target Type	Units	Mag-nesian Limestone	River Rother and Doe Lea valleys	Peak Fringe	Erewash Valley	Claylands	Derby	Trent and Dove valleys	National Forest	**Totals**
Woodland	Lowland Deciduous mixed woodland	Maintenance	ha	900	1,109	2,845	690	885	100	190	2,194	**8,913**
		Management		800	820	2,050	450	700	90	140	2,000	**7,050**
		Creation		30	100	50	40	20	1	18	150	**409**
	Wet Woodland	Maintenance	ha	--	11	31	28	38	5	61	23	**197**
		Management		--	8	20	21	20	4	55	15	**148**
		Creation		--	3	--	5	--	2	8	8	**26**
	Wood-pasture and Parkland	Maintenance	sites	2	7	27	11	16	3	--	4	**70**
		Management		2	3	15	5	9	3	--	4	**41**
		Restoration		1	--	--	--	--	--	--	--	**1**
		Expansion		-	--	--	--	--	--	--	1	**1**
Semi-natural Grassland	Lowland Meadow grassland	Maintenance	ha	4	19	235	50	42	7	6	12	**374**
		Management		4	19	210	42	40	7	6	12	**340**
		Restoration		50	150	420	70	165	90	30	150	**1,125**
		Creation		2	15	30	20	15	1	14	20	**117**
	Lowland dry acid grassland	Maintenance	ha	--	3	164	1.3	58	0.8	--	8	**238.1**
		Management		--	3	120	1.3	40	0.8	--	8	**173.1**
		Restoration		--	20	250	12	130	2	--	40	**454**
		Creation		--	1	10	5	5	--	--	5	**26**
	Lowland calcareous grassland	Maintenance	ha	31	5	8	--	--	0.2	--	8	**52.2**
		Management		25	5	6	--	--	0.2	--	8	**44.2**
		Restoration		35	57	3	--	--	2	--	--	**97**
		Creation		20	--	5	--	--	--	--	--	**25**
	Caliminarian grassland	Maintenance	ha	--	--	1	--	--	--	--	--	**1**
		Management		--	--	1	--	--	--	--	--	**1**
	Rush-pasture and purple moor grass	Maintenance	ha	--	--	6	--	15	--	4	--	**25**
		Management		--	--	6	--	15	--	4	--	**25**
		Restoration		--	--	14	--	15	--	5	--	**34**
		Creation		--	--	--	--	--	--	5	--	**5**
	Floodplain grazing marsh	Maintenance	ha	--	unknown	216	47	--	99	132	unknown	**> 500**
		Management		--	--	30	30	--	99	95	10	**264**
		Restoration		--	--	--	10	--	--	--	--	**10**
		Creation		--	10	--	2	--	9	30	10	**61**
Heathland	Heathland	Maintenance	ha	--	0	36	1	--	--	--	--	**37**
		Management		--	0	30	1	--	--	--	0	**31**
		Restoration		--	0.75	37	--	0.2	--	--	0.2	**38.15**
		Creation		--	1	5	2	--	--	--	0.5	**8.5**
Wetland	Ponds	Maintenance	ponds	> 90	> 200	> 300	> 250	> 500	> 90	> 150	> 200	**> 1,780**
		Management		40	60	60	72	40	65	60	100	**497**
		Restoration		5	25	10	5	5	15	20	20	**105**
		Creation		5	25	10	15	5	20	25	25	**130**
	Eutrophic lakes (Lakes and Canals)	Maintenance	sites	3	7	16	10	6	3	31	3	**79**
		Management		3	7	15	10	6	3	28	3	**75**
		Creation		--	1	--	--	--	--	2	--	**3**
	Reedbed	Maintenance	ha	--	19	2	3	--	--	46	--	**70**
		Management		--	15	1	2	--	--	35	--	**53**
		Creation		--	5	1	1	--	--	15	--	**22**
	Swamp	Maintenance	ha	--	7	7	37	13	13	16	--	**93**
		Management		--	7	6	19	10	13	15	--	**70**
		Creation		--	1	--	1	--	--	5	--	**7**
	Mire and fen	Maintenance	ha	3	3	6	3	11	--	--	--	**26**
		Management		3	3	5	3	11	--	--	--	**25**
		Creation		--	--	1	1	--	--	--	--	**2**
Arable	Hedgerows	Maintenance	km	unknown	unknown	unknown	unknown	unknown	187	unknown	unknown	**unknown**
		Management		Additional 10	Additional 15	Additional 20	Additional 10	Additional 10	Additional 5	Additional 5	Additional 10	**Additional 85**
		Creation		10	5	7	10	7	1	10	7	**57**
	Arable field margins	Maintenance	ha	unknown	unknown	unknown	unknown	unknown	--	unknown	unknown	**unknown**
		Management / Creation		60	60	50	50	50	--	30	100	**400**
	Orchards	Maintenance	ha	17	37	23	35	155	4	21	61	**353**
		Management		5	--	5	15	60	4	10	20	**119**
		Restoration		--	--	5	--	10	--	--	--	**15**
		Creation		2	5	1	5	10	2	1	10	**36**
	Green roofs	Creation	sites	--	20	--	--	--	20	--	--	**40**

UK Priority Habitats - Background Information

Lowland Derbyshire LBAP

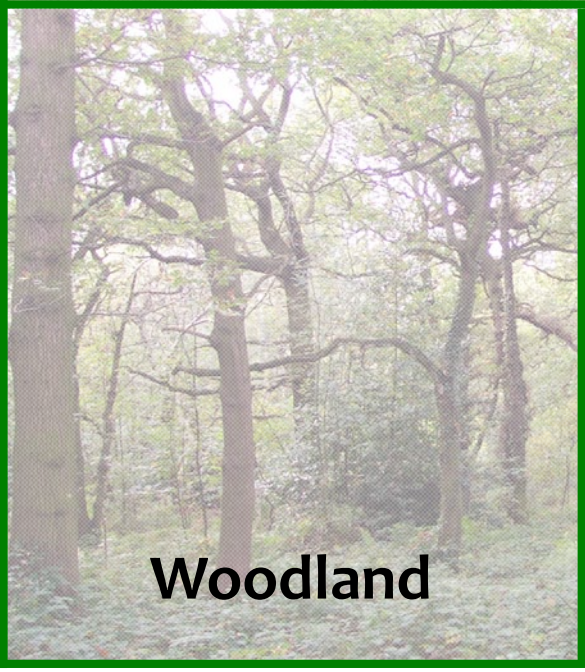


Farmland



Grassland

Heathland



Woodland

Wetland

"…the wildlife that we see and hear and the habitats that sustain such life are key components that reinforce our sense of place. Working with the grain of the landscape, we can create or enhance habitats that will thrive and support a greater diversity of species, thus enriching our natural world."

Sir Martin Doughty,
'The Landscape Character of Derbyshire' publication,
Derbyshire County Council, 2003

Cover photographs clockwise from top left:
Farmland: Arable field with scattered poppies.
Grassland: The Lawns at Calke Abbey.
Heathland: Heathland at Stone Edge near Holymoorside.
Wetland: Wollen Meadow wetland, Creswell.
Woodland: Chaddesden Wood LNR, Derby.
All credit: Debbie Alston

LOWLAND DERBYSHIRE BIODIVERSITY PARTNERSHIP

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Lowland Derbyshire LBAP

Farmland Habitats
- Background Information -

Arable field with scattered poppies. Credit: Debbie Alston

Prepared by the Lowland Derbyshire Biodiversity Partnership

This document provides background information for the Lowland Derbyshire Biodiversity Action Plan 2011-2020.

Last updated November 2011

Farmland Habitats in Lowland Derbyshire

Contents

	Page
1. Introduction	3
1.1 Landscape Character	3
1.2 Associated Farmland Species	3
2. Hedgerows	6
2.1 Introduction	6
2.2 Hedgerows in Lowland Derbyshire	7
3. Field Margins	9
3.1 Introduction	9
3.2 Field Margins in Lowland Derbyshire	10
Table 1: Farmland Habitats characteristic and appropriate within each Landscape Character Type	4
Appendix 1: Species for which Ancient and Species-rich Hedgerows are a key habitat in Lowland Derbyshire	11
Appendix 2: Species for which cereal Field Margins are a key habitat in Lowland Derbyshire	13

1. Introduction

Farmland is an essential part of our natural landscape. It can, if managed appropriately, support most of our native flora and fauna. Even in large areas of arable fields the boundary features are important as wildlife corridors for associated species of birds, mammals and invertebrates linking different habitats and biodiversity.

1.1 Landscape Character

In 2003 Derbyshire County Council carried out a **Landscape Character Assessment** for the county, excluding large urban areas, such as the built parts of Derby City and Chesterfield. The project identified where farmland habitats would be most appropriate in maintaining landscape character and local distinctiveness. The Assessment promotes the planting and management of farmland types that would be most appropriate in maintaining landscape character and local distinctiveness. This approach has been largely reflected in the landscape-scale approach within the Lowland Derbyshire LBAP.

Table 1 shows the relationship between landscape character type and farmland type.

1.2 Associated Farmland Species

There are many species associated with farmland habitats, some of which are UK BAP Priority Species.

Appendix 1 and 2 lists Priority Species as well as a range of locally important and local Red Data Book species found in farmland habitats.

Field margin. Credit: Natural England

Table 1: Farmland habitats characteristic and appropriate within each Landscape Character Type

P Primary (main) habitat - prominent, and a key characteristic
S Secondary habitat - variable, and a local characteristic

Action Area name within this LBAP	Character Area	Landscape Character Type	Hedgerows	Cereal Field Margins
Peak Fringe	Derbyshire Peak Fringe and Lower Derwent	Enclosed Moorland		
		Wooded Slopes and Valleys	P	
		Wooded Farmlands	P	S
		Gritstone Heaths & Commons		S
		Settled Farmlands	P	S
		Riverside Meadows		
Rother and Doe Lea Valleys Erewash Valley	Notts, Derbyshire & Yorkshire Coalfield	Wooded Hills & Valleys	P	
		Coalfield Village Farmlands	P	S
		Estate Farmlands	S	P
		Wooded Farmlands	P	S
		Coalfield Estatelands	P	S
		Riverside Meadows		
		Plateau Estate Farmlands	S	P
Magnesian Limestone	Southern Magnesian Limestone	Limestone Farmlands	P	P
		Limestone Gorges	S	
Claylands	Needwood & South Derbyshire Claylands	Settled Farmlands	P	S
		Settled Plateau Farmlands	P	S
		Sandstone Slopes & Heaths	P	
		Estate Farmlands	S	P
		Riverside Meadow		
Trent and Dove Valleys	Trent Valley Washlands	Lowland Village Farmlands	S	P
		Wet Pasture Meadows	S	P
		Riverside Meadows		

Action Area name within this LBAP	Character Area	Landscape Character Type	Hedgerows	Cereal Field Margins
National Forest area	Melbourne Parklands	Estate Farmlands	S	P
		Wooded Estatelands	S	S
		Sandstone Slopes & Heaths	P	
		Riverside Meadows		
	Leicestershire & Derbyshire Coalfield	Coalfield Village Farmlands	P	S
	Mease & Sence Lowlands	Village Estate Farmlands	P	P
		Riverside Meadows		

Note: Derby is omitted from this list because it is not, in itself, a Character Area. The administrative boundary of the city of Derby actually straddles four such Character Areas: the Needwood and South Derbyshire Claylands, the Trent Valley Washlands, the Derbyshire Peak Fringe and Lower Derwent, plus the Notts, Derbyshire and Yorkshire Coalfield.

Living bird table. Credit: Derbyshire County Council

2. Hedgerows

2.1 Introduction

A hedgerow is defined as any boundary of trees or shrubs over 20m long and less than 5m wide, provided that at one time the trees or shrubs were more or less continuous. It includes an earth bank or wall only where such a feature occurs in association with a line or trees or shrubs

Ancient hedgerows may be defined as those which were in existence before the Enclosure Acts, passed mainly between 1720 and 1840 in Britain and from the mid seventeenth century in Ireland. **Species-rich hedgerows** may be taken as those which contain 5 or more different native woody species on average in a 30 metre length, or 4 or more in northern England, upland Wales and Scotland. Those hedges that contain fewer woody species but which do support a rich associated field flora of herbaceous plants should also be included, although practical criteria for identifying them have yet to be agreed. Many of the thin straight hawthorn hedges which characterise later parliamentary enclosures, as well as most hedges which consist mainly of beech, privet, yew or non-native trees, are excluded. Recently planted species-rich hedges are included.

A high proportion of the British flora and fauna can be found in hedges. Around 600 species of vascular plant having been recorded from this habitat, though some only rarely. Generally, the wildlife associated with hedges derives from woodland, since some of the older hedges were cut from woodland over a thousand years ago (these are known as **assart hedges**). Despite this, scrub and open ground species may also be found in the land under and beside the hedge. None of the species recorded in hedges are specific to this habitat, however the loss of their original or preferred habitat makes hedges very important for their survival. This is particularly true of species typical of woodland clearings or edges, such as song thrush, which fare well in hedges. Species typically associated with areas of scrub (including linnet, tree sparrow, bullfinch, yellowhammer, turtle dove, garden warbler, blackcap and whitethroat) also fare well in hedges, whilst open ground species such as grey partridge use hedge bottoms for nesting. Well-managed hedgerows also provide habitat for butterflies including the meadow brown, gatekeeper and small skipper and for mammals such as dormice, stoats, weasels and shrews. Bats in particular rely upon hedgerows for navigation during flight and do not like having a gap of more than 10m in a hedge as it interferes with their hunting patterns.

The management of a hedge significantly affects its biodiversity value. Traditionally this was done by **laying** on a rotation to maintain the structure of the hedge and periodic trimming so that it remained stock-proof. In the last ten years the amount of hedge-laying appears to have increased. Modern methods rely on trimming with a flail cutter which eventually leads to a loss of structure. This may no longer be of concern for keeping in stock, but it is important for nesting birds. Structure is an important factor in the value of hedges for wildlife, but the adjacent field margins are also critical for some species. Modern, mechanised hedge-trimming enables a similar treatment of all hedges at the same time, resulting in over-uniformity. It contrasts strongly with the rotation of traditional management round the farm over several years, which was important for wildlife.

Regular over-cutting reduces the ability of species like hawthorn to produce flowers and fruit. It not only limits bird-nesting opportunities, but also the availability of hedgerow food in autumn and winter. By contrast, over-neglect leads to tall, overgrown hedges, which can temporarily be valuable for wildlife, but which soon deteriorate further. They become gappy and eventually end up as just a line of mature hawthorns or other individual trees.

Hedgerow trees are an important feature, not only for the habitat they provide and as song posts for birds, but also as a significant part of the tree resource generally. In 1980 the Forestry Commission estimated that there were 133,000 hedgerow trees in the whole county and, although this figure will be even lower now, there are still areas of Derbyshire where they form an important feature. Even where mature trees still occur there are very few new saplings appearing. Positive action is needed to reverse this situation because flail mowing removes all young growth.

In 2000 the Countryside Survey recorded 449,000km of complete hedges and 52,000km of remnant hedges across England and Wales. This represents no detectable change in the length of whole hedgerows, but a decline of 21% of the length of remnant hedgerow from surveys in the 1980s. An interim survey in 1993 suggested that the losses sustained in the first part of the period were more than compensated for by the gains in the second part. However, this does not reflect the loss of ancient hedgerows being replaced by new and less valuable ones.

Random sampling showed that approximately 26% of hedges (130,260km) had 5 or more woody species within them and could be classed as 'species-rich'. An estimate of 42% of hedges were noted in the 1993 survey as being species-rich meaning that an estimated 173,880km were showing a decline of 25%.

2.2 Hedgerows in Lowland Derbyshire

Plant diversity within a hedgerow is dependant on the origin, history and particularly the continuity of the hedge. In general, the older the hedge, the greater the diversity. The richest are assart hedges, which have a diverse, relict woodland flora and fauna. The oldest are often Parish boundary hedges, now over a thousand years old, but more recent ones may also be species-rich, depending on their origins. Enclosure hedges dating from the end of the eighteenth century may be diverse, but often only one or two species were originally planted, since that was what was available.

Dominant Species: Dogwood occurs in some hedges in the south and west of this Local BAP area and may be an indicator of old hedges. Hazel probably originated from the forest since, whilst it is easy to lay and forms a dense structure, it is palatable and not always easy to maintain in a stock-proof state. One tree species which survives almost exclusively in hedges is the native black poplar. Several of the eleven sites for wild service tree in the county are in hedges.

Even though the loss of hedges has been significant over much of this Local BAP area, they are still probably the single most important visual and wildlife features in much of the farmed landscape today, especially where intensification has decreased the diversity of the fields and removed other features such as ponds and wet areas. Where they do survive they provide shelter, corridors, food, over-wintering and breeding sites for a variety of animals and a habitat for many plants unable to survive in the adjoining fields. Hedgerows are a critical element in linking other wildlife features together across the landscape into a coherent and connected network.

2.1.1 Magnesian Limestone

Agricultural intensification on the Magnesian limestone has removed many of its boundary features. Some of these were hedgerows and, although some of those remaining are species- rich, they are often on roadsides and are retained simply for that reason. Nevertheless there are still some good hedges in the area. A range of shrubs and trees may be found within them, including alder buckthorn, wild privet, holly, field maple, ash, wych elm. Holly hedges have previously been flagged up as characteristic within this Action Area.

2.2.2 River Rother and Doe Lea Valleys

The intermixing of urban and agricultural land is a feature of this area and in such situations the use of the fields means that hedgerow management is often a low priority. Hedgerow trees are a feature of the central section of the area where there has been no open-cast mining. But over large areas the only hedges are the single-species, single-age, straight lines of restoration scheme planting.

2.2.3 Peak Fringe

In the smaller valleys to the west of Chesterfield there are diverse hedges, often with holly and hazel as features, but here the fields are often traditionally managed and the field pattern retained. Further south there are areas where hedges have been removed or neglected. To the west of the Derwent and on the small limestone outlier around Crich there are sections where stone walls traditionally form the stock-proof boundary.

2.2.4 Erewash Valley

In this area hedges have suffered from the intensification of arable, with only small areas of pasture remaining. Many hedges have been removed to increase field size, or lost through coal extraction. Those that remain are often deteriorating in structure and as wildlife habitats.

2.2.5 Claylands

As a result of the emphasis on pasture and stock rearing in this Action Area there has not been such extensive boundary removal as in the other places, where mineral extraction and agricultural intensification has progressed. There is also a greater need to maintain hedges in a stock proof condition and hedges are more consistently better maintained. However, the flood-plain of the River Dove and other flat valleys have seen levels of removal and neglect which are more common on the Coal Measures. This is one area where hedgerow trees are a feature of the landscape, but the number of replacements is very low and some of the mature trees are suffering from die-back as a result of lowering water tables. In addition, new pressures are being imposed by an increase in arable farming with more intensive management and less need for stock-proof hedges.

2.2.7 Trent and Dove Valley

This area has seen hedgerow losses due to the improvement of drainage from recent agricultural intensification and also as an effect of mineral (gravel) workings.

2.2.8 National Forest area

This Action Area is an important agricultural region in Derbyshire. It is one of the remaining strongholds for farmland birds, though recent changes in agricultural policy have resulted in more intensive farming which reduces habitat availability for these species. Uptake in the field margin options of entry-level stewardship schemes could be increased by more targeted advice being available.

Hedgerow and hedgerow tree.
Credit: Debbie Alston

3. Field Margins

3.1 Introduction

For the purposes of the LBAP, the term 'field margin' refers to any strip of land lying between crops and the field boundary, extending for a limited distance into the crop, which are deliberately managed to create conditions which benefit key farmland species. They can take a variety of forms, the principal types being:

- A **'Wildlife Strip'** 6m wide adjacent to a cereal crop, together with a 1 m **'Sterile Strip'** between the wildlife strip and the crop. The wildlife strip is cultivated once a year but not cropped; the Sterile Strip is maintained so as to prevent aggressive arable weeds spreading into the adjacent cereal crop.
- A **'Conservation Headland'** either 6m or 12m wide forming the outer margin of the crop and separated from an adjacent field boundary or other vegetation by a 1 m Sterile Strip. The Conservation Headland is cropped with cereals but is managed with reduced inputs of pesticides so as to favour wild arable plants and invertebrates.
- A **combined Wildlife Strip** and **Conservation Headland**, separated by a Sterile Strip and managed as described as above.
- **Game crops, stubble** or **grassland fallows** lying between annually cropped land and the field boundary.
- **Beetle banks**, which are tussocky grass banks about 2m wide. These link existing field margins by crossing the middle of an arable field

Field margins are described in the LBAP as providing nesting and feeding sites for game birds and some passerines. They also provide a shelter and habitat for butterflies, grasshoppers, and plant bugs as well as small mammals.

Once common but now rare and threatened arable plants such as cornflower *Centaurea cyanus*, and Shepherd's needle *Scandix pecten-veneris* can be found within cereal field margins. Arable plants are of conservation concern because of enormous national declines in their distribution and abundance. Overall, some 300 species of plants can occur in arable fields.

Field margins can be enhanced by sowing with an appropriate seed mixture, or by allowing margins to develop for the natural seedbank. The species composition of the margin can be tailored for a particular species such as grey partridge. The structure of the margin is particularly important for the animal species, providing cover, nesting, breeding and feeding sites, as well as corridors for movement, although the diversity of plant species in a field margin is also clearly important for general biodiversity. Its proximity to boundary features and other habitats which are or can be of importance, is also an important factor in determining the specific value of each area and the need for more conservation directed management.

To be effective for wildlife, field margins have to be managed correctly, and this includes restricting the type and amount of herbicides applied.

3.2 Field Margins in Lowland Derbyshire

In Derbyshire, field margins form a transitory habitat for some species and are a key habitat for a number of national and local BAP species, which in the past would have survived the less frequent and intensive management in cropped fields. These species include grey partridge, quail, barn owl, stoat, weasel, shrews, harvest mouse and flowering plants such as cornflower, shepherd's needle and red hemp-nettle, bryophytes etc. Shepherd's needle, thought to be extinct in the county, was re-discovered in one field margin in the National Forest area in 1996.

It is difficult to comment authoritatively on the distribution of field margins in Lowland Derbyshire as no audit has ever been carried out. It can be said, however, that there is more likely to be a greater amount of arable field margins within the Magnesian Limestone, Rother and Doe Lea Valleys, and National Forest areas as they are the main arable areas of Derbyshire.

Beetle Bank.
Credit: Natural England

Appendix 1: Species for which Ancient and Species-rich Hedgerows are a key habitat in Lowland Derbyshire

1.1 Priority Species (ie. UK BAP Species recorded in this Priority Habitat in Lowland Derbyshire)

Birds

Cuckoo	*Cuculus canorus*
Dunnock	*Prunella modularis*
Grey partridge	*Perdix perdix*
Lesser spotted woodpecker	*Dendrocopos minor*
Linnet	*Carduelis cannabina*
Reed bunting	*Emberiza schoeniclus*
Song thrush	*Turdus philomelos*
Tree sparrow	*Passer montanus*
Turtle dove	*Streptopelia turtur*
Willow tit	*Parus montanus*
Yellowhammer	*Emberiza calandra*

Mammals

Brown Hare	*Lepus europaeus*
Dormouse	*Muscardinus avellanarius*
Pipistrelle bat	*Pipistrellus pipistrellus*

Amphibians

Great crested newt	*Triturus cristatus*

Invertebrates

Square-spotted clay moth	*Xestia rhomboidea*

1.2 Locally Important Species

An important feature of Local BAPs is the selection of locally important, threatened, declining or rare species which add local distinctiveness—the so-called "Local Red Data Book" species. Using Endangered Wildlife in Derbyshire (Elkington and Willmot, 1996) plus the Red Data List of Derbyshire's Vascular Plants (Moyes and Willmot, 2009), and with the help of county recorders, the following species have been selected for this category.

Note: These lists identify only rare or locally distinctive species. Neither list should be interpreted as an inventory of 'typical' hedgerow species, or species characteristic of hedgerow habitats.

Birds

Barn Owl	*Tyto alba (uncommon, needs trees within hedgerows)*
Bullfinch	*Pyrrhula phrrhula*
Garden warbler	*Sylvia borin (declining)*
Hobby	*Falco subbuteo (uncommon)*
Kestrel	*Falco tinnunculus*
Stock Dove	*Columba oenas*

Mammals

Daubenton's bat	*Myotis daubentonii*
Whiskered bat	*Myotis mystacinus*
Brandt's bat	*Myotis brandtii*
Natterer's bat	*Myotis nattereri*
Leisler's bat	*Nyctalus leisleri*
Noctule bat	*Nyctalus noctula*

Vascular Plants

Wood Spurge	*Euphorbia amygdaloides*
Narrow-leaved everlasting-pea	*Lathyrus sylvestris*
Cat-mint	*Nepeta cataria*
Mountain Currant	*Ribes alpinum*
a bramble	*Rubus durescens*
Purple Willow	*Salix purpurea*
Stone Parsley	*Sison amomum*

Invertebrates

Beetles

Carabus monilis
Fleutiauxellus quadripustulatus
Ptinomorphus imperialis
Phyllotreta vittata
Psylliodes luteola
Hypera fuscocinerea
Ceutorhynchus rapae

Butterflies

White-letter hairstreak *Satyrium w-album*
Green hairstreak *Callophrys rubi*

Right: White-letter hairstreak butterfly. Credit: Martin Stubbs
Below: Living bird table in school grounds.
Credit: Derbyshire Wildlife Trust

Appendix 2: Species for which Field Margins are a key habitat in Lowland Derbyshire

2.1 Priority Species (ie. UK BAP Species recorded in this Priority Habitat in Lowland Derbyshire)

Mammals

Pipistrelle bat	*Pipistrellus pipistrellus*

Birds

Corn bunting	*Miliaria calandra*
Grey partridge	*Perdix perdix*
Reed bunting	*Emberiza schoeniclus*
Skylark	*Alauda arvensis*
Yellowhammer	*Emberiza citrinella*
Yellow Wagtail	*Motacilla flava*

Vascular Plants

Tower mustard	*Arabis glabra*
Cornflower	*Centaurea cyanus*
Red hemp-nettle	*Galeopsis angustifolia*
Shepherd's needle	*Scandix pecten-veneris*

Non-vascular plants

Sausage-beard moss	*Didymodon tomaculosus*

Amphibian

Common Toad
Great Crested Newt

2.2 Locally Important Species

An important feature of Local BAPs is the selection of locally important, threatened, declining or rare species which add local distinctiveness—the so-called "Local Red Data Book" species. Using Endangered Wildlife in Derbyshire (Elkington and Willmot, 1996) plus the Red Data List of Derbyshire's Vascular Plants (Moyes and Willmot, 2009), and with the help of county recorders, the following species have been selected for this category.
Note: These lists identify only rare or locally distinctive species. Neither list should be interpreted as an inventory of 'typical' field margin species, or species characteristic of field margin habitats.

Birds

Barn Owl	*Tyto alba*
Kestrel	*Falco tinnunculus*
Quail	*Coturnix coturnix*

Mammals

Daubenton's bat	*Myotis daubentonii*
Whiskered bat	*Myotis mystacinus*
Brandt's bat	*Myotis brandtii*
Natterer's bat	*Myotis nattereri*
Leisler's bat	*Nyctalus leisleri*
Noctule bat	*Nyctalus noctula*
Harvest mouse	*Micromys minutus*

Bryophytes

Beaked Beardless Moss	*Weissia rostellata*
Field Hornwort	*Anthoceros agrestis*
Floerke's Phescum	*Microbotryum floerkeana*
Field Hornwort	*Anthoceros agrestis*

Plants

Basil Thyme	*Clinopodium acinos*
Dwarf Spurge	*Euphorbia exigua*
Small Cudweed	*Filago minima*
Large-flowered hemp-nettle	*Galeopsis speciosa*
Henbane	*Hyoscyamus niger*
Sharp-leaved Fluellen	*Kickxia elatine*
Grass Vetchling	*Lathyrus nissolia*
Venus's-looking-glass	*Legousia hybrida*
Smith's Pepperwort	*Lepidium heterophyllum*
Field Gromwell	*Lithospermum arvense*
Cat-mint	*Nepeta cataria*
Bird's-foot	*Ornithopus perpusillus*
Prickly Poppy	*Papaver argemone*
Corn Buttercup	*Ranunculus arvensis*
Shepherd's-needle	*Scandix pecten-veneris*
Annual Knawel	*Scleranthus annuus*
Field Woundwort	*Stachys arvensis*
Grey Field-speedwell	*Veronica polita*

Grassland Habitats
- Background Information -

Lowland Derbyshire LBAP

The Lawns at Calke Abbey. Credit: Debbie Alston

Prepared by the Lowland Derbyshire Biodiversity Partnership

This document provides the background information for the Lowland Derbyshire Biodiversity Action Plan 2011-2020.

Last updated November 2011

Grassland Habitats in Lowland Derbyshire

Contents

	Page
1. Introduction	3
1.1 Definition of semi-natural grassland	3
1.2 Grassland habitats in the European and UK biodiversity context	3
1.3 Grassland types in Lowland Derbyshire	4
1.4 Major influences on biodiversity in Lowland Derbyshire grasslands	5
1.5 Landscape Character Assessment	5
1.6 Species associated with semi-natural grassland	7
1.7 Extent of semi-natural grassland in Lowland Derbyshire	7
2. Lowland meadows	10
2.1 Distribution of lowland meadow in Lowland Derbyshire	12
3. Calcareous grasslands	14
3.1 Distribution of semi-natural calcareous grassland in Lowland Derbyshire	16
4. Lowland dry acid grasslands	18
4.1 Distribution of dry acid grassland in Lowland Derbyshire	20
5. Floodplain grazing marsh	22
5.1 Floodplain grazing marsh in Lowland Derbyshire	24
Table 1: Lowland Derbyshire BAP Grassland types - definitions	4
Table 2: Semi-natural grassland habitats characteristic and appropriate within each Landscape Character Type	6
Table 3: Distribution and extent of grassland within the LBAP area	8
Figure 1: Map of Grassland types in Lowland Derbyshire	9
Figure 2: Map of Lowland Meadow in Lowland Derbyshire	11
Figure 3: Map of Lowland Calcareous grassland in Lowland Derbyshire	15
Figure 4: Map of Lowland Dry Acid grassland in Lowland Derbyshire	19
Figure 5: Map of Potential floodplain grazing marsh in Lowland Derbyshire	23
Appendix 1: Species for which semi-natural grassland is a key habitat in Lowland Derbyshire	26

1. Introduction

1.1 Definition of semi-natural grassland

Semi-natural grasslands are plant communities where the vegetation consists of a mixture of native grasses, wild flowers, sedges and mosses. The species composition has not been substantially modified by cultivation or regular use of fertilisers or herbicides. These grasslands are kept open by the activities of grazing animals, usually domestic livestock, but often complemented by wild herbivores such as deer and rabbits. More rarely, fire can play a role in maintaining grassland vegetation. Grasslands tend to vary in height from a few centimetres to a metre or so depending upon the local physical conditions and the timing and intensity of grazing. Lowland semi-natural grasslands are generally enclosed meadow or pasture land occurring at altitudes of less than 300m in the UK. Today, all meadows and pastures are best viewed as semi-natural. They have developed in close association with pastoral farming practices which began in north-western Europe 6000 years ago. However, they have their origins in the natural grasslands of tundra, mountains, coastlines and woodlands that would have existed after the last Ice Age and been maintained by a combination of wild grazing animals, fire and harsh environmental conditions.

1.2 Grassland habitats in the European and UK biodiversity context

Semi-natural grasslands rich in wild flowers, comprising both **grazed pastures** and **hay meadows**, have historically dominated much of the farming landscape in north-west Europe. These grasslands, close to farms and settlements, were traditionally managed with extensive low input livestock and mixed farming systems that favoured the maintenance of diverse grasslands.

Grazed pastures are typically grazed at various times through the year. The vegetation is often kept quite short, so taller plants often found in meadows are absent. Species able to thrive and dominate the sward include various grasses and rosette or creeping herbs as well as small blue-green sedges. The choice of grazing animal affects plant composition of the sward, in the different characteristic heights of grazing and the selection of preferred species. Plants have different degrees of tolerance of repeated defoliation. Light, mixed grazing, (cattle and sheep) produces a variety of sward height, allowing some plants to flower and set seed, whilst most other plants spread vegetatively, by roots and runners. Very heavy grazing will damage or eliminate plants by overgrazing and trampling.

Management of **hay meadows** allows plants to grow tall, flower and set seed before cutting. Shorter plants of grazed pasture are less frequent in hay meadows. The process of making hay helps to ripen and release seed. Shedding of seed is essential for plants such as the annual yellow-rattle, which must grow from seed each year. After mowing, when re-growth is adequate, the hay meadow is grazed. Hay meadow species include late summer invertebrates like bees and hoverflies; mammals such as the brown hare; birds such as skylark, grey partridge and tree sparrow, plus barn owls which need diverse grasslands for hunting prey, and fungi like the pink waxcap. All depend on unimproved grassland; all are key aspects of biodiversity. These species have all been adversely affected by the change from flower-rich hay meadows to the so-called **'improved'** meadows, which are actually species-poor and cut for silage.

1.3 Grassland types in Lowland Derbyshire

Due to its complex geological composition, Lowland Derbyshire has a number of priority grassland types. Table 1 below provides details on the different types, and their relevant National Vegetation Classifications.

Table 1: Lowland Derbyshire BAP Grassland types – definitions

National Broad Habitat types and Priority Habitats	Definition	National Vegetation Classifications occurring in lowland Derbyshire
Lowland Meadows	Neutral grassland on soils neither too acid nor alkaline or on limestone & gritstone if sufficient depth of soil to mask chemical character of underlying rock.	MG4, MG5, MG8
Calcareous Grassland Lowland calcareous grassland (includes magnesian limestone grasslands)	Developed on basic soils; may contain a percentage of bare soil and rock and an open sward.	CG2, CG3, CG4, CG5 CG7
Acid Grassland Lowland dry acid grassland	On acidic soils with pH lower than 5.5 and on areas where leaching creates acid conditions.	U1, U2, U4
Calaminarian Grassland	On substrates characterised by high levels of heavy metals such as lead, typical in former leading mining areas.	OV37
Purple moor grass and rush pasture	On poorly drained, usually acidic soils in areas of high rainfall.	
Coastal and Floodplain Grazing Marsh	On periodically inundated pasture or meadow with ditches which maintain water levels	Can include MG9, MG10 and MG11

1.4 Major influences on biodiversity in Lowland Derbyshire grasslands

Between 1930 and 1984 semi-natural lowland grassland has decreased by around 97% in England and Wales. There are less than 15,000ha of unimproved species-rich neutral grassland in the UK. In Derbyshire it is estimated that there has been an 80 to 91% decline between 1984 and 1999. Some species-rich grassland was previously cultivated (as ridge and furrow remnants indicate) but may have remained as pasture for several centuries. Modern ploughing has removed much ridge and furrow over the past thirty years.

Today most farmland grassland is 'improved' species-poor grassland, temporary (**ley**) or permanent grasslands resulting from ploughing and re-seeding, and the widespread use of inorganic fertilisers or slurry. Worming compounds adversely affect dung beetles, dung flies and other creatures which decompose animal droppings, and so further reduce food availability to other species. These grasslands are very limited in terms of biodiversity. Where management changes from hay-making to silage, the crop needs to be consistent in quality to provide good winter fodder; therefore agriculturally improved grassland or re-seeded pasture containing only a few grasses like perennial rye-grass, Yorkshire fog and timothy with common herbs like dandelion, clover and buttercups are preferred by farmers. Early and frequent cuts further reduce the value of grasslands for many species, either through loss of shelter, breeding habitat or food resources. For example, ground-nesting birds have insufficient time to breed successfully before the grass is cut and their nests destroyed.

1.5 Landscape Character Assessment

In 2003 Derbyshire County Council carried out a Landscape Character Assessment for the county, excluding large urban areas, such as the built parts of Derby City and Chesterfield. The project identified where grassland habitats would be most appropriate in maintaining landscape character and local distinctiveness. The Assessment promotes the creation and management of grassland types that would be most appropriate in maintaining landscape character and local distinctiveness. This approach has been largely reflected in the landscape scale approach within the Lowland Derbyshire Biodiversity Action Plan. Table 2 shows the relationship between landscape character type and grassland type.

Poulter Country Park Nature Reserve.
Credit: Debbie Alston

Hebredian sheep grazing at Foremark Reservoir.
Credit: Debbie Alston

Table 2: Semi-natural grassland habitats characteristic and appropriate within each Landscape Character Type

P Primary habitat - prominent and a key characteristic
S Secondary habitat - variable and a local characteristic
L Locally Significant - unusual, often a minor characteristic

Action Area name within this LBAP	Character Area	Landscape Character Type	Neutral grassland. Lowland meadows	Lowland calcareous grassland (including Magnesian limestone)	Lowland dry acid grassland
Peak Fringe	Derbyshire Peak Fringe and Lower Derwent	Enclosed Moorland	P		P
		Wooded Slopes and Valleys	P	L	S
		Wooded Farmlands	P		S
		Gritstone Heaths & Commons	P		P
		Settled Farmlands	P		
		Riverside Meadows	P		
Rother and Doe Lea Valleys Erewash Valley	Notts, Derbyshire & Yorkshire Coalfield	Wooded Hills & Valleys	P		S
		Coalfield Village Farmlands	P		S
		Estate Farmlands	S		S
		Wooded Farmlands	P		S
		Coalfield Estatelands	P		
		Riverside Meadows	P		
		Plateau Estate Farmlands	S		S
Magnesian Limestone	Southern Magnesian Limestone	Limestone Farmlands		P	
		Limestone Gorges	S	P	
Claylands	Needwood & South Derbyshire Claylands	Settled Farmlands	P		S
		Settled Plateau Farmlands	P		S
		Sandstone Slopes & Heaths			P
		Estate Farmlands	S		S
		Riverside Meadow	P		
Trent and Dove Valleys	Trent Valley Washlands	Lowland Village Farmlands	P		
		Wet Pasture Meadows	P	S	
		Riverside Meadows	P		

Table 2 outlines appropriate semi-natural grassland habitats by LBAP action area, Character Area and Landscape Character Type. This information can be used by a variety of interest groups including developers, planners, farmers and wildlife groups when considering the appropriateness of particular developments, planting and habitat creation schemes in a specific area.

Action Area name within this LBAP	Character Area	Landscape Character Type	Neutral grassland. Lowland meadows	Lowland calcareous grassland (including Magnesian limestone)	Lowland dry acid grassland
National Forest area	Melbourne Parklands	Estate Farmlands	S		P
		Wooded Estatelands	P		P
		Sandstone Slopes & Heaths			P
		Riverside Meadows	P		
	Leicestershire & Derbyshire Coalfield	Coalfield Village Farmlands	P		S
	Mease & Sence Lowlands	Village Estate Farmlands	P		
		Riverside Meadows	P		

Note: Derby is omitted from this list because it is not, in itself, a Character Area.
The administrative boundary of the city of Derby actually straddles four Character Areas: the Needwood and South Derbyshire Claylands, the Trent Valley Washlands, the Derbyshire Peak Fringe and Lower Derwent, plus the Notts, Derbyshire and Yorkshire Coalfield.

1.6 Species associated with semi-natural grassland

There are many species associated with semi-natural grassland habitats. Appendices 1 and 2 list UKBAP Priority Species as well as Red Data Book and other locally important species associated with grassland habitats.

1.7 Extent of semi-natural grassland in Lowland Derbyshire

Lowland Derbyshire still retains a grassland assemblage important throughout the East Midlands region. It contains a wide variety of types of semi-natural grassland, but the extent of all these types has declined rapidly in recent years as farming practices have changed.

Throughout Lowland Derbyshire semi-natural grasslands of different types can occur in close proximity to one another, irrespective of the underlying substrate. Major influences include the position on a slope, the type of management, the aspect and altitude. Semi-natural grasslands may also grade very quickly into wetter grassland and mire habitats, where rushes are often characteristic.

Derbyshire Wildlife Trust's audit of semi-natural grassland in Lowland Derbyshire (1997-2003), estimated that in 2003 there were 1,746 hectares of semi-natural grasslands here . Since that report was published, further survey has divided them into different grassland types, and whether or not they have Priority or Sub-priority status. Currently it is understood that there are 708 hectares of Priority grassland habitats and 3426 hectares of semi-improved (Sub-priority) grassland in the LBAP area. Table 3 and Figure 1 both list and map the distribution of the different grassland types across this LBAP area.

Table 3: Distribution and extent of grassland within the LBAP area.
(This table does not include newly created grassland)

LBAP Action Area	Priority Grassland resource	% of total LBAP priority grassland resource	Priority Lowland Meadow	Sub-priority Lowland Meadow	Priority Lowland Dry Acid Grassland	Sub-priority Dry Acid Grassland	Priority Lowland Calcareous Grassland	Sub-priority Calcareous Grassland	Priority Calami-narian Grassland	Priority Rush Pasture
Magnesian Limestone	56 ha	7.9 %	4 ha	60 ha	3 ha	-	31 ha	36 ha	-	14 ha
Rother and Doe Lea valleys	27 ha	3.8 %	19 ha	186 ha	3 ha	21 ha	5 ha	57 ha	-	-
Peak Fringe	415 ha	58.6 %	235 ha	706 ha	164 ha	731 ha	8 ha	4 ha	1 ha	7 ha
Erewash Valley	51.2 ha	7.2 %	50 ha	210 ha	1.2 ha	31 ha	-	6 ha	-	
Claylands	115 ha	16.2 %	42 ha	238 ha	58 ha	140 ha	-	-	-	15 ha
Derby	8 ha	1.2 %	7 ha	115 ha	0.8 ha	2.1 ha	0.2 ha	2 ha	-	-
Trent and Dove Valleys	8 ha	1.2 %	6 ha	61 ha	2 ha	3 ha	-	-	-	
National Forest area	28 ha	3.9 %	12 ha	647 ha	8 ha	45 ha	8 ha	-	-	-
Totals	708.2 ha		375 ha	2,348 ha	240 ha	973.1 ha	52.2 ha	105 ha	1 ha	36 ha

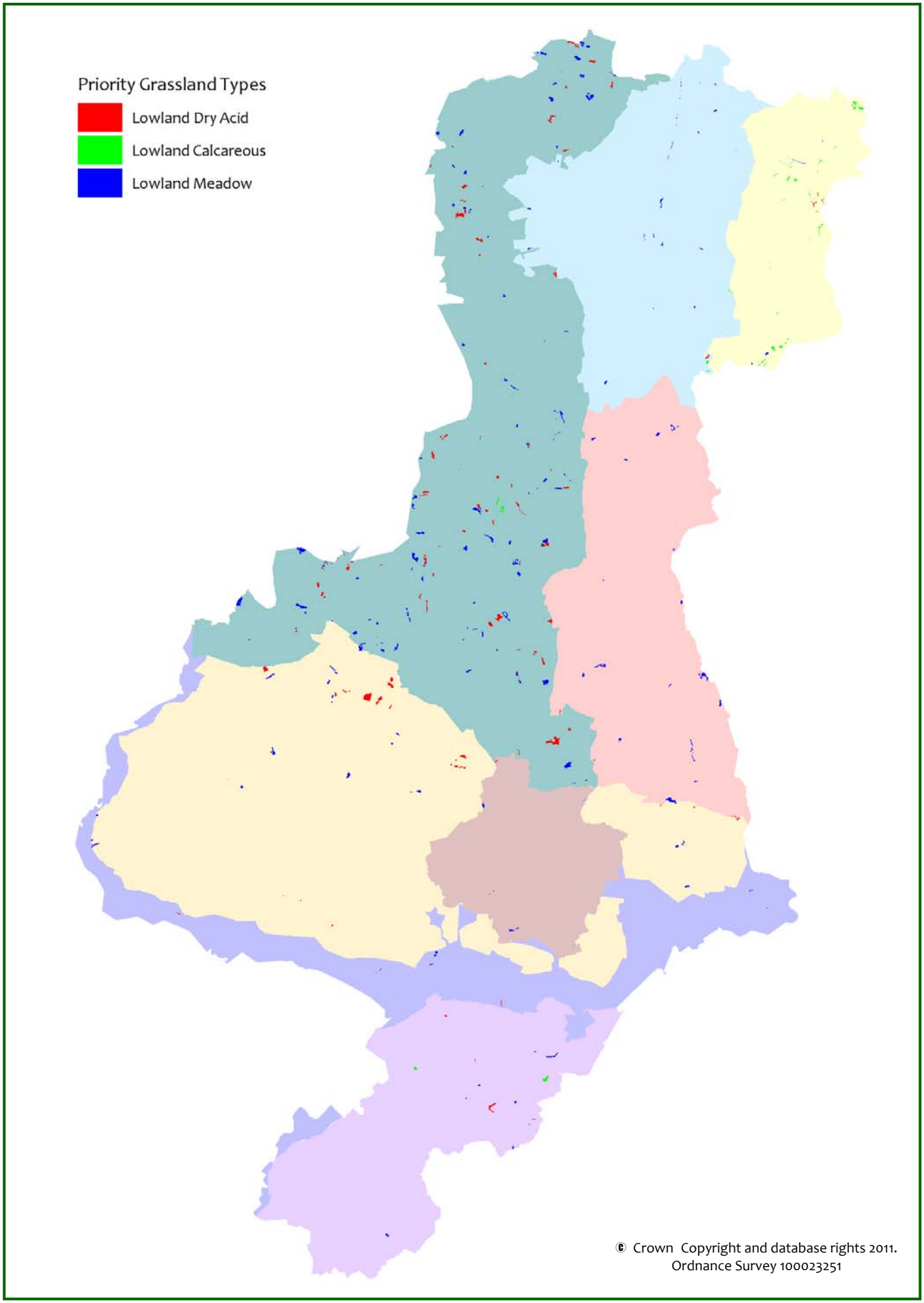


Figure 1: Priority Grassland types in Lowland Derbyshire

2. Lowland Meadows

Traditionally managed as hay meadows or pastures, Lowland Meadows contain a high proportion of broad-leaved flowering species relative to grasses, especially if undisturbed for long periods. These grasslands are characteristically composed of the following grass species: crested dog's-tail, red fescue, Yorkshire fog, yellow oat grass, meadow foxtail, sweet vernal grass and creeping bent. Distinctive and frequently encountered herbs include: common knapweed, ox-eye daisy, cat's-ear, meadow vetchling and bird's-foot-trefoil, and occur with the **MG5a** National Vegetation Classification (NVC) sub-community type. Where lowland meadows overlie calcium-enriched soils, species like lady's bedstraw, salad burnet and quaking grass may occur; this is characteristic of the **MG5b** NVC sub-community. Over calcium deficient, more acidic soils, species like heath grass, devil's-bit scabious, tormentil, betony and bitter vetch are to be found (NVC: **MG5c**).

There is therefore a degree of overlap both with acid and calcareous grassland types. On deeper soils growth can be quite luxuriant with many herbs prominent. Typically, Lowland Derbyshire's lowland meadows can contain many species of rare or local occurrence, including greater butterfly orchid, adder's tongue fern, pepper saxifrage, water avens, cowslip, sneezewort, meadow barley, twayblade and lesser hawkbit. In valley bottoms and wet, north facing slopes where soils are still relatively neutral, a number of rarer grassland communities may occur. The **MG4** NVC community is characterised by great burnet, meadowsweet, autumn hawkbit and meadow foxtail, whilst the **MG8** community has ragged robin, marsh marigold, lady's mantle, marsh bedstraw and a variety of sedges. Lowland meadows are estimated to comprise 53% of the remaining priority grassland resource.

Unimproved lowland meadow amounts to 375 ha, located mainly in the Peak Fringe. In addition, there is 2,348 ha of species-rich semi-improved lowland meadow grasslands that retain sufficient floristic diversity to be of nature conservation value. They remain of high value and importance as they have the potential for restoration and act as reservoirs for genetic diversity which can facilitate the colonisation of adjacent countryside.

Left: Southern marsh orchid. Credit: Debbie Alston
Right: Cardales Meadow, Findern. Credit: Debbie Alston

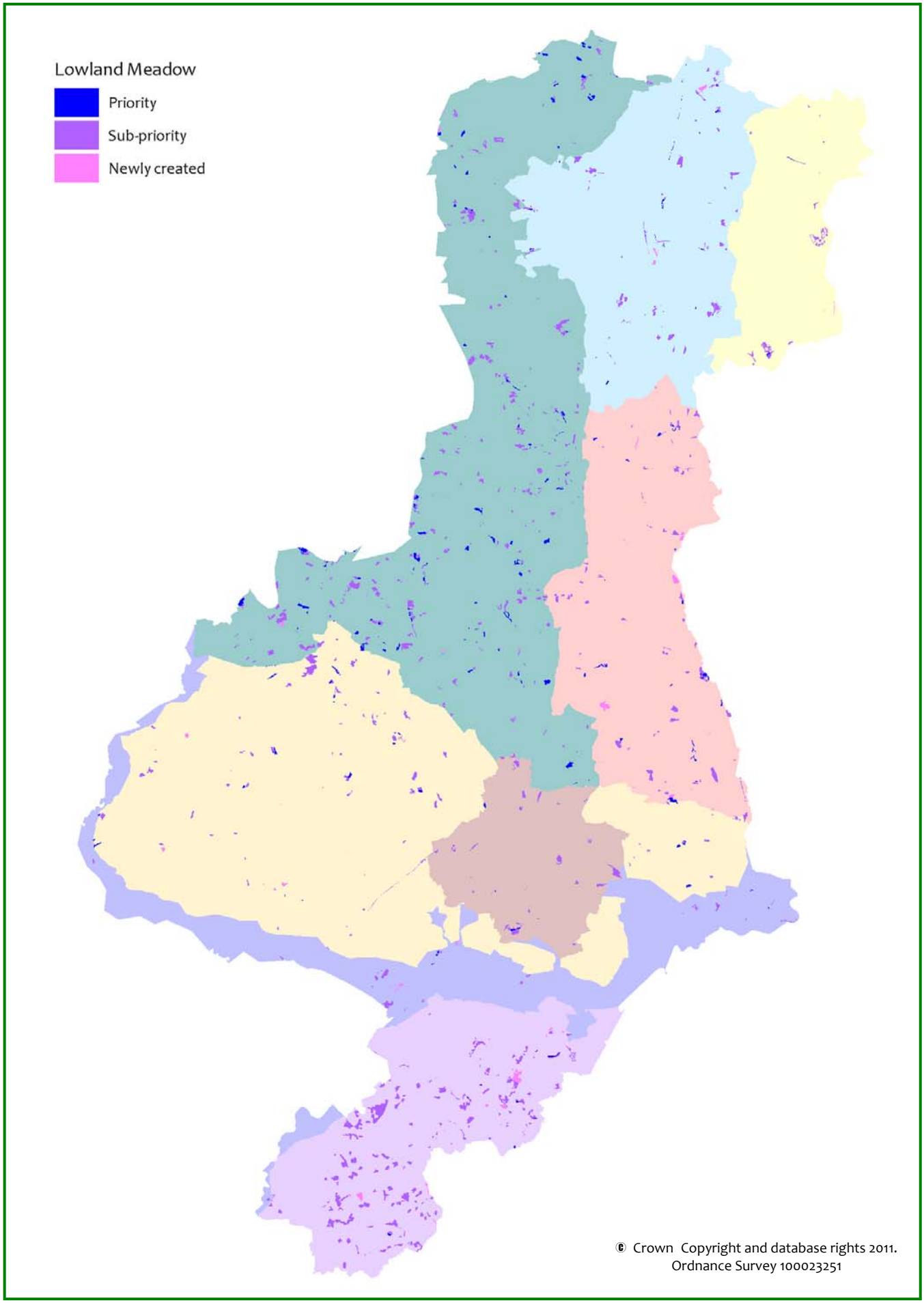


Figure 2: Lowland Meadow in Lowland Derbyshire

2.1 Distribution of Lowland Meadow in Lowland Derbyshire

The distribution of lowland meadow is shown in Figure 2 and Table 3. Further commentary on their extent and location in the various LBAP Action Areas is given below:

2.1.1 Magnesian Limestone

The deeper soils of the limestone plateau are improved for arable production. Only in the grips and on areas such as railways embankments and derelict land where deeper soils have not masked the underlying rocks, can tiny areas of lowland meadow still be found.

2.1.2 Rother and Doe Lea valleys

In the north of this area the best priority lowland meadow occurs in places associated with the mining industry. These are fields which have been saved from mining activity, or those which have been sown during land restoration and managed subsequently and are now considered to be sufficiently species-rich. Good examples are be found at Poolsbrook Country Park and Holmebrook Country Park. Elsewhere there is a relatively large resource of sub-priority quality grassland, much of which is currently under restorative management. Areas of newly created lowland meadow have been sown on former mining sites at Arkwright, Park Brook and Bolsover tip, which will help provide vital semi-natural corridors through large sites.

2.1.3 Peak Fringe

The Peak Fringe area supports over 58% of the remaining lowland meadow in the whole LBAP area. The varied topography and geology of the Peak Fringe together with a moister and cooler climate, promotes a more intimate landscape with typically smaller farms and fields. Lowland meadow is well represented, occurring in valley bottoms and across plateaus, or where deeper soils are present. Both hay meadows and pastures are present and, in places, relatively large sites still exist such as those surrounding and to the west of Carsington Water, south of Wirksworth, Brackenfield, South Wingfield, the Moss Valley and near Ambergate.

In addition to the large resource of Priority Habitat, there is a considerable area of semi-improved (sub-priority) lowland meadow which still retains botanical diversity and provides an important area for potential enhancement and a variety of opportunities for re-colonisation. In some places lowland meadow often occurs in a mosaic alongside acid and calcareous grasslands and also with mire communities and therefore can result in both wet and dry grasslands.

2.1.4 Erewash Valley

This is an area of intensive agriculture and extensive opencast coal extraction. Most lowland meadow occurs only as remnants in places which have been difficult to access. There are a number of urban fringe fields which are semi-improved in nature, some of which have been subject to mis-management, neglect or development. Along the Erewash and Nutbrook canals some semi-natural fields have become isolated and both dry and wet grasslands combine in important mosaics.

2.1.5 Claylands

Permanent pasture occupies much of this area but, because of agricultural improvements, very little is left that is priority. The remaining sites of Priority Habitat are scattered and small. They have often survived due to sympathetic management regimes or are on steep slopes and within inaccessible areas. There are few concentrations, but several sites occur near Ashbourne, Brailsford, Kirk Langley and Rodsley. There are several churchyards which retain species-rich grassland, and one or two commons and greens, for example Ashbourne Green.

There are areas of ridge and furrow, especially around Ashbourne, though these have declined in recent years. A feature of this area is the isolated hay meadows on small traditional family farms; farmers value the high herb content and hay in seasons when silage yields are poor. In some locations there are mosaics of grasslands, some managed as hay meadows, with yellow rattle in abundance, and others as pasture, with uncommon species such as burnet saxifrage and great burnet.

2.1.6 Derby

For such an urban area, Derby does have a surprisingly large lowland meadow resource. However this tends to be concentrated on a few key sites, many of which are now Local Nature Reserves, such as Allestree Park, Sinfin Moor, Mickleover Meadows and West Park Meadows.

2.1.7 Trent and Dove Valleys

Large areas in the valley have been lost to gravel workings, horticulture and to housing, with the largest remaining area north of the Trent lost to, and fragmented by, road construction. Some lowland meadow is still left on disused railway lines and canal towpaths, but many of these have been affected by pressures from recreational development and a lack of recent management. The few remaining fields are adjacent to areas of arable production and are very isolated. There are also very small areas on the south side of the River Trent along lanes, and on steep scarps and on the north of the Trent near Twyford with remnants of semi-natural grassland along the river, where flooding discouraged improvement until recently. Lowland meadow has been created on some former gravel working along the valley as part of land restoration schemes.

2.1.8 National Forest area

Despite large-scale agricultural improvement of grassland in this area, there are still pockets of lowland meadow which have managed to remained species-rich. The majority of these are associated with either the National Trust or Severn Trent estates, and these continue to be managed in a sympathetic way. Additional restoration and creation of lowland meadow has occurred under the National Forest Company's 'National Forest Tender Scheme' and 'Changing Landscapes Scheme'.

Grassy Field
Credit: Debbie Alston

3. Calcareous Grasslands

Calcareous grassland is an important habitat because of the wide range of plants and animal species it supports, although increasing isolation and fragmentation works towards reducing their species diversity. Some plants require bare earth for germination, whilst some of the invertebrates need mosaics of open ground and short turf.

Typically calcareous grasslands are characterised by a diversity of grasses. These include sheep's fescue, tor grass, upright brome, meadow oat grass and quaking grass. Associated herbs include common rock-rose, wild thyme, lady's bedstraw, quaking grass, greater knapweed, fairy flax, cowslip, hoary plantain, salad burnet and yellow wort where it occurs on magnesian limestone sub soils. These grasslands are typical of shallow soil conditions, often with bare soil/rock interspersed. They are covered by the National Vegetation Communities **CG2 CG3, CG4** and **CG5.**

The total resource within this LBAP area is tiny in comparison with lowland meadows and acid grasslands. Of all priority calcareous grassland (52.2 ha), 59% is magnesian limestone grassland which only occurs in the Magnesian Limestone area. The other significant resource of calcareous grassland within the Lowland Derbyshire LBAP area is on former railway lines, some of which are now incorporated into the expanding trails network. In addition, there are 105 ha of semi-improved (sub-priority) calcareous grasslands, of which 89% occurs within the magnesian limestone area, or on the scarp slope below Bolsover.

In addition to the magnesian limestone type of calcareous grassland, this LBAP area has a very small area of **calaminarian grasslands**. These are closely associated with the lead mining areas of Derbyshire. Calaminarian grassland is a Priority Habitat which has developed on soils rich in heavy metals, such as copper and lead. Vegetation succession is slowed by the toxicity of the minerals in the soil and these habitats are characterised by areas of bare ground and lead spoil heaps. Typical plants found on these areas include spring sandwort and alpine pennycress (both of which are know locally as 'leadwort') and mountain pansy. The majority of the county's calaminarian grassland resource is associated with the White Peak area.

Left: Leadwort near Ashover. Credit: Nick Moyes
Right: Magnesian Limestone grasslands at Poulter Country Park Nature Reserve. Credit: Debbie Alston

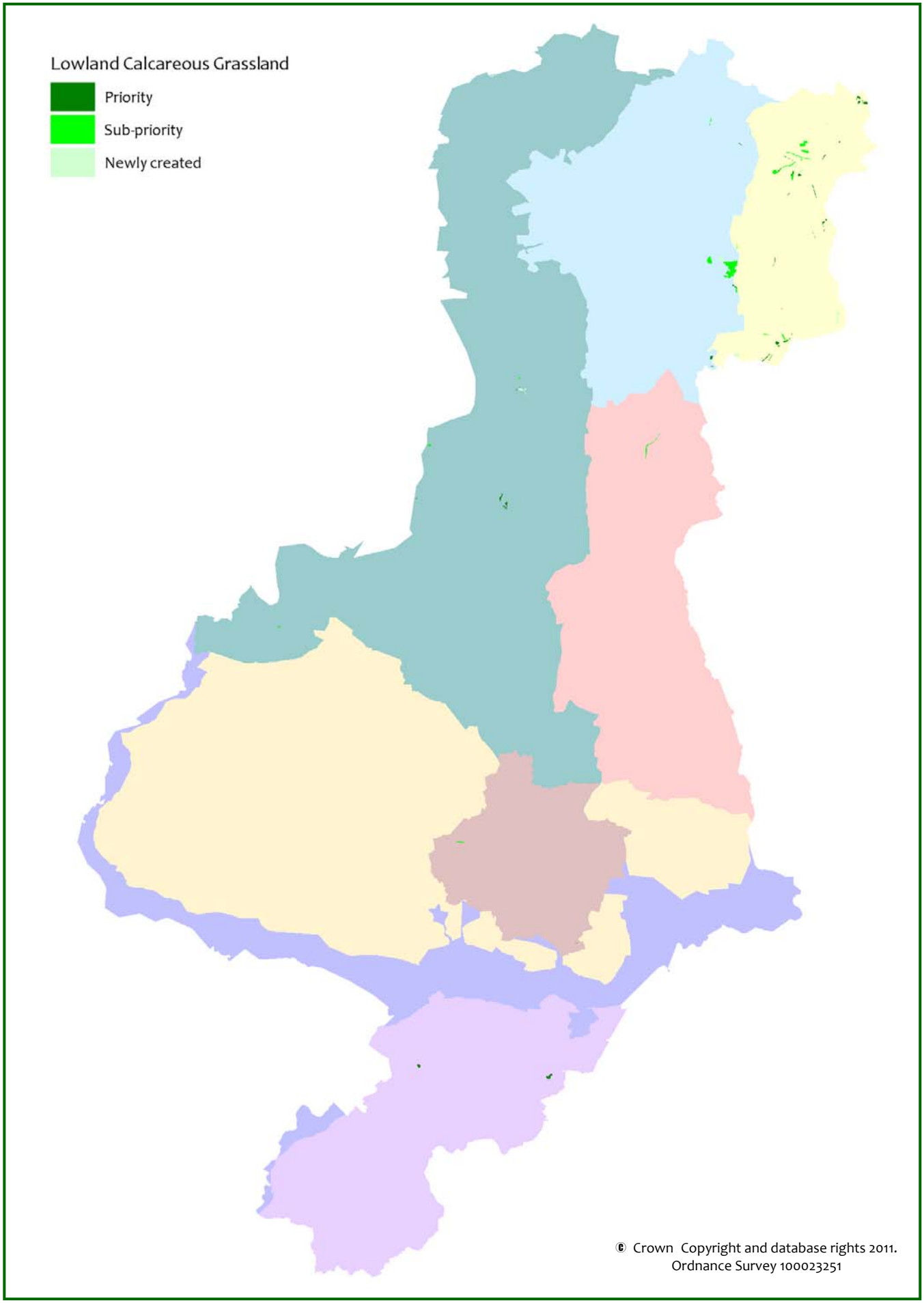


Figure 3: Lowland Calcareous grassland in Lowland Derbyshire

3.1 Distribution of Calcareous Grassland in Lowland Derbyshire

The distribution of lowland meadow is shown in Figure 3 and Table 3. Further commentary on its extent and location in the various LBAP Action Areas is given below:

3.1.1 Magnesian Limestone

The majority of calcareous grasslands in the LBAP area lie within the Magnesian Limestone Action Area. The landscape is characterised by plateaux intersected with steep sided valleys ('grips'). The deeper soils of the plateau have mostly been converted to arable production, so there is very little grassland left on farmland and most is 'improved' or of very low species diversity. Much of the remaining species-rich grassland is in small areas within the grips, at field edges, within the large woodlands, beside railway lines, (used and disused), or in roadside verges, on coal mine tips and in quarries. Magnesian Limestone grassland in Derbyshire is important for a number of species including yellow-wort (notable because in Derbyshire it occurs almost exclusively on the Magnesian Limestone and not on the Carboniferous limestone), bee orchid, fly orchid, dropwort, soft-leaved sedge and rare spring sedge. Rare and/or declining invertebrates such as the short-haired bumblebee, *Chrysolina violacea* (a leaf beetle), *Amara lucida* (a ground beetle) and dingy skipper are all associated with open grassland in the Magnesian Limestone area.

Some of the most diverse remaining grassland occurs on edges of towns and villages, sometimes associated with other features such as railways, for example at Creswell, Clowne, Whaley Thorns and Pleasley. Some of the biggest concentrations occurs around Markland and Hollinhill Grips SSSI, Pleasley and Poulter Country Parks. There are also small remnants in Pleasley Vale on both sides of the River Meden. Further losses continue to occur as grassland reverts to scrub because of a lack of cutting or grazing. Adjacent agri-environmental schemes occur at Markland and Hollin Hill Grips SSSI, which is managing the existing resource, restoring sub-priority grassland and creating additional grassland. More than 5 ha of calcareous grassland was created as part of land restoration at Shirebrook colliery. Priority grassland at Steetley Quarry remains under threat from proposed re-development of the site.

3.1.2 Rother and Doe Lea Valleys

Calcareous grassland can be found on the scarp slope below and adjacent to Bolsover Castle. This area of grassland is being increased by the addition of restoration and creation associated with one large Higher Level Stewardship scheme.

3.1.3 Peak Fringe

Calcareous grassland in this area is restricted to the limestone outcrops at Crich and Ashover. At Crich, the grassland is associated with Crich Quarry. Further areas of grassland will be created, or left to develop naturally, on this site as part of the quarry's restoration scheme. At Ashover, the grassland is associated with the Milltown area where areas have also been left to develop to calcareous grassland as part of the restoration scheme of Milltown Quarry. The Peak Fringe area has a long history of lead mining, which, in very restricted areas, has resulted in lead spoil and calaminarian grassland. Such areas can be seen at Black Rocks, at Bolehill and fields within the Milltown and Ashover areas.

3.1.4 Erewash Valley

The only area of calcareous grassland within this area can be found along the trails network at Newton.

3.1.6 Derby

A small area of calcareous grassland can be found at Chellaston Brickworks LNR. This is associated with the alabaster stone which was once quarried from the site. Other calcareous grassland can found along the disused Mickleover railway line, and at former Friargate Railway Station. The latter has a very open grassland community which has developed on limestone ballast.

3.1.8 National Forest area

A Carboniferous Limestone outlier at Ticknall has resulted in calcareous grassland within the Ticknall Limeyards SSSI and the lawns at Calke Abbey. Another small area of calcareous grassland is found at Bretby, on the mound once occupied by Bretby Castle.

Calcareous grassland around Crich Quarry.
Credit: Debbie Alston

4. Lowland Dry Acid Grasslands

Acid grassland develops mainly on acidic soils with a pH of 5 or lower, but may develop on areas where leaching has created locally acidic conditions. Though relatively species-poor compared to other semi-natural grasslands, it contains important communities with species that are rare and characteristic. Acid grasslands are transitional to other grassland types (neutral and calcareous) as well as other vegetation communities such as mires and lowland and upland heathland.

Derbyshire's lowland acid grasslands usually comprise of the following grasses: sheep's fescue, common bent and wavy hair grass, although mat grass is sometimes present. The more acidic sites can be quite poor with sheep's sorrel, heath bedstraw, tormentil, hawkbit and mouse-ear hawkweed amongst the commoner herbaceous associates. Richer sites can support a diverse range of species including heath milkwort, heath speedwell, violets, smooth hawk's-beard, common spotted orchid, pill sedge, devil's-bit scabious, field scabious, common restharrow, dyer's greenweed, burnet-saxifrage and common bird's-foot-trefoil. The grasslands resemble the National Vegetation Communities **U1** *Festuca ovina – Agrostis capillaris – Rumex acetosella* grassland, **U2** *Deschampsia flexuosa* grassland and **U4** *Festuca ovina – Agrostis capillaris – Galium saxatile* grassland. Where acid grasslands are derived from former heathland or occur in association with heaths, bilberry, heather and cross-leaved heath may occur. Where there has been limited agricultural improvement, Yorkshire fog, yarrow, white clover, meadow buttercup, daisy, and smooth-stalked meadow grass may occur. Though limited in plant species diversity, acid grassland is an important habitat because it supports other species, particularly ground nesting birds and invertebrates.

Remaining areas are located on steep valley sides and ridges and small parcels where agricultural improvement is uneconomic or difficult and locations such as road cuttings, where bedrock is not masked by more base-rich soil. In areas without appropriate management it is progressing to scrub, especially gorse.

Dry acid grasslands comprise 34% of the remaining priority grassland resource in the LBAP area. The total unimproved acid grassland resource is 240 ha, located almost exclusively in Peak Fringe and Claylands areas. In addition there is 973.1 ha of semi-improved, sub-priority acid grassland.

Meadow on the round-about by junction 29 of the M1.
Credit: Debbie Alston

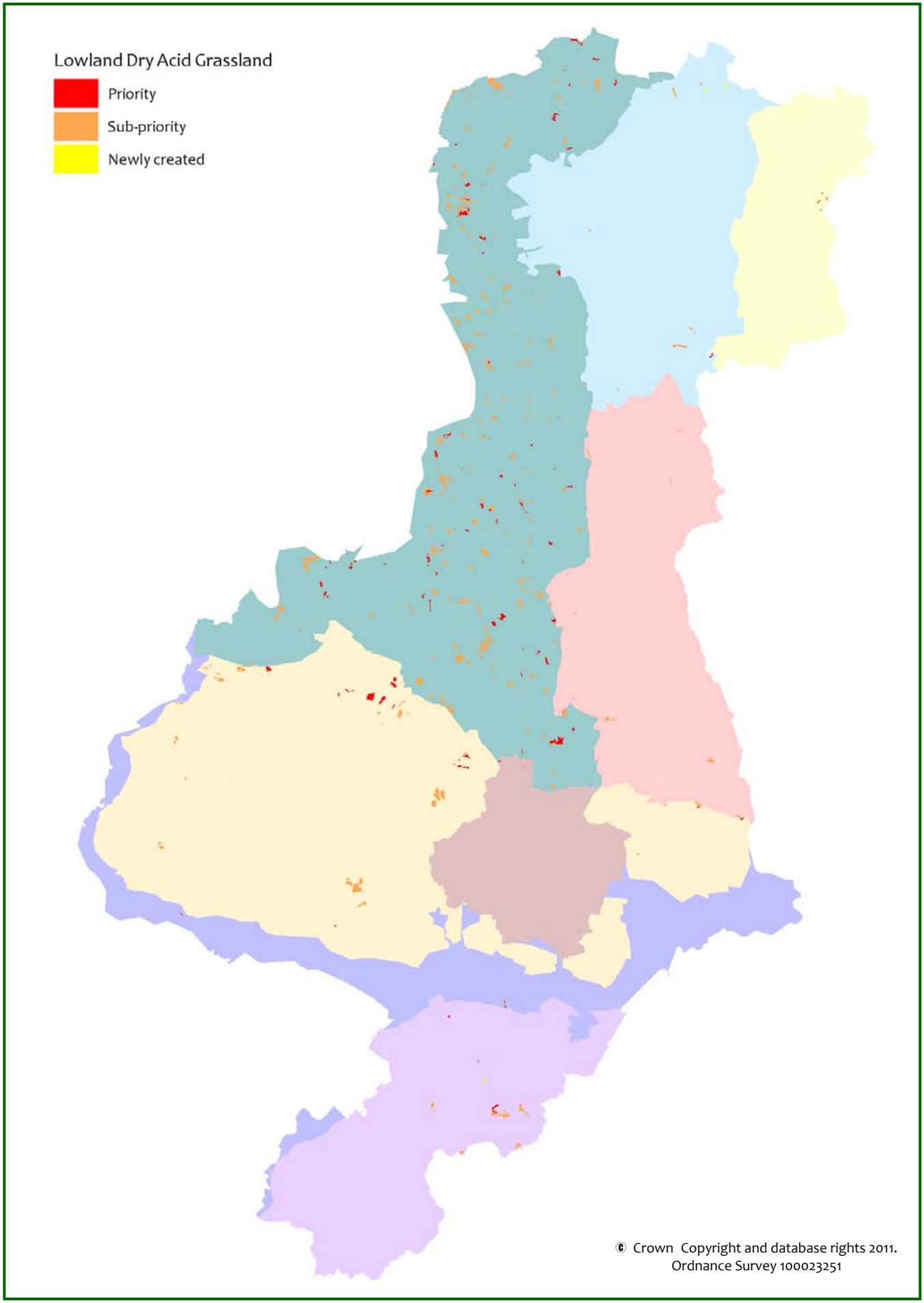


Figure 4: Lowland Dry Acid grassland in Lowland Derbyshire

4.1 Distribution of Dry Acid Grassland in Lowland Derbyshire

The distribution of this grassland type is shown in Figure 4 and Table 3. Further commentary on its extent and location in the various LBAP Action Areas is given below:

4.1.1 Magnesian Limestone

Acid grassland in this area is restricted to acidic soil conditions associated with former colliery spoils. All of the resource in this Action Area occurs on the former Creswell colliery.

4.1.2 Rother and Doe Lea Valleys

This area's acid grassland resource is associated with sandstone outcrops at Hardwick Hall and the Westthorpe and Killamarsh areas. Acid grassland was created at the Park Brook site as part of the reclamation programme.

4.1.3 Peak Fringe

This Action Area contains 68% of the remaining priority acid grassland within the Lowland Derbyshire BAP area. These are generally associated with the tops of ridges where sandstone, gritstone and shales are more prominent. There are some particularly interesting series of acid grasslands/grass heaths occurring on ridges and high points to the west of Belper in a series of small fields, some of which are reverting, through neglect, to bracken and gorse dominated grassland.

4.1.4 Erewash Valley

Acid grassland in this Action Area is mostly concentrated along the sandstone ridge which runs between Breadsall and Sandiacre. Place names, such as Dale Moor, Morley and Sandiacre give clues as to its underlying geology and past habitats.

4.1.5 Claylands

This area has 24% of all the priority acid grassland in the LBAP area, which is largely associated with the permian sandstone and bunter sandstone (Sherwood sandstone) ridges. The band of permian sandstone around the Hulland Ward and Mercaston area provides suitable conditions for acid grassland. A ridge of bunter sandstone in the coal measure series, cuts across the various areas, between Breadsall Moor and Stoney Clouds. This ridge has a mixture of ancient woodlands interspersed with acidic grasslands with species such as lousewort, and heath bedstraw. This area is also known for its waxcap grasslands. There is a belt of sandstones running east of Ashbourne in the Henmore valley, which supports acid grasslands.

4.1.6 Derby

One of the best areas of grassland within Derby is Woodlands Field, a small acidic field at the western side of Allestree Park. The field has had a number of different waxcaps recorded there, plus the recent discovery of moonwort.

4.1.7 Trent and Dove Valleys

Acid grassland within this area is limited to the sandstone exposure around the Ingleby area and Sudbury Hall in the west. Elsewhere the area has suitable substrate in the form of free-draining gravels and sands, but other factors including silt deposited during floods may mask the underlying geology.

4.1.8 National Forest area

The acid grassland in this area is largely semi-improved in nature, the only priority areas are at Foremark Reservoir and Mount Pleasant.

Top: A species-rich lowland dry acid grassland near Shirland. Credit: Debbie Alston
Bottom: Wessington Green. Credit: Debbie Alston

5. Floodplain Grazing Marsh

Floodplain is a term referring to seasonally waterlogged low-lying grassland where the drainage is poor or impeded. They often include small ditches and ponds as well as areas dominated by rushes. They are often 'improved' for agriculture and so can be botanically poor. Typical management may be grazing or cutting of hay or silage. Sites may contain seasonal water-filled hollows and permanent ponds with emergent swamp communities, but not extensive areas of tall fen species like reeds; although they may abut with fen and reed swamp communities.

The UK Biodiversity Action Plan states that the exact extent of floodplain 'grazing marsh' in the UK is not known, but it is possible there may be a total of 300,000 hectares. In England and Wales the remaining wet grassland is now approximately 220,000 hectares left (from a historic resource of 1.2 million hectares). England holds the largest proportion, with an estimated 200,000 ha remaining by 1994. However, only a small proportion of this grassland is semi-natural , which is necessary to support a higher diversity of native plant species (Perhaps only 5,000 hectares remain in England, with around 10,000 ha across the whole of the UK).

Floodplain grasslands may be botanically poor, often dominated by Yorkshire fog and tufted hair-grass , equating to the National Vegetation Classification (NVC) **MG9** or Yorkshire fog and soft rush, equating to the NVC **MG10**. Floodplain grasslands are important for a number of breeding waders such as snipe and lapwing. They are also important for invertebrates, amphibians and reptiles as well as mammals such as water voles.

Wyver Lane reserve in flood.
Credit: Richard Taylor

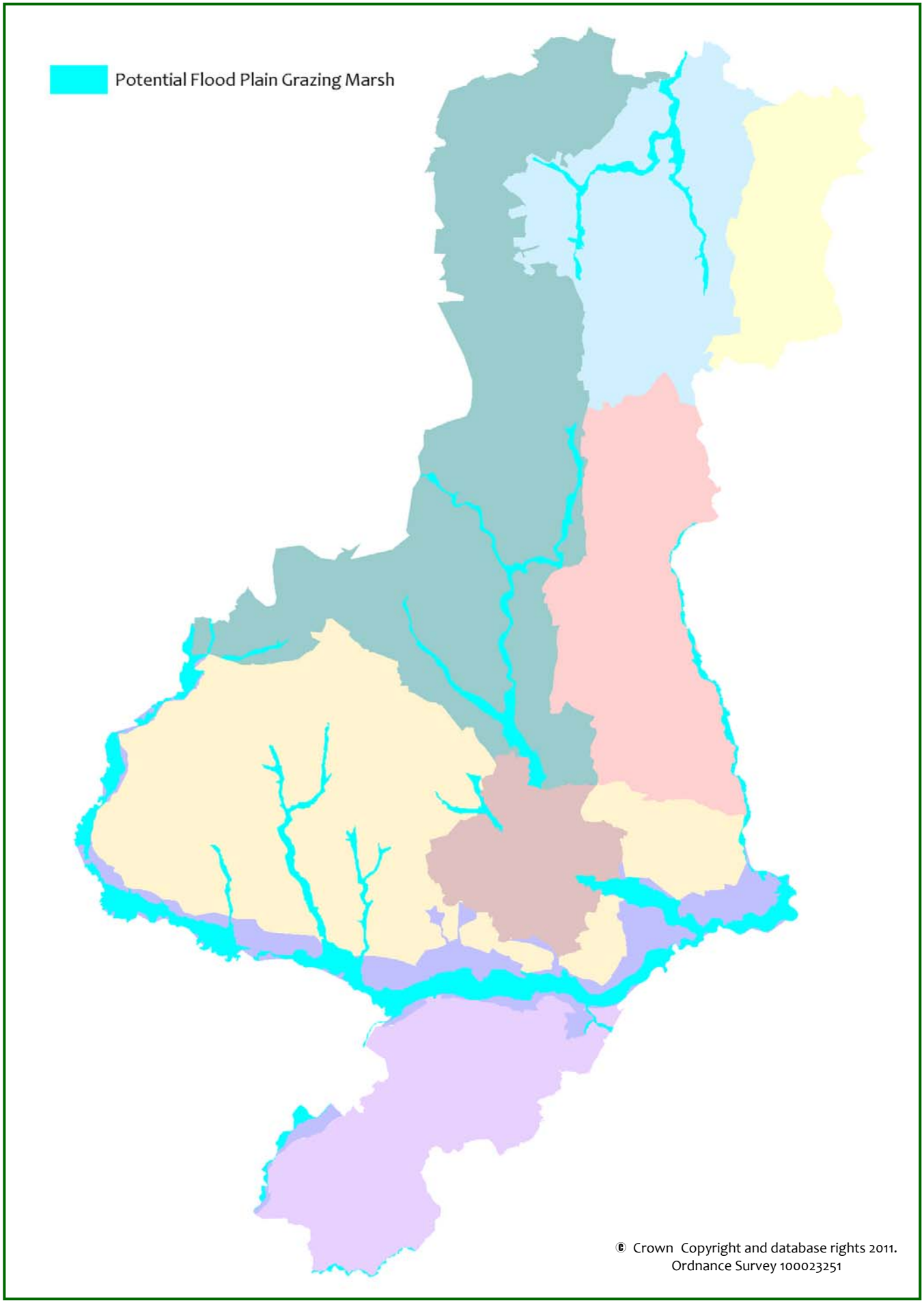


Figure 5: Potential floodplain grazing marsh in Lowland Derbyshire
(taken from the Riverside Meadows character type in the Landscape Character of Derbyshire)

5.1 Floodplain grazing marsh in Lowland Derbyshire

We do not know how much floodplain grazing marsh there is in lowland Derbyshire. The best guide we have is the amount of land identified within 'The Landscape Character of Derbyshire' which geographically has the *potential* to form floodplain grazing marsh.

The distribution of this potential floodplain grazing marsh, is shown in Figure 5. Further commentary on its extent and location in the various LBAP Action Areas is given below:

5.1.1 Magnesian Limestone

Wet grassland, but not necessarily floodplain grazing marsh is scarce on the limestone. It occurs where drainage is impeded and seepages occur including areas within two SSSIs: Ginny Spring and Hollinhill and Markland Grips. In the latter, mining subsidence is the cause.

5.1.2 River Rother and Doe Lea Valleys

The river valleys of the Rother and Doe Lea still retain some areas of wet grassland and although much of it is not particularly species-rich, it is important for birds, both as residents and on passage, along the north-south migration routes. One of the main causes of wet grassland was mining subsidence, often creating areas with standing water, known locally as flashes. These occurred particularly in the Doe Lea and Rother Valleys and are locally very important for birds and insects.

5.1.3 Peak Fringe

The River Derwent and its floodplain dominates this Action Area. The river flows southwards in a relatively flat bottomed narrow valley. Between Milford and Ambergate there are a number of wet meadows on both sides of the river. Although most are no longer particularly species-rich, they are nevertheless important for waders. Further north, between the Peak District, Chesterfield and Sheffield, there are several small valley systems with wet meadows, some of which have not been drained or improved. In addition there are pastures developed on the normally free-draining shales/ gritstone where clays have impeded drainage and wet, rushy fields have developed. There are also areas around operational and disused reservoirs, including Carsington, Ogston and Linacre, which continue to survive providing the water levels do not drop significantly and over long periods.

5.1.4 Erewash Valley

The River Erewash and its floodplain form the western boundary of this Action Area, and the land between the river and the canal is often wet, too. This Action Area, however, does not include the lowest reaches of the River Erewash where it joins the River Trent, as this falls within the Trent and Dove Valleys area. Other examples include the series of wet meadows at Hilcote/South Normanton, but these were changed significantly with the creation of fishponds. There are good examples of wet grasslands/marshes in such locations, but they are not always managed appropriately and are progressing to carr. As with the other river valleys there has been a lowering of water levels as land drainage and flood protection works, carried out in the 1960's, 1970's and early 1980's proceeded and this has dried out some wet meadows.

5.1.5 Claylands

A number of wet meadows still survive along some of the small brooks in this area. However, there are examples where the integrity of the wet grassland has been lost, due to their proximity to mills buildings, many of which have now been converted to dwellings with their gardens landscaped.

The northern part of the Claylands is one of the richest in the LBAP area for lowland wet meadows away from large river systems, but they are small and increasingly fragmented. As drainage and lowering of the water tables proceeds, they have become even more threatened. Mercaston Marsh and Mugginton Bottoms SSSI, on the border between this and Peak Fringe area, shows the range of habitats within a mosaic, which formerly would have been more widespread in the several similar small valley systems.

5.1.6 Derby

The River Derwent is the dominant river within Derby, but due to canalisation and development, the river has not retained its natural floodplain. Fields adjacent to the River Derwent, but north of Darley Abbey are within the floodplain, but are used in the manufacture of turf. Opportunities exist at several development sites along the river for the creation of wet grassland within the natural floodplain.

5.1.7 Trent and Dove Valleys

This area has the greatest resource of floodplain gazing marsh as in many parts the River Dove has largely retained its natural floodplain features, and although the floodplain is wide on the River Trent, flood defence mechanisms have restricted the flow in parts. Gravel extraction has provided opportunities to put back some floodplain grassland and with a number of schemes due to be completed within the 2011-2020 plan period. Small pockets of wet grassland also exist between the main rivers and other linear features such as roads, railways and canals.

5.1.8 National Forest area

The River Mease is the main river and forms the southern boundary of the area. The majority of the natural floodplain, however, falls on the Leicestershire side of the border.

Floodplain grazing marsh at Wyver Lane Nature Reserve.
Credit: Debbie Alston

Appendix 1: Species for which semi-natural grassland is a key habitat in Lowland Derbyshire

1.1 Priority Species (ie. UK BAP Species recorded in this Habitat in Lowland Derbyshire)

Birds

Curlew	*Numenius arquata*
Grey Partridge	*Perdix perdix*
Lapwing	*Vanellus vanellus*
Skylark	*Alauda arvensis*
Tree Sparrow	*Passer montanus*
Yellow Wagtail	*Motacilla flava*

Mammals

Brown Hare	*Lepus europaeus*
Brown long-eared bat	*Plecotus auritus*
Harvest mouse	*Micromys minutus*

Invertebrates

Butterflies

Dingy skipper	*Erynnis tages*
Grizzled skipper	*Pyrgus malvae*
Small heath	*Coenonympha pamphilus*

Moths

Argent and sable	*Rheumaptera hastata*

Amphibians

Great Crested Newt	*Triturus cristatus*

Reptiles

Slow worm	*Anguis fragilis*
Viviparous lizard	*Lacerta vivipara*
Grass snake	*Natrix natrix*
Adder	*Vipera berus*

Vascular Plants

Burnt orchid *	*Orchis ustulata*

** only found prior to 2000*

Top: Small heath . Credit: Debbie Alston
Middle Top: Brown hares. Credit: Christine Gregory
Middle Bottom: Grass snake. Credit Debbie Alston
Bottom: Harvest mouse. Credit: Derbyshire Wildlife Trust

1.2 Locally Important Species

An important feature of Local BAPs is the selection of locally important, threatened, declining or rare species which add local distinctiveness—the so-called "Local Red Data Book" species. Using Endangered Wildlife in Derbyshire (Elkington and Willmot, 1996) plus the Red Data List of Derbyshire's Vascular Plants (Moyes and Willmot, 2009), and with the help of county recorders, the following species have been selected for this category. Note: These lists identify only rare or locally distinctive species. Neither list should be interpreted as an inventory of 'typical' grassland species, or species characteristic of grassland habitats.

Fungi

Pink waxcap	*Hygrocybe calyptraeformis*

Birds

Kestrel	*Falco tinnunculus*
Buzzard	*Buteo buteo*
Golden plover	*Pluvialis apricaria*
Snipe	*Gallinago gallinago*
Redshank	*Tringa totanus*
Barn owl	*Tyto alba*
Meadow pipit	*Anthus pratensis*
Whinchat	*Saxicola rubetra*
Stonechat	*Saxicola torquata*
Wheatear	*Oenanthe oenanthe*

Mammals

Serotine bat	*Eptesicus serotinus*
Pipistrelle bat	*Pipistrellus pipistrellus*
Brandt's bat	*Myotis brandtii*
Whiskered bat	*Myotis mystacinus*
Noctule	*Nyctalus noctula*
Common shrew	*Sorex araneus*
Pygmy shrew	*Sorex minutes*
Badger	*Meles meles*

Bryophytes

Strap-leaved earth-moss	*Ephemerum recurvifolium*

Invertebrates

Coleoptera – Beetles

Glow worm	*Lampyris noctiluca*

Diptera – Hoverflies

Cheilosia mutabilis
Cheilosia praecox
Triglyphus primus
Xylota florum

Hemiptera – Bugs

Megalonotus chiragra

Lepidoptera – Butterflies

Dark green fritillary	*Argynnis aglaja aglaja*

Lepidoptera – Macro-moths

The forester	*Adscita statices*
Six-belted clearwing	*Bembecia scopigera*
Grey scalloped bar	*Dyscia fagaria*

Mollusca – slugs and snails

Leiostyla anglica

Narrow-leaved Bird's-foot-trefoil.
Credit: Isidro Martinez

1.2 Locally Important Species (contd)

Vascular Plants

Fragrant Agrimony	*Agrimonia procera*
Field Garlic	*Allium oleraceum*
Upright Brome	*Bromopsis erecta*
Clustered Bellflower	*Campanula glomerata*
Leers' Sedge	*Carex divulsa ssp. leersii*
Rare Spring-sedge	*Carex ericetorum*
Soft-leaved Sedge	*Carex montana*
Prickly Sedge	*Carex muricata ssp. lamprocarpa*
Pale Sedge	*Carex pallescens*
Common Calamint	*Clinopodium ascendens*
Frog Orchid	*Coeloglossum viride*
Hound's-tongue	*Cynoglossum officinale*
Early Marsh-orchid	*Dactylorhiza incarnata*
Small Cudweed	*Filago minima*
Common Cudweed	*Filago vulgaris*
Dyer's Greenweed	*Genista tinctoria*
Henbane	*Hyoscyamus niger*
Sheep's-bit	*Jasione montana*
Round-fruited Rush	*Juncus compressus*
Grass Vetchling	*Lathyrus nissolia*
Lesser Hawkbit	*Leontodon saxatilis*
Narrow-leaved Bird's-foot-trefoil	*Lotus glaber*
Spring Sandwort	*Minuartia verna*
Spiny Restharrow	*Ononis spinosa*
Green-winged Orchid	*Orchis morio*
Common Broomrape	*Orobanche minor*
Greater Butterfly-orchid	*Platanthera chlorantha*
Hoary Cinquefoil	*Potentilla argentea*
Spring Cinquefoil	*Potentilla neumanniana*
Saw-wort	*Serratula tinctoria*
Pepper-saxifrage	*Silaum silaus*
Common Meadow-rue	*Thalictrum flavum*
Subterranean Clover	*Trifolium subterraneum*
Marsh Arrowgrass	*Triglochin palustre*
Vervain	*Verbena officinalis*

Heathland Habitats
- Background Information -

Lowland Derbyshire LBAP

Heathland at Stone Edge near Holymoorside. Credit: Debbie Alston

Prepared by the Lowland Derbyshire Biodiversity Partnership

This document provides background information for the Lowland Derbyshire Biodiversity Action Plan 2011-2020.

Last updated November 2011

Heathland Habitats in Lowland Derbyshire

Contents

	Page
1. Introduction	3
1.1 Landscape Character Assessment	3
1.2 Species associated with heathland	5
1.3 Heathland in Lowland Derbyshire	5
Table 1: Heathland habitats characteristic and appropriate within each Landscape Character Type	4
Table 2: Details of Heathland resource in Lowland Derbyshire	5
Figure 1: Map of known areas of Heathland in Lowland Derbyshire	6
Appendix 1: Species for which Heathland is a key habitat in Lowland Derbyshire	8

1. Introduction

Lowland heathland and upland moorland are being dealt with together in the Lowland Derbyshire Local Biodiversity Action Plan. They have distinctive communities and faunas, but do contain a number of very characteristic and conspicuous species in common. Within this Local BAP area there is no true lowland heathland; in some areas heath is only a successional stage towards woodland, and needs to be considered in relation to those habitats. The main blocks of upland heathland or heather moorland occur within the Peak District in the Dark Peak and are covered by the Peak District LBAP. In addition, small remnants of heath developed on acid soils over limestone also occur in the Peak District.

Heathland is normally found on low nutrient status soils and is defined as having more than 25% dwarf shrubs. The soils are usually mineral soils but heathland is defined as also occurring on peaty soils where the peat is less than 0.5m thick. Heaths below 250m are described as **lowland heathland** while those above that height are **upland heathland** or moorland. Heathlands are an internationally important habitat, usually maintained by some form of management such as burning or grazing. Britain contains a large percentage of European heathland.

A variety of **bogs** (peatlands) exist in Derbyshire, but the majority are found in the Peak District, where valley bogs and blanket bogs are significant. In the LBAP area there are small **valley mires** and other very small areas of Sphagnum moss where a layer of peat, which is often very shallow, has developed. There are some specific issues, for example vegetation and hydrological management, that are peculiar to peat bogs, and these need to be considered, where relevant. Controlled rotational burning is commonly used as a management tool to maintain heathland, but it always produces uniform vegetation structure that can be detrimental to many species, especially reptiles.

Dry heathland consists of small bushes of heather, western gorse, bell heather and bilberry, interspersed typically with tormentil, sorrel, heath bedstraw, wavy hair grass and sheep's fescue. Scattered scrubby oaks and birches occur. Lichens may grow on the shrubby plants or on the bare ground between. Small heath and small copper butterflies occur on heathland along with argent and sable moth although the local distribution of the latter is unclear. The relatively few species which occur in heathland, compared with for example, calcareous grassland or ancient woodland, have led to its perception as an unimportant habitat; however the very specialised nature of the habitat has led to specific associations and the species are often confined to heathland and the conditions it provides.

The misconception of heathland as a low value habitat has led to much conversion to forestry. This causes fragmentation, but heath species can still survive as remnants along rides and on the edges. It is possible to restore heath from conifer plantations, and research around England has shown that it is also possible to restore heathland from arable land too.

1.1 Landscape Character Assessment

In 2003 Derbyshire County Council carried out a Landscape Character Assessment for the county, excluding large urban areas, such as the built parts of Derby City and Chesterfield.
The project identified where heathland habitat creation and management would be most appropriate in maintaining landscape character and local distinctiveness. This approach has been largely reflected in the landscape scale approach taken by the Lowland Derbyshire Biodiversity Action Plan.

Table 1 outlines appropriate heathland habitats by Natural Area, Character Area and Landscape Character Type. This information can be used by a variety of interest groups including developers, planners, foresters and wildlife groups when considering the appropriateness of particular developments, planting and habitat creation schemes in a specific area.

Table 1: Heathland habitats characteristic and appropriate within each Landscape Character Type

P Primary (main) habitat - prominent and a key characteristic
S Secondary habitat - variable and a local characteristic
L Locally Significant - unusual, often a minor characteristic

Action Area name within this LBAP	Joint Character Area	Landscape Character Type	Lowland heaths	Upland heaths
Peak Fringe	Derbyshire Peak Fringe and Lower Derwent	Enclosed Moors and Heaths		P
		Wooded Slopes and Valleys		
		Wooded Farmlands		
		Gritstone Heaths & Commons	P	
		Settled Farmlands		
		Riverside Meadows		
Rother and Doe Lea Valleys Erewash Valley	Notts, Derbyshire & Yorkshire Coalfield	Wooded Hills & Valleys		
		Coalfield Village Farmlands		
		Estate Farmlands		
		Wooded Farmlands		
		Coalfield Estatelands		
		Riverside Meadows		
		Plateau Estate Farmlands		
Southern Magnesian Limestone	Southern Magnesian Limestone	Limestone Farmlands		
		Limestone Gorges		
Claylands	Needwood & South Derbyshire Claylands	Settled Farmlands	S	
		Settled Plateau Farmlands	S	
		Sandstone Slopes & Heaths	P	
		Estate Farmlands	S	
		Riverside Meadow		
Trent and Dove Valleys	Trent Valley Washlands	Lowland Village Farmlands		
		Wet Pasture Meadows		
		Riverside Meadows		

Action Area name within this LBAP	Joint Character Area	Landscape Character Type	Lowland heaths	Upland heaths
National Forest area	Melbourne Parklands	Estate Farmlands	P	
		Wooded Estatelands		
		Sandstone Slopes & Heaths	P	
		Riverside Meadows		
	Leicestershire & Derbyshire Coalfield	Coalfield Village Farmlands		
	Mease & Sence Lowlands	Village Estate Farmlands	S	
		Riverside Meadows		

1.2 Species associated with heathland

There are many species associated with heathland habitats, some of which are priority biodiversity action plan species. Appendix 1 lists Priority and locally important species associated with heathland habitats.

1.3 Heathland in Lowland Derbyshire

Historically, heathland was more widely distributed than it is today. Cameron's 1959 publication on ***The place-names of Derbyshire*** includes a number of localities with heath/heather/heathland/moorland references. Such names existed primarily within the Peak Fringe Area, but also occurred in the Little Eaton area, south of Calke Abbey near Ticknall, and to the south of Swadlincote.

The Lowland Derbyshire area now has only tiny patches of heathland within areas of acid grassland and amongst acidic oak and birch woodland. It is primarily located within the millstone grit outcrops within the Peak Fringe Action Area. Other locations include the sandstone ridge between Little Eaton and Sandiacre and sandstone outcrops in the Claylands and National Forest area.

Table 2: Details of heathland resource in Lowland Derbyshire.

LBAP Action Area	Heathland resource (Priority Habitat)	Semi-Improved (Sub-Priority Habitat)	% of total LBAP area heathland resource
Magnesian Limestone	-		-
Rother and Doe Lea valleys		0.8ha	1%
Peak Fringe	42 ha	61 ha	97%
Erewash valley	1.1 ha	-	1%
Claylands	0.2 ha	-	>1%
Derby	-	-	-
Trent and Dove Valleys	-	-	-
National Forest area	0.2 ha	-	>1%
Totals	**43.5 ha**	**61.8 ha**	

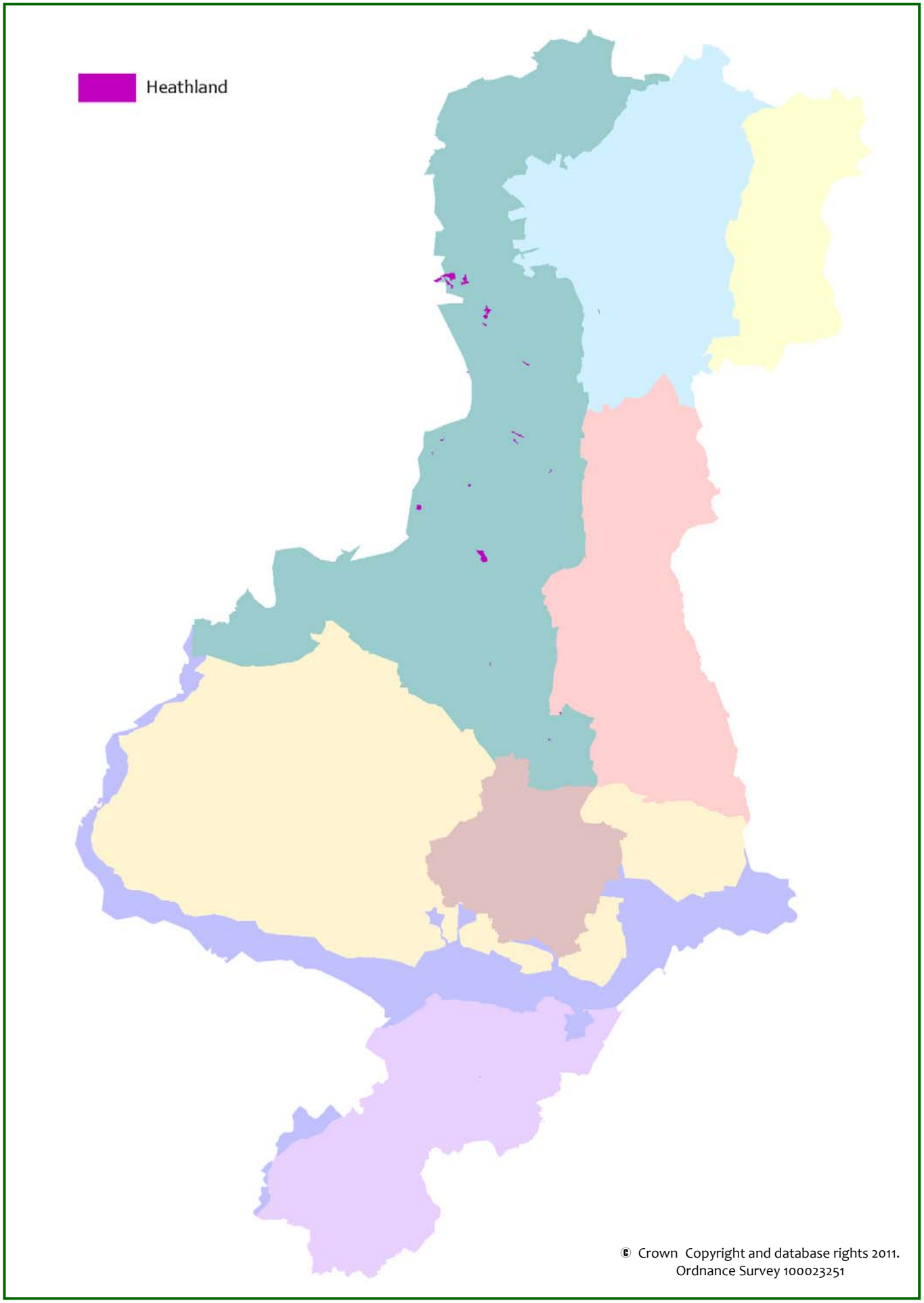


Figure 1: Known areas of heathland in Lowland Derbyshire

The largest area of heathland in this LBAP area occurs at Longstone Moor and Slagmill. Both sites are very close to the boundary of the Peak Park and are at the start of the extensive area of moorland on the Peak District Moors SPA. The millstone grit outcrop within the National Forest Area gives rise to a very small area of heathland within Carvers Rocks SSSI, south of Foremark Reservoir. There is also an area of heathland at Hulland Moss SSSI which is associated with an area of sphagnum bog.

In additional to the heathland sites shown on Figure 1, there are a number of sites which have small areas of heathland that occur as part of grassland and mire habitat mosaics. Wessington Green contains elements of heathland/acid grassland with mire adjacent to the spring. Crich Chase in the Derwent Valley contains areas of open heathland amongst oak and birch woodland and rocky outcrops. Other areas of heathland can be found on former sandstone quarries and other areas of exposed acidic rocks and soils, plus very tiny remnant areas of heathland in the Moss Valley.

There are significant areas of upland heathland and moorland just outside the Lowland Derbyshire LBAP area, this includes the area of the Dark Peak, outside the Peak District National Park, around Matlock moors.

Top left: Calvers Rocks. Credit Debbie Alston
Top right: Heather. Credit: Debbie Alston
Bottom left: Heather. Credit: Debbie Alston
Bottom right: Lowland heathland. Credit: Debbie Alston

Appendix 1: Species for which heathland is a key habitat in Lowland Derbyshire

Priority Species (ie. UK BAP Species recorded in this Habitat in Lowland Derbyshire)

Amphibians

Great crested newt	*Triturus cristatus*
Toad	*Bufo bufo*

Invertebrates

Dingy Skipper	*Erynnis tages*
Small Heath	*Coenonympha pamphilus*
Wall	*Lasiommata megera*
Argent and Sable moth	*Rheumaptera hastate*

Birds

Cuckoo	*Cuculus canorus*
Grey partridge	*Perdix perdix*
Skylark	*Alauda arvensis*
Tree Pipit	*Anthus trivialis*

Reptiles

Common Lizard	*Lacerta vivipara*
Adder	*Vipera berus*
Grass snake	*Natrix natrix*
Slow worm	*Anguis fragilis*

Locally Important Species ie. Local Red Data Book (RDB) or important species recorded within this Habitat in Lowland Derbyshire)

An important feature of Local BAPs is the selection of locally important, threatened, declining or rare species which add local distinctiveness—the so-called "Local Red Data Book" species. Using Endangered Wildlife in Derbyshire (Elkington and Willmot, 1996) plus the Red Data List of Derbyshire's Vascular Plants (Moyes and Willmot, 2009), and with the help of county recorders, the following species have been selected for this category.

Note: These lists identify only rare or locally distinctive species. Neither list should be interpreted as an inventory of 'typical' heathland species, or species characteristic of heathland habitats.

Vascular Plants

Common Cudweed	*Filago vulgaris*
Petty Whin	*Genista anglica*
a bramble	*Rubus durescens*

Birds

Barn owl	*Tyto alba*
Buzzard	*Buteo buteo*
Golden Plover	*Pluvialis apricaria*
Green Woodpecker	*Picus viridis*
Kestrel	*Falco tinnunculus*
Meadow pipit	*Anthus pratensis*
Stonechat	*Saxicola torquata*
Wheatear	*Oenanthe oenanthe*
Whinchat	*Saxicola rubetra*

Mammals

Common Pipistrelle bat	*Pipistrellus pipistrellus*

Amphibians

Palmate newt	*Triturus helveticus*

Invertebrates

Diptera

Cheilosia mutabilis
Triglyphus primus
Chrysogaster virescens
Trichopsomyia flavitarsis
Melanogaster aerosa

Lepidoptera

Green Hairstreak	*Callophrys rubi*

Wetland Habitats
- Background Information -

Lowland Derbyshire LBAP

Wollen Meadow wetland, Creswell. Credit: Debbie Alston

Prepared by the Lowland Derbyshire Biodiversity Partnership

This document provides background information for the Lowland Derbyshire Biodiversity Action Plan 2011-2020.

Last updated November 2011

Wetland Habitats in Lowland Derbyshire

Contents

	Page
1. Introduction	3
1.1 Wetland types in Lowland Derbyshire	3
1.2 Major influences on biodiversity in Lowland Derbyshire wetlands	5
1.3 Landscape Character	5
1.4 Associated Wetland Species	7
1.5 Extent of wetland habitats in Lowland Derbyshire	7
2. Rivers and Streams	10
2.1 Introduction	10
2.2 Rivers and Streams in Lowland Derbyshire	10
3. Standing open water	13
3.1 Introduction	13
3.2 Standing open water in Lowland Derbyshire	13
4. Lowland swamp, mires, fens and reedbeds	16
4.1 Introduction	16
4.2 Swamps, mires, fens and reedbeds in Lowland Derbyshire	17

Table 1: Lowland Derbyshire BAP Wetland types - definitions 3

Table 2: Wetland National Vegetation Classifications habitat types within Lowland Derbyshire 4

Table 3: Semi-natural wetland habitats characteristic and appropriate within each Landscape Character Type 6

Table 4: Distribution and extent of wetland habitats within the LBAP area 8

Figure 1: Map of Wetland habitats in the LBAP area 9

Figure 2: Map of Derbyshire's main rivers 11

Figure 3: Map of Pond density in Lowland Derbyshire 14

Figure 4: Map of Swamps, mires, fens and reedbeds in Lowland Derbyshire 19

Appendix 1: Species for which rivers and streams are key habitats in Lowland Derbyshire 20

Appendix 2: Species for which ponds, lakes and canals are key habitats in Lowland Derbyshire 21

Appendix 3: Species for which lowland swamps, reedbeds, mires and fens are key habitats in Lowland Derbyshire 23

1. Introduction

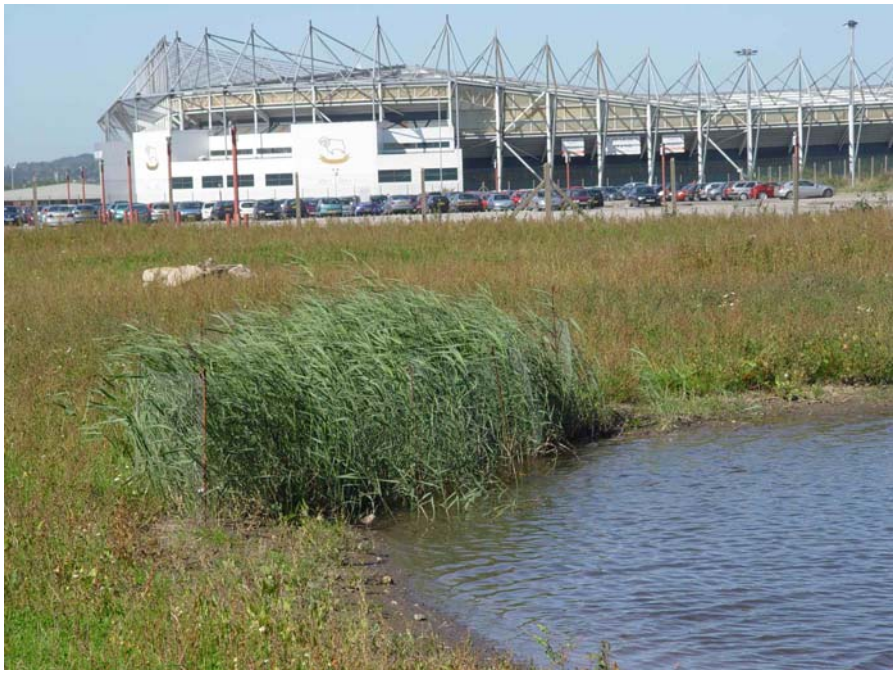
Wetlands are of great importance. Around 3,500 of the UK's invertebrate species live in fresh water and up to half of these live in ponds. There are a number of wetland Priority Habitats listed in the UK Biodiversity Action Plan. The following are present in Lowland Derbyshire: eutrophic standing waters, fens, lakes (mesotrophic , oligotrophic and dystrophic), ponds, reedbeds and rivers. Floodplain grazing marshland is referred to in the Grassland Habitats section).

1.1 Wetland types in Lowland Derbyshire

There are a number of different wetland habitat types in the LBAP area. Table 1 shows the national priority wetland habitat types, whilst Table 2 shows the National Vegetation Classification habitat types which have been recognised within the Lowland Derbyshire area.

Table 1: Lowland Derbyshire BAP Wetland types – definitions

Priority Habitats types	Definition
Eutrophic Standing waters	Lakes and large water bodies which have a high nutrient level
Lowland fens	Peatlands which receive water and nutrients from the soil, rock and groundwater as well as rainfall. Characterised by short vegetation with a high proportion of big mosses.
Mesotrophic Lakes	Lakes and large water bodies which have a middle range nutrient level. Lakes which have a very diverse aquatic plant community.
Oligotrophic and Dystrophic Lakes	Lakes and large water bodies with a very low nutrient level
Ponds	Permanent and seasonal standing water up to 2 hectares in size
Reedbeds	Wetlands dominated by stands of common reed *Phragmites australis*
Rivers	Linear water bodies with associated features, a dynamic flow of water and sediment



The Sanctuary LNR, Pride Park, Derby.
Credit: Nick Moyes

Table 2: Wetland National Vegetation Classifications habitat types within Lowland Derbyshire

Wetland type	National Vegetation Classifications occurring in Lowland Derbyshire
Swamp	S3 Greater tussock-sedge (*Carex paniculata*) – *Caricetum paniculatae* swamp S4 Common Reed *(Phragmites australis*) swamp and reedbed 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 (*Scirpus lacustris ssp lacustris*) swamp S10 Water horsetail (*Equisetum fluviatile*) swamp S12 Common reedmace (*Typha latifolia*) swamp S14 Branched bur-reed (*Sparganium erectum*) swamp S15 Sweet Flag (*Acorus calamus*) – *Acoretum calami* swamp S16 Arrowhead (*Sagittaria sagittifolia*) swamp S17 Cyperus sedge (*Carex pseudocyperus*) swamp S18 False-fox sedge (*Carex otrubae*) – *Caricetum otrubae* swamp S19 Common spike-rush (*Eleocharis palustris*) swamp S20 Grey club-rush (*Scirpus 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 S28 Reed Canary grass (*Phalaris arundinacea*) tall herb fen
Mires and fens	M6 Star Sedge (*Carex echinata*) - *Sphagnum recurvum/auriculatum* mire M10 Dioecious sedge (*Carex dioica*) – Common Butterwort (*Pinguicula* vulgaris) mire M22 Blunt-flowered rush (*Juncus subnodulosus*) – marsh thistle (*Cirsium* palustre) fen-meadow M23 Rush (*Juncus effusus / acutiflorus*) - Marsh bedstraw (*Galium palustre*) mire M25 Purple moor-grass (*Molinia caerulea*) – Tormentil (*Potentilla erecta*) M27 Meadowsweet (*Filipendula ulmaria*) – Angelica (*Angelica sylvestris*) mire
Standing open water	A5 Rigid hornwort (*Ceratophyllum demersum*) community A8 Yellow water-lily (*Nuphar lutea*) community A8c White Water-lily (*Nymphaea alba*) sub-community A9 Broad-leaved pondweed (*Potamogeton natans*) community A10 Amphibious bistort (*Persicaria amphibia*) A11 Fennel Pondweed (*Potamogeton pectinatus*) – Spiked water-milfoil (*Myriophyllum spicatum*) community A15 Canadian pondweed *(Elodea canadensis*) community A19 Common Water-crowfoot (*Ranunculus aquatilis*) community A20 Pond water-crowfoot (*Ranunculus peltatus*) community.

1.2 Major influences on biodiversity in Lowland Derbyshire wetlands

Derbyshire's varied landscape and geology has led to the distribution of the main clusters of wetland habitats that we see today in the LBAP area. The water and mineral extraction industry is, in part, responsible for the creation of much of the reedbed and many of the large water bodies here. Biodiversity on many of the large water bodies is coming under increasing recreational pressure. In part this pressure is leading to an increase in nutrient status and therefore a reduction in species diversity, especially aquatic plant species. Increasing demands for access to watersides and open water increasingly puts wildlife in conflict with other users.

The increase in nutrient and soil run-off from agricultural land is also having an influence on wetlands, especially ponds and lakes. Increased rainfall, especially following periods of dry weather is resulting in flash floods.

Invasive species are considered to be a major problem for wetland habitat biodiversity. Invasive plants are a particular problem as they spread quickly along rivers and streams.

1.3 Landscape Character

In 2003 Derbyshire County Council carried out a **Landscape Character Assessment** for the county, excluding large urban areas, such as the built parts of Derby City and Chesterfield. The project identified where wetland habitats would be most appropriate in maintaining landscape character and local distinctiveness. The Assessment promotes the creation and management of wetland types that would be most appropriate in maintaining landscape character and local distinctiveness. This approach has been largely reflected in the landscape-scale approach within this Lowland Derbyshire LBAP. Table 3 shows the relationship between landscape character type and woodland type.

Wyver Lane, Belper.
Credit: Debbie Alston

Table 3: Semi-natural wetland habitats characteristic and appropriate within each Landscape Character Type

P Primary (main) habitat - prominent and a key characteristic
S Secondary habitat - variable and a local characteristic
L Locally Significant - unusual, often a minor characteristic

Action Area name within this LBAP	Character Area	Landscape Character Type	Reed-beds	Lowland Fen meadows	Standing open water and canals	Rivers and streams
Peak Fringe	Derbyshire Peak Fringe and Lower Derwent	Enclosed Moorland				S
		Wooded Slopes and Valleys	S		S	P
		Wooded Farmlands	S	S	P	P
		Gritstone Heaths & Commons				
		Settled Farmlands		S	S	
		Riverside Meadows	P	P	P	P
Rother and Doe Lea Valleys Erewash Valley	Notts, Derbyshire & Yorkshire Coalfield	Wooded Hills & Valleys	S		S	P
		Coalfield Village Farmlands	S		P	P
		Estate Farmlands			S	P
		Wooded Farmlands	S		P	P
		Coalfield Estatelands	S	L	P	P
		Riverside Meadows	P	P	P	P
		Plateau Estate Farmlands				S
Magnesian Limestone	Southern Magnesian Limestone	Limestone Farmlands		L	S	P
		Limestone Gorges	S	L	S	P
Claylands	Needwood & South Derbyshire Claylands	Settled Farmlands	L	S	P	P
		Settled Plateau Farmlands			S	
		Sandstone Slopes & Heaths		L		
		Estate Farmlands	S	L		S
		Riverside Meadow				

Action Area name within this LBAP	Character Area	Landscape Character Type	Reed-beds	Lowland Fen meadows	Standing open water and canals	Rivers and streams
Trent and Dove Valleys	Trent Valley Washlands	Lowland Village Farmlands			S	S
		Wet Pasture Meadows		P	P	
		Riverside Meadows	P	P	P	P
National Forest area	Melbourne Parklands	Estate Farmlands			S	S
		Wooded Estatelands		S	P	P
		Sandstone Slopes & Heaths			S	S
		Riverside Meadows	P	P	P	P
	Leicestershire & Derbyshire Coalfield	Coalfield Village Farmlands	S		P	P
	Mease & Sence Lowlands	Village Estate Farmlands			S	P
		Riverside Meadows	P	P	P	P

Note: Derby is omitted from this list because it is not, in itself, a Character Area. The administrative boundary of the city of Derby actually straddles four Character Areas: the Needwood and South Derbyshire Claylands, the Trent Valley Washlands, the Derbyshire Peak Fringe and Lower Derwent, plus the Notts, Derbyshire and Yorkshire Coalfield.

1.4 Associated Wetland Species

There are many species associated with wetland habitats, some of which are UK Priority Biodiversity Action Plan species. Appendix 1 to 3 list both Priority, other important and local Red Data Book species associated with wetland habitats.

1.5 Extent of wetland habitats in Lowland Derbyshire

The diverse nature of the LBAP area means that there is a range of wetland habitats, varying in extent from large complex ones within the Trent and Dove Valleys to single ponds.
Table 4 and Figure 1 show the range and extent of the different wetland habitats found within all eight of the Action Areas in the Lowland Derbyshire LBAP area.

Table 4: Distribution and extent of wetland habitats within the LBAP area

LBAP Action Area	Reedbed	Fen and Mire	Swamp	Lakes and canals	Ponds
Magnesian Limestone	0.5ha	1.78ha	0.2ha	3 lakes	> 485
Rother and Doe Lea valleys	18.45ha	2.81ha	5.79ha	6 lakes 1 canal	> 1350
Peak Fringe	1.36ha	2.91ha	10.01ha	8 lakes 1 canal (part of)	> 2610
Erewash valley	3ha	8.95ha	32.28ha	5 lakes 3 canals	> 1220
Claylands	-	9.4ha	13.31ha	6 lakes	> 3960
Derby	-	-	13.04ha	2 lakes	> 460
Trent and Dove Valleys	46.92	-	27.45ha	27 lakes 1 canal	> 1105
National Forest area	0.58ha	-	5.62ha	3 lakes	> 1635
Totals	70.81ha	25.85ha	107.7ha	60 lakes	> 12825

Cromford Canal.
Credit: Debbie Alston

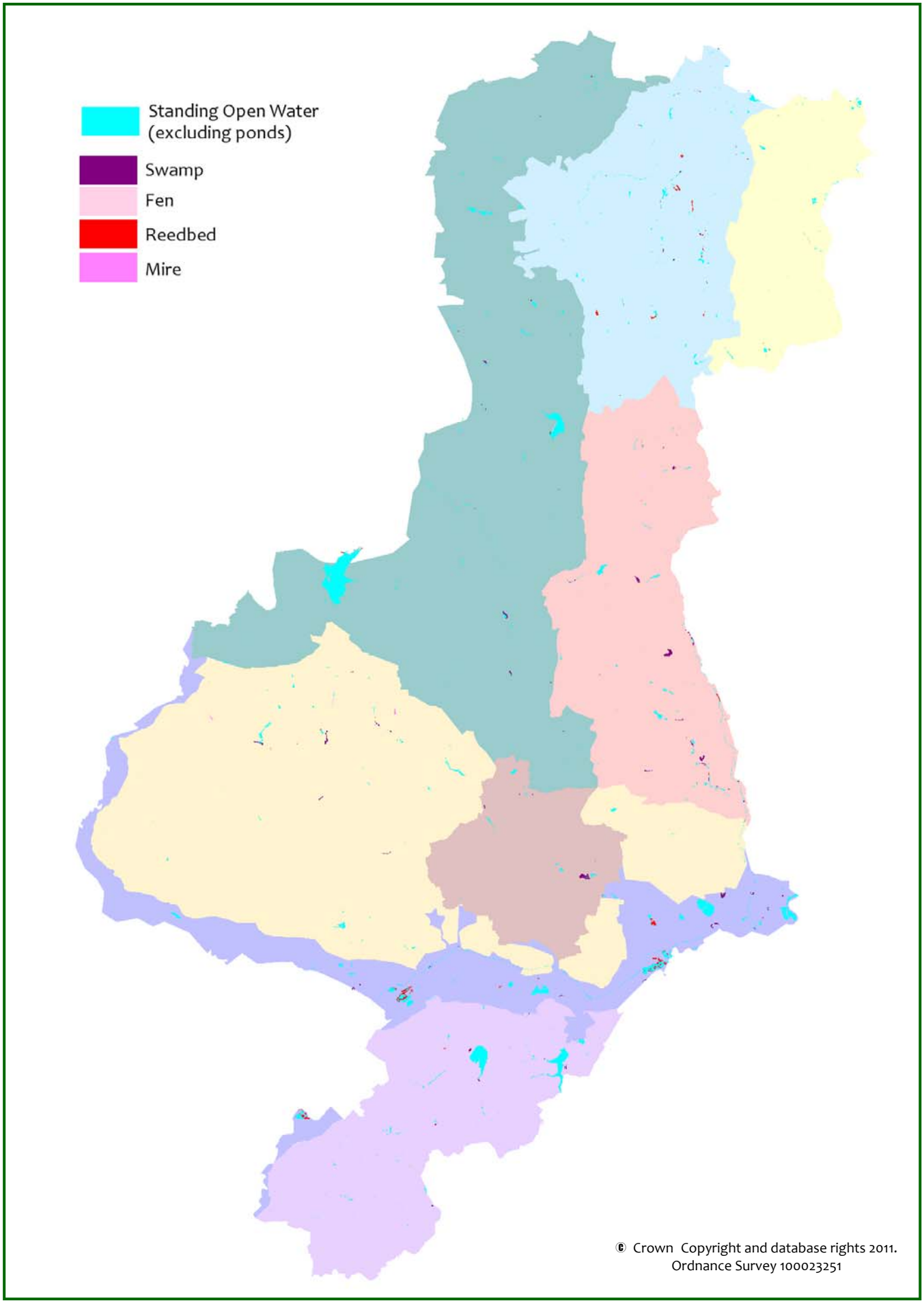


Figure 1: Wetland habitats in the LBAP area

2. Rivers and Streams

2.1 Introduction.

Rivers, streams and their floodplains form wetland corridors through our countryside. They have the potential to provide habitats for large numbers of Priority Species including otters, water vole and white-clawed crayfish. The best watercourses are those that exhibit the natural channel features typical of lowland watercourses. These include a variety of flow patterns (riffles, runs, glides, pools and marginal deadwater) and a variety of exposed riverine sediments (ERS) (side bars, point bars, channel bars, silt deposits and islands). ERS is an extremely important habitat, particularly for specialist invertebrates, as well as some bird and fish species and its presence is an indicator of rivers with natural channel features. In the past ERS were routinely removed from rivers like the Dove; the long-term effect of this is unknown.

2.2 Rivers and streams in Lowland Derbyshire

The main rivers in Derbyshire are shown in Figure 2. Lowland Derbyshire lies almost entirely within the catchment of the River Trent. However, several rivers located in the north of the Derbyshire (including the Doe Lea, Rother and Hipper) drain northwards into the River Don, which reaches the Humber Estuary via the tidal Ouse. The River Poulter (not shown in Figure 2), in the Magnesian Limestone Action Area , is within the Meden catchment.

After rising in north Staffordshire, the River Trent flows south and east before joining with the Tame and flowing northwest. Between its confluences with the Rivers Dove and Erewash, the Trent passes north and eastwards through southern Derbyshire. Then it heads north towards the Humber Estuary via Nottingham, Newark and Gainsborough. In addition, several major tributaries of the Trent are located in Lowland Derbyshire; these include the Rivers Derwent, Dove, Erewash, Amber (a tributary of the Derwent) and a small section of the river Mease.

A significant number of rivers and streams have been severely modified by re-sectioning, straightening or deepening and diverting. Since the Second World War this was mainly carried out for agricultural land drainage. In addition, some activities were carried out to alleviate flooding or when constructing new roads and other development. In most of these cases, in-stream habitat diversity has been virtually eliminated. Many rivers have become divorced from their natural floodplain, and wetland habitats such as wet grassland, wet woodland, fens and reed beds.

Water quality was once the major limiting factor influencing biodiversity in the county rivers. Urban rivers, and the River Trent especially, have significantly improved in recent decades but diffuse pollution particularly from agriculture remains a serious problem in more rural rivers and streams. The Environment Agency carries out monitoring of watercourses throughout the county.

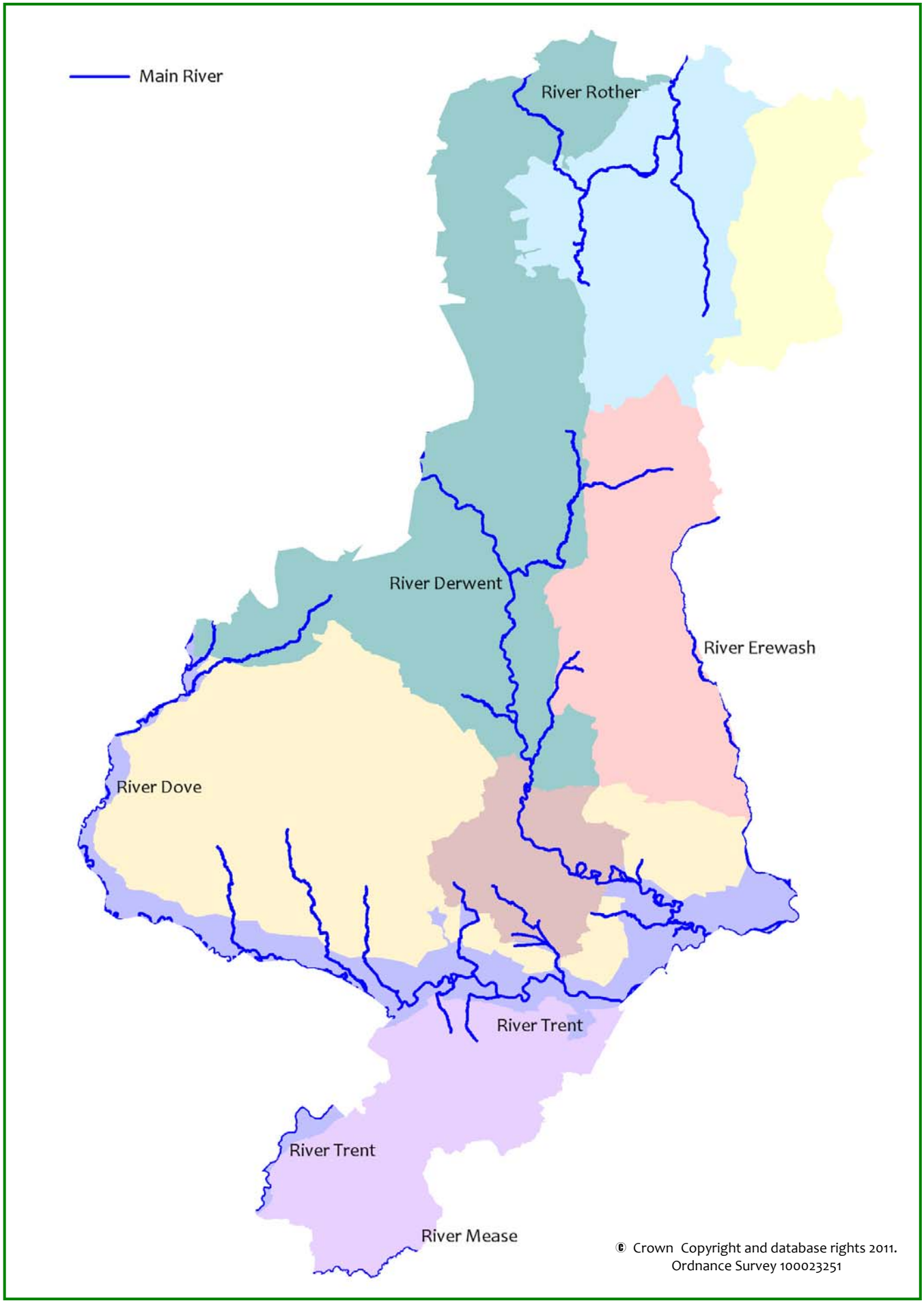


Figure 2: Derbyshire's main rivers

The Peak Fringe, the Claylands and the Trent and Dove Valleys Action Areas all contain flat flood plains with meandering rivers. The grassland is low-intensity, permanent pasture with localised patches of rushes in damp hollows. Adjacent to the rivers are scattered, locally dense willow and alder trees. In the Coalfield area the rivers are narrower, meandering along floodplains of variable width lined by trees. The remnant riverside vegetation includes wetland and some unimproved grassland and the pastures are dominated by dairy farming. The Riverside Meadows in the Melbourne Parklands Character Area are defined as being in flat floodplains containing meandering rivers and streams, and are of traditional pasture which has now changed to intensive mixed farming. The Riverside Meadows in the Mease and Sense Lowlands are in flat floodplains with tight meandering rivers. The pasture is moderate intensity permanent pasture.

Top left: River Dove at Hatton. Credit: Debbie Alston
Top right: River Dove. Credit: Debbie Alston
Bottom: River Derwent at the confluence with the River Ecclesbourne. Credit: Debbie Alston

3. Standing open water

3.1 Introduction

The term **'standing open water'** refers to natural systems such as lakes, meres and pools, as well as man-made waters such as reservoirs, canals, ponds and gravel pits. It includes the open water zone which may contain submerged, free-floating or floating-leaved vegetation and water fringe vegetation. It also includes adjacent wetland habitats with contiguous water levels that are less than 0.25 ha. Ditches with open water for at least the majority of the year should also be included. Small areas of open water in a predominantly terrestrial habitat such as bog pools or temporary pools on heaths should be included in the appropriate terrestrial habitat.

For the purposes of the LBAP, **ponds** are defined as any waterbody between one square metre and two hectares in area, which holds water for 4 months of the year or more. A **lake** is any waterbody of more than 2 hectares. **Canals** are included here as standing open water, although many have a slight flow caused by the use of locks. Most canals were built between 1750 and 1800.

Any area of open water can be important for biodiversity. Its value, however, is dependent upon a number of factors including level of disturbance, water quality and the species that are present in, on and around the waterbody.

3.2 Standing open water in Lowland Derbyshire

3.2.1 Magnesian Limestone

Most standing water exists as large lakes which were mostly mill ponds or as canal feeders and are now usually managed for fishing. Because of the free-draining geology, field ponds are rare.

3.2.2 River Rother and Doe Lea Valleys

There are a number of reservoirs within this Action Area. Some are associated with the mining industry such as Williamthorpe and Carr Vale. Ornamental lakes exist at Queens Park in Chesterfield and at Hardwick Park. Ponds are common in this area, especially where the land is close to rivers or has been effected by subsidence.

3.2.3 Peak Fringe

The standing water habitat in this area includes several large reservoirs including Carsington, Ogston and Linacre. There are also a number of ornamental lakes within the area including Stubbing Court. Ponds are relatively few and far between and are usually used for fishing or drinking ponds for grazing animals. The Cromford Canal, a disused canal, is very shallow in places and includes swamp and substantial marginal vegetation. In addition, old mill ponds - some going back to Medieval times - are a feature in the northern part of the area e.g. within the Moss Valley.

3.2.4 Erewash Valley

The development of the railways and the canal system resulted in a number of **borrow pits** in this area. These can be found along the Erewash Canal and nearby railway and the Chesterfield Canal. **Subsidence flashes** occur beside the Erewash at Aldercar and Brinsley. In the south and central part of the area there are relatively few field ponds, but there are some ponds within woodlands. The Erewash Canal was restored from a derelict state in the 1970's and flows between Langley Mill and the River Trent at Trent Lock. This Action Area also includes in-filled sections of the Cromford, Nutbrook and Derby Canal.

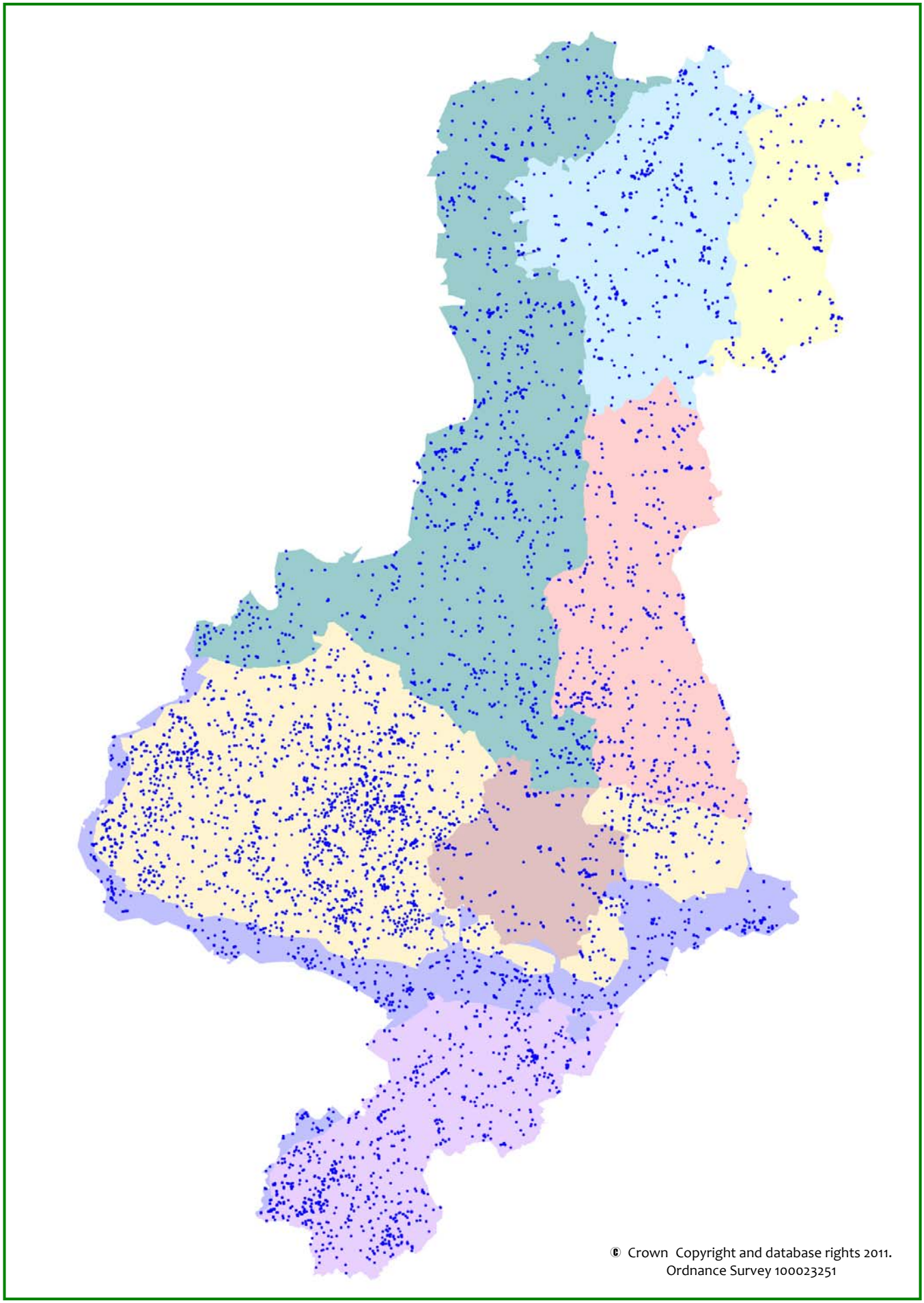


Figure 3: Pond distribution in Lowland Derbyshire

3.2.5 Claylands

There are a small number of gravel pits within this Action Area, some of which have naturally regenerated to form open water habitats after being extracted two or more decades ago, including Hilton Pits SSSI. The main feature of this area is the number of estate lakes, both small and large, at Osmaston Park, Meynell Langley, Kedleston Park and Sudbury Hall. Ponds are very common in this area, largely due to the underlying clay geology.

3.2.6 Derby

The historic properties within Derby have left a legacy of ornamental lakes and ponds, for example at Allestree Park and Markeaton Park. The WildDerby project carried out a survey of ponds which showed that there had been a significant decline, not only in number, but also in the quality of pond habitats.

3.2.7 Trent and Dove Valleys

There are a number of borrow pits in the Long Eaton area that were dug at the time of the construction of the railways. In addition several pits were dug during the construction of parts of the A50 during the 1990's. Gravel extraction has led to the creation of a number of large lakes, some temporary in nature during extraction. Lakes within completed restoration schemes include Witches Oak Water, Eggington Gravel pits and St Chads LNR at Church Wilne.

3.2.8 National Forest area

Two large reservoirs, Foremark and Staunton Harold, were constructed in the last forty years. The Trent and Mersey Canal, which in Derbyshire flows between Burton on Trent and the River Trent at Shardlow, has remained as a working canal. Ponds are a common feature of recent habitat creation schemes in this area.

Top left: Williamthorpe Nature Reserve LNR. Credit: Debbie Alston
Top right: River Trent. Credit: Debbie Alston
Bottom left: One of the 'Dragonfly ponds' at Pleasley Pit Country Park. Credit: Debbie Alston
Bottom right: New reedbeds at Carsington Reservior. Credit: Debbie Alston

4 Lowland Swamp, Mires, Fens and Reedbeds

4.1 Introduction

Swamps, mires, fens, and reedbeds are wetland habitats which together with wet woodland form a group that are often, but not always, associated with running and standing water. These different habitat types are to some extent transitional but an attempt can be made to draw some distinctions between them.

Swamps have a water table at or above the surface of the vegetation for most of the year. They tend to be composed of bulky sedges like lesser pond sedge; grasses such as reed sweet grass and common reed and species like branched bur-reed, common Reedmace and water horsetail. Typical associate herbs include water mint, marsh bedstraw, greater bird's-foot-trefoil, marsh marigold, lesser spearwort and wild angelica. A large number of swamp community types have been described within the National Vegetation Classification.

Mires can be found both in the uplands and in lowland valley bottoms. They are often associated with peat deposits and in these circumstance are often referred to as bogs. In the uplands bog habitats are often **'ombrotrophic'** which means they rely on solutes in precipitation and wind blown dust for their nutrition. In effect they are rain and dust fed. The two main types of bog are blanket bog and raised bog. Typical species are cotton grasses, heathers, cowberry, cranberry, sedges like star and carnation sedge, sundew and the sphagnum mosses. Lowland mire is exceptionally rare but does occur in a handful of sites usually associated with small springs on valley sides and valley bottoms, and contain a variety of rushes and small sedges such as star sedge with a base of moss dominated by Sphagnum. In lowland valleys, where ground is often waterlogged but grazing takes place, a type of vegetation known as **fen meadow mire** can develop characterised by rushes, short sedges and herbs such as water avens, ragged robin, meadowsweet and marsh marigold.

Fens however, are **'minerotrophic'** mires where groundwater, as well as precipitation and dust etc, contributes nutrients and water. Being more nutrient rich, lowland fens tend to support taller, denser vegetation characterised by common reed, hemp-agrimony, meadowsweet, reed canary grass, wild angelica, great willowherb and common valerian. The NVC recognises a number of community types, several of which occur within the LBAP area. Fen vegetation has declined in the UK and in Derbyshire. Britain is considered to have a high proportion of the remaining fen in Europe.

Reedbeds are a special type of swamp dominated by stands of the common reed *Phragmites australis.* They are described within the National Vegetation Classification under the community type S4 *Phragmites australis*. The water table must be above ground level for most of the year to maintain the habitat. Reedbeds consist mainly of dense small areas of reed, but they may incorporate areas of open water and ditches and sometimes small areas of wet grassland and carr.

4.2 Swamps, mires, fens and reedbeds in Lowland Derbyshire

Derbyshire's lowland mires, fens and swamps support over 150 native plant species including several that are relatively rare or uncommon for example lesser skullcap, butterwort, marsh cinquefoil, tawny sedge, marsh pennywort, marsh arrow-grass, greater tussock sedge and fen bedstraw. These habitats are also important for birds like reed bunting, sedge warbler and snipe and support a number of rare and scarce invertebrates.

Reedbeds, swamps and tall-herb fens are scattered throughout lowland Derbyshire (Figure 4), but most are located within the Trent Valley and the Coal Measures, especially within the catchments of the Erewash, Rother and Doe Lea. In many locations these habitats occur at the edges of ponds, lakes and rivers, but they are also associated with subsidence flashes, storage lagoons and old canals. Many swamp and mire habitats were affected by the growth of Derby and, to a lesser extent, Chesterfield. Land drainage affected extensive tracts of land from the 1650s onwards and Derbyshire was probably no exception. Recent evidence for losses has been recorded within the Local Wildlife Sites system, though this has not been quantified. In addition many of the sites identified within the audit are thought to be in a poor state and in some cases may no longer support viable habitats. Many sites are no longer managed within agricultural holdings and have been fenced, resulting in willow and alder invasion and the dominance of coarser grasses and bulky species such as sedges, umbellifers and willowherbs. Wetland habitats have developed naturally in the subsidence associated with the coalfield areas. Wetland habitats, (including some areas of swamp and reedbed) have been created as part of large restoration schemes along the Trent valley. Some flood alleviation initiatives, such as the Erewash Flood Alleviation Scheme, incorporate areas of swamp and reedbed which are primarily an engineering tool, but are also managed for nature conservation. The concept of sustainable urban drainage (SUDS) is now being considered within large housing and industrial developments. Swamps reedbeds, mires and fens are threatened by development adjacent to these habitats as this can significantly affect the hydrology e.g. rate of run-off, quality of water etc, as well as an absence of sympathetic management.

4.2.1 Magnesian Limestone

Small mires are also found in the Magnesian Limestone area, and are associated with localised calcareous flushes and springs. Several of these are of sufficient interest to be Sites of Special Scientific Interest and still provide a home to many rare plant species.

4.2.2 Rother and Doe Lea Valleys

Reedbeds and swamps have developed in this area in subsidence flashes associated with former mining areas, and valley bottoms. The largest area of reedbed in the area is at Williamthorpe Nature Reserve, there is also a significant reedbed at Markham. Water voles thrive in the reedbeds, as they provide additional habitat to the ponds, canals and river channels. New reedbed was planted as part of a wetland complex at Avenue Washlands

4.2.3 Peak Fringe

The extent of lowland mires and fen-meadows in the LBAP area is small and scattered. They occur as small valley mires within the Mercaston Marsh and Muggington Bottom SSSI which lies over a narrow band of peat on the border between the Needwood and South Derbyshire Claylands and Derbyshire Peak Fringe Natural Areas. Fen meadow and rush-pasture mires occur in association with unimproved pastures and meadows especially in the Peak Fringe where they can significantly add to the overall diversity of sites. These mires usually occur towards the bottom of valley sides and alongside streams. More acidic mires occur in association with remnant areas of heath, for example at Wessington Green.

4.2.4 Erewash Valley
As in the Rother and Doe Lea Valleys, reedbed and swamp have developed in subsidence flashes associated with former mining areas. The largest area of swamp is along Bailey Brook.

4.2.5 Claylands
Swamps dominated by sedges tend to be very localised and can be found in the South Derbyshire Claylands alongside watercourses such as the Brailsford Brook and by the Derwent near Belper and a few locations elsewhere. Marginal stands of swamp occur at various points along the Cromford Canal.

4.2.6 Derby
Swamps are generally small within the Derby area, mostly on the edges of larger water bodies. The exception is a large area of swamp over 11ha on the former water treatment works on the banks of the River Derwent at Spondon.

4.2.7 Trent Valley
66% of reedbeds in Lowland Derbyshire are found in either Trent valley and are associated with gravel pits. All tend to be relatively small. The largest area of reedbed is 7ha and is found at Elvaston Quarry pit, another important reedbed is found at Drakelow Nature Reserve. There are examples of single species dominated swamps associated with the River Trent and the Trent Valley and Rises Natural Areas. There are larger examples of swamps within the Erewash valley, such as Golden Brook storage lagoon and Pewit Carr.

4.2.8 National Forest Area
Reedbeds and swamps are very small features in this area, mostly on the edges of large reservoirs and within small valleys .

Reedbed and swamp at Hilton Gravel Pits SSSI. Credit: Debbie Alston

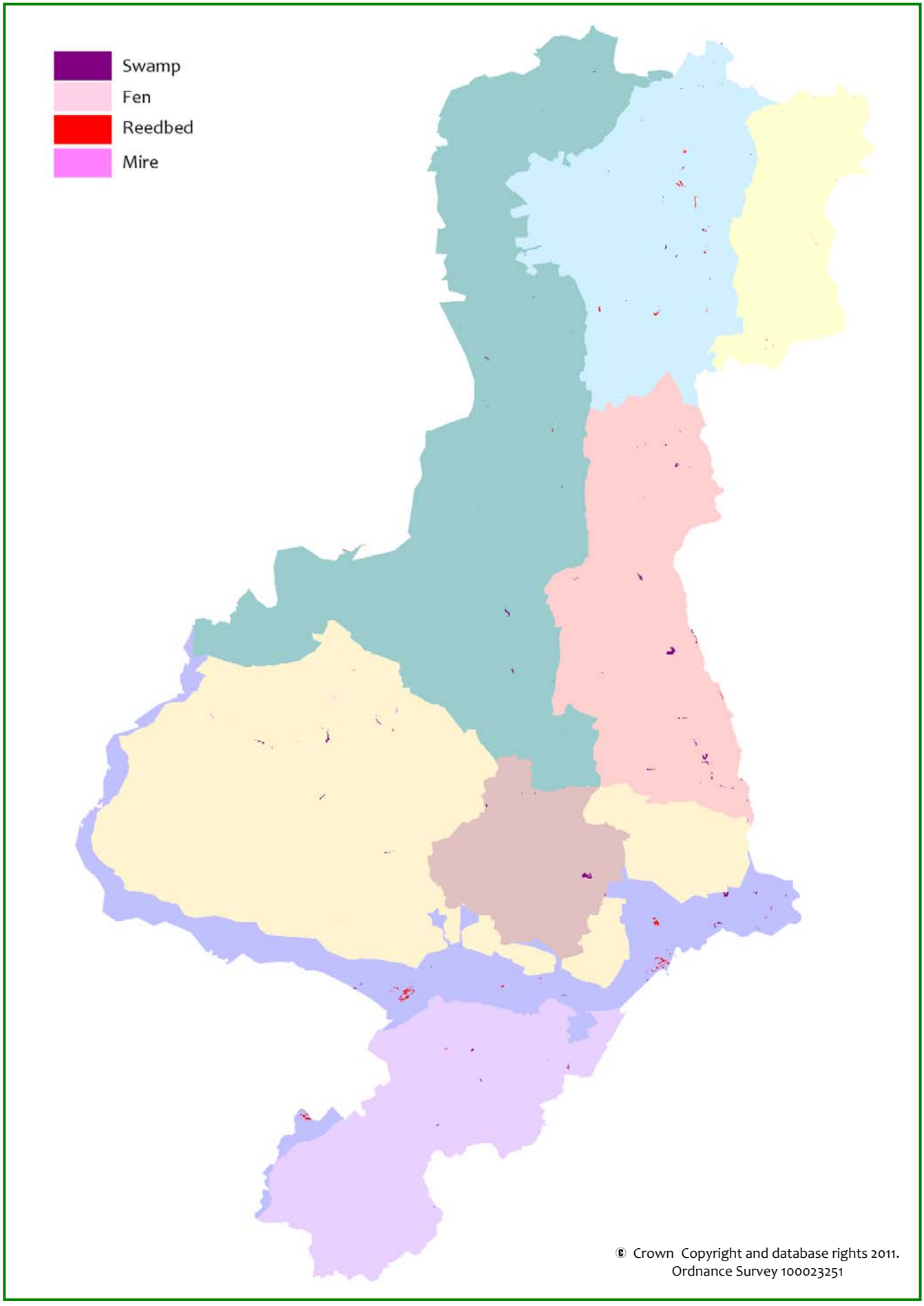


Figure 4: Swamps, mires, fens and reedbeds in Lowland Derbyshire

Appendix 1: Species for which Rivers and Streams are key habitats in Lowland Derbyshire

1.1 Priority Species (ie. UK BAP Species recorded in this Habitat in Lowland Derbyshire)

Birds

Reed bunting	*Emberiza schoeniclus*

Mammals

Otter	*Lutra lutra*
Water vole	*Arvicola terrestris*
Pipistrelle bat	*Pipistrellus pipistrellus*
Noctule bat	*Nyctalus noctula*

Invertebrates

White-clawed crayfish	*Austropotamobius pallipes*

Vascular Plants

Grass-wrack pondweed	*Potamogeton compressus*

1.2 Locally Important Species

An important feature of Local BAPs is the selection of locally important, threatened, declining or rare species which add local distinctiveness—the so-called "Local Red Data Book" species. Using Endangered Wildlife in Derbyshire (Elkington and Willmot, 1996) plus the Red Data List of Derbyshire's Vascular Plants (Moyes and Willmot, 2009), and with the help of county recorders, the following species have been selected for this category.

Invertebrates

Water Beetles
Brychius elevatus
Haliplus laminatus
Stictonectes lepidus
Scarodytes halensis
Agabus biguttatus
Gyrinus urinator
Helophorus arvernicus
Ochthebius bicolon
Hydraena rufipes
Riolus cupreus
Riolus subviolaceus

Water bugs

Aquarius najas
Aphelocheirus aestivalis
Micronecta poweri

Molluscs

Theodoxus fluviatilis

Birds

Common Tern	*Sterna hirundo*
Grey Wagtail	*Motacilla cinerea*
Kingfisher	*Alcedo atthis*
Mallard	*Anas platyrhynchos*
Sand Martin	*Riparia riparia*

Mammals

Daubenton's bat	*Myotis daubentonii*
Water shrew	*Neomys fodiens*
Whiskered bat	*Myotis mystacinus*
Natterer's bat	*Myotis nattereri*
Leisler's bat	*Nyctalus leisleri*
Brant's bat	*Myotis brandtii*
Pipistrelle bat	*Pipistrellus pipistrellus*

Vascular Plants

Lesser Water-plantain	*Baldellia ranunculoides*
Various-leaved Water-starwort	*Callitriche platycarpa*
Bladder-sedge	*Carex vesicaria*
Pale Willowherb	*Epilobium roseum*
Rough Horsetail	*Equisetum hyemale*
Fine-leaved Water-dropwort	*Oenanthe aquatica*
Tubular Water-dropwort	*Oenanthe fistulosa*
River Water-dropwort	*Oenanthe fluviatilis*
Small Water-pepper	*Persicaria minor*
Flat-stalked Pondweed	*Potamogeton friesii*
Shining Pondweed	*Potamogeton lucens*
Perfoliate Pondweed	*Potamogeton perfoliatus*
Long-stalked Pondweed	*Potamogeton praelongus*
Fan-leaved Water-crowfoot	*Ranunculus circinatus*
Narrow-fruited Water-cress	*Rorippa microphylla*
Purple Willow	*Salix purpurea*
Marsh Speedwell	*Veronica scutellata*
Horned Pondweed	*Zannichellia palustris*

Lower Plants

Dialytrichia mucronata
Orthotrichum sprucei

Appendix 2: Species for which Ponds, Lakes and Canals are key habitats in Lowland Derbyshire

2.1 Priority Species (ie. UK BAP Species recorded in this Habitat in Lowland Derbyshire)

Birds

Reed bunting	*Emberiza schoeniclus*
Bittern	*Botaurus stellaris*

Mammals

Otter	*Lutra lutra*
Water vole	*Arvicola terrestris*
Pipistrelle bat	*Pipistrellus pipistrellus*
Noctule bat	*Nyctalus noctula*

Amphibians

Great crested-newt	*Triturus cristatus*
Common toad	*Bufo bufo*

Invertebrates

White-clawed crayfish	*Austropotamobius pallipes*

Vascular Plants

Grass-wrack pondweed	*Potamogeton compressus*
Pennyroyal	*Mentha pulegium*

Non-Vascular Plants

Beaked Beardless-moss	*Weissia rostellata*

Reptiles

Grass snake	*Natrix natrix*

2.2 Locally Important Species

An important feature of Local BAPs is the selection of locally important, threatened, declining or rare species which add local distinctiveness—the so-called "Local Red Data Book" species. Using Endangered Wildlife in Derbyshire (Elkington and Willmot, 1996) plus the Red Data List of Derbyshire's Vascular Plants (Moyes and Willmot, 2009), and with the help of county recorders, the following species have been selected for this category.

Mammals

Daubenton's bat	*Myotis daubentonii*
Water shrew	*Neomys fodiens*
Whiskered bat	*Myotis mystacinus*
Natterer's bat	*Myotis nattereri*
Leisler's bat	*Nyctalus leisleri*
Brant's bat	*Myotis brandtii*

Birds

Common Tern	*Sterna hirundo*
Gadwall	*Anas strepera*
Kingfisher	
Little Grebe	*Tachybaptus ruficollis*
Little Ringed Plover	*Charadrius dubius*
Mallard	*Anas platyrhynchos*
Oystercatcher	
Ringed Plover	*Charadrius hiaticula*
Shelduck	*Tadorna tadorna*

Invertebrates

Molluscs

Theodoxus fluviatilis	Canals
Viviparus contectus	Canals
Viviparus viviparus	Canals
Bithynia leachii	Canals
Gyraulus laevis	Canals
Pisidium supinum	Canals
Pisidium hibernicum	Canals
Pisidium moitessierianum	Canals
Aplexa hypnorum	Sometimes in seasonal ponds

Water bugs

Mesovelia furcata
Gerris argentatus
Micronecta poweri
Corixa dentipes
Sigara scotti

Water beetles

Haliplus heydeni
Haliplus laminatus
Noterus crassicornis
Hygrotus quinquelineatus
Hydroporus neglectus
Hydroporus obscurus
Stictonectes Lepidus
Porhydrus lineatus
Scarodytes halensis
Ilybius aenescens
Ilybius subaeneus
Dytiscus circumcinctus
Helophorus dorsalis
Helophorus nanus
Enochrus coarctatus
Plateumaris rustica
Donacia marginata
Donacia crassipes
Hydraena testacea
Ochthebius nanus
Ochthebius bicolon
Berosus signaticollis
Hydrochus elongatus
Agabus unguicularis
Ilybius guttiger
Rhantus grapii
Dytiscus circumflexus
Helophorus longitarsis
Helochares punctatus

Bryophytes

Aphanorhegma patens
Didymodon
Ephemerum stellatum
Riccia cavernosa
Riccia fluitans

Vascular Plants

Narrow-leaved Water-plantain
Orange Foxtail
Lesser Water-plantain
Annual Water-starwort
Blue-fruited Water-starwort
Various-leaved Water-starwort
Short-leaved Water-starwort
Distant Sedge
Bladder-sedge
Needle Spike-rush
Pale Willowherb
Water-violet
Bogbean
Alternate Water-milfoil
Whorled Water-milfoil
Fine-leaved Water-dropwort
Tubular Water-dropwort
Small Water-pepper
Grass-wrack Pondweed
Flat-stalked Pondweed
Shining Pondweed
Blunt-leaved Pondweed
Fan-leaved Water-crowfoot
Narrow-fruited Water-cress
Purple Willow
Marsh Speedwell
Horned Pondweed
Alisma lanceolatum
Alopecurus aequalis
Baldellia ranunculoides
Callitriche hermaphroditica
Callitriche obtusangula
Callitriche platycarpa
Callitriche truncata
Carex distans
Carex vesicaria
Eleocharis acicularis
Epilobium roseum
Hottonia palustris
Menyanthes trifoliata
Myriophyllum alterniflorum
Myriophyllum verticillatum
Oenanthe aquatica
Oenanthe fistulosa
Persicaria minor
Potamogeton compressus
Potamogeton friesii
Potamogeton lucens
Potamogeton obtusifolius
Ranunculus circinatus
Rorippa microphylla
Salix purpurea
Veronica scutellata
Zannichellia palustris

Appendix 3: Species for which lowland Swamps, Reedbeds, Mires and Fens are key habitats in Lowland Derbyshire

3.1 Priority Species (ie. UK BAP Species recorded in this Habitat in Lowland Derbyshire)

Birds

Bittern (not breeding)	*Botaurus stellaris*
Cuckoo	*Cuculus canorus*
Marsh Harrier	*Circus aeruginosus*
Reed bunting	*Emberiza schoeniclus*

Mammals

Otter	*Lutra lutra*
Water vole	*Arvicola terrestris*
Harvest mouse	*Micromys minutus*
Noctule bat	*Nyctalus noctula*

Amphibians

Great crested-newt	*Triturus cristatus*

Reptiles

Grass snake	*Natrix natrix*

Vascular Plants

Marsh stitchwort *Stellaria palustris* *(not recorded post 2000)*

3.2 Locally Important Species i.e. Local Red Data Book (RDB) or important species recorded within this Habitat in Lowland Derbyshire.

An important feature of Local BAPs is the selection of locally important, threatened, declining or rare species which add local distinctiveness—the so-called "Local Red Data Book" species. Using Endangered Wildlife in Derbyshire (Elkington and Willmot, 1996) plus the Red Data List of Derbyshire's Vascular Plants (Moyes and Willmot, 2009), and with the help of county recorders, the following species have been selected for this category.

Mammals

Water shrew	*Neomys fodiens*
Daubenton's bat	*Myotis daubentonii*
Whiskered bat	*Myotis mystacinus*
Natterer's bat	*Myotis nattereri*
Leisler's bat	*Nyctalus leisleri*
Brant's bat	*Myotis brandtii*

Birds

Grasshopper Warbler	*Locustella naevia*
Little Grebe	*Tachybaptus ruficollis*
Reed warbler	*Acrocephalus scirpaceus*
Sedge warbler	*Acrocephalus schoenobaenus*
Snipe	*Gallinago gallinago*
Teal	*Anas crecca*
Water Rail	*Rallus aquaticus*

Invertebrates

Molluscs

Aplexa hypnorum
Ashfordia granulate
Vertigo antivertigo
Leiostyla anglica

Water bugs

Gerris argentatus

Water beetles

Noterus crassicornis
Hydroporus neglectus
Hydroporus obscurus
Porhydrus lineatus
Agabus unguicularis
Ilybius aenescens
Ilybius guttiger
Rhantus grapii
Dytiscus circumcinctus
Dytiscus semisulcatus
Gyrinus distinctus
Gyrinus paykulli
Hydrochus elongatus
Helophorus nanus
Helochares punctatus
Enochrus coarctatus
Hydraena britteni
Hydraena testacea

Vascular Plants

Orange Foxtail	*Alopecurus aequalis*
Bog Pimpernel	*Anagallis tenella*
Slender Tufted-sedge	*Carex acuta*
Dioecious Sedge	*Carex dioica*
Brown Sedge	*Carex disticha*
Tawny Sedge	*Carex hostiana*
Bladder-sedge	*Carex vesicaria*
Whorl-grass	*Catabrosa aquatica*
Early Marsh-orchid	*Dactylorhiza incarnata*
Narrow Buckler-fern	*Dryopteris carthusiana*
Needle Spike-rush	*Eleocharis acicularis*
Few-flowered Spike-rush	*Eleocharis quinqueflora*
Marsh Helleborine	*Epipactis palustris*
Fen Bedstraw	*Galium uliginosum*
Round-fruited Rush	*Juncus compressus*
Blunt-flowered Rush	*Juncus subnodulosus*
Bogbean	*Menyanthes trifoliata*
Fine-leaved Water-dropwort	*Oenanthe aquatica*
Narrow-fruited Water-cress	*Rorippa microphylla*
Purple Willow	*Salix purpurea*
Marsh Arrowgrass	*Triglochin palustre*
Marsh Valerian	*Valeriana dioica*
Marsh Speedwell	*Veronica scutellata*

Avenue Washlands near Wingerworth. Credit: Debbie Alston

Woodland Habitats

- Background Information -

Lowland Derbyshire LBAP

Chaddesden Wood LNR, Derby. Credit: Debbie Alston

Prepared by the Lowland Derbyshire Biodiversity Partnership

This document provides the background information for the Lowland Derbyshire Biodiversity Action Plan 2011-2020.

Last updated November 2011

Woodland Habitats in Lowland Derbyshire

Contents

	Page
1. Introduction	3
1.1 Woodland in the European and UK Biodiversity context	3
1.2 Coverage in Derbyshire	3
1.3 Coverage in the Lowland Derbyshire LBAP Area	4
1.4 Woodland habitat types in Lowland Derbyshire	4
1.5 Major influences on biodiversity in Lowland Derbyshire woodlands	5
1.6 Landscape Character Assessment	5
1.7 Species associated with woodland habitats	8
1.8 Distribution of Woodland in Lowland Derbyshire	8
2. Lowland Mixed Deciduous and Wet Woodland	10
2.1 Distribution of woodlands	11
3. Wood Pasture, Parkland and Veteran Trees	13
3.1 Introduction	13
3.2 Lowland wood pasture and parkland in Lowland Derbyshire	15
3.3 Veteran trees in Derbyshire	16
Table 1: Lowland Derbyshire BAP Woodland types - definitions	4
Table 2: Woodland habitats characteristic and appropriate within each Landscape Character Type	6
Table 3: Distribution of woodland and parkland within the LBAP area	9
Figure 1: Map of Woodland Types in Lowland Derbyshire	8
Figure 2: Map of Historic Parkland and Veteran Trees in Derbyshire	14
Appendix 1: Species for which Lowland Mixed Deciduous Woodland is a key habitat in Lowland Derbyshire	17
Appendix 2: Species for which Wet Woodland is a key habitat in Lowland Derbyshire	20
Appendix 3: Species for which Lowland Wood Pasture, Parkland and Veteran trees are key habitats in Lowland Derbyshire	21

1. Introduction

1.1 Woodland in the European and UK Biodiversity context

Most other European countries have a greater percentage cover than the UK, but in terms of its value for wildlife in a European context, British woodlands are important. Influences include:

- oceanic climate - Britain is at the north-west extreme of temperate European woodland types and some are therefore at their climatic limit, exhibiting characteristics not found in Europe;
- evolution of some woodland types in the absence of sycamore, which did not reach Britain before the breach in the land bridge to the continent;
- past management.

Ancient semi- natural woodland (ASNW) is the most important habitat type within the United Kingdom in relation to the numbers of species it supports (UK BAP HMSO 1995). Varied woodland structure provides many ecological niches and, up until Neolithic times, forests covered most of the country. However, woodland is the habitat from which the greatest number of species have become extinct in the last hundred years (an estimated 46 species being lost). It is also the habitat with most 'globally threatened' and 'rapidly declining' species (78 species).

Some woodland types are well represented in Britain but scarce in Europe. These include holly woods, ash woods on limestone, woods with bluebell-dominated ground flora (the UK holds 20% of the world's population of bluebells) and oceanic types with an Atlantic bryophyte, fern and lichen flora.

Veteran Trees are important for the many niches they provide for birds, bats, mammals and for the dead wood habitats they provide for fungi and invertebrates. Britain holds a high proportion of Europe's veteran trees.

1.2 Coverage in Derbyshire

In 2002 the Forestry Commission reported on all woodland over 0.1 ha in size in Derbyshire. It estimated that woodland cover in Derbyshire is 19,500 hectares i.e. 7.2% of the land cover, an increase of over 2% in the past 20 years, and beginning to approach the average for England and Wales of 9%.

The great majority of woodlands are over 2 ha, but under 10 ha in size. Between 1980 and 1998 the relative proportion of broadleaves to conifers increased from 65% to 78%, influenced by broad-leaved woodland planting in the coalfield on derelict land reclamation sites, on other **East Derbyshire Woodland Project** sites and by extensive planting in the **National Forest**. In addition there is a gradual move to replace conifer or broadleaved **Plantations on Ancient Woodland Sites (PAWS)** with native broadleaves, wherever appropriate. **The Great Trees of Derbyshire Project** recorded more than 4,000 veteran trees in the county, many of which were outside recognised parkland habitats.

1.3 Coverage in the Lowland Derbyshire LBAP Area

In 2010, woodland cover in this LBAP area was estimated to be 6% or 8,800 hectares. Ancient Woodland Sites account for a third of that (i.e. 3,700 hectares). But just under half of these sites have been replanted with introduced species, both coniferous and broadleaved. There is currently 2,100 hectares of ancient semi-natural woodland remaining in our area, which is a significant quantity in the national context.

1.4 Woodland habitat types in Lowland Derbyshire

The UK Biodiversity Action Plan lists **Lowland Mixed Deciduous Woodland** as a priority habitat type. It includes all woodlands where the canopy comprises at least 80% of the appropriate native species for the area. For the purposes of the Lowland Derbyshire LBAP this will include the woodland types listed in Table 1

Table 1: Derbyshire Lowland BAP Woodland types – definitions

Woodland Type	Definition	National Vegetation Classifications occurring in lowland Derbyshire
Lowland mixed broad-leaved woodland	Includes: • Woodlands on the **'Derbyshire Inventory of Ancient Woodlands'** which support semi-natural vegetation • Other semi-natural woodlands with evidence of ancient origin. • Semi-natural woodland or scrub referable to specific NVC types • Recently planted woodland, where the canopy is at least 80% of native species. • Other mature semi-natural woodland of significance.	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 W16 Oak *spp. (Quercus spp)* – Birch *spp. (Betula spp.)* – Wavy Hair Grass *(Deschampsia flexuosa)* woodland
Wet woodland	Woodland where the water table is permanently high.	W1 Goat Willow *(Salix cinerea)* – Common Marsh Bedstraw *(Galium palustre)* 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.

1.5 Major influences on biodiversity in Lowland Derbyshire woodlands

Geology and topography are important influences on the woodland types occurring in Derbyshire. Past management is also significant in determining biodiversity value. A large proportion of the present high-forest woodland in the Lowland BAP area is even-aged, semi-mature trees where high, dense canopies allow very little light to reach the ground. This suppresses ground flora, shrub layer and recruitment of young trees. Mature trees can benefit hole-nesting birds such as tits and those favouring areas of rot, such as woodpeckers and redstarts. In many woods, however, there is very little structural diversity in terms of open rides and clearings, nor good transitional habitats or fallen or standing dead timber. Features such as these are important for providing habitats for scarcer and more local species characteristic of deciduous woodland. The spread of invasive species (especially rhododendron) can have a profound influence on a woodland, almost completely preventing the growth of ground flora. Lack of management also results in an even-age wood with very little variety.

1.6 Landscape Character Assessment

In 2003 Derbyshire County Council carried out a **Landscape Character Assessment** for the county, excluding large urban areas, such as the built parts of Derby City and Chesterfield. The project identified where woodland habitats would be most appropriate in maintaining landscape character and local distinctiveness as well as highlighting the most appropriate woodland type and management for the local area. This approach has been largely reflected in the landscape-scale approach within the Lowland Derbyshire LBAP. Table 2 shows the relationship between landscape character type and woodland type.

Top left: Thinning operation as part of woodland management. Credit: Debbie Alston
Top right: Parkland at Calke Abbey. Credit: Debbie Alston
Bottom left: Coppiced woodland. Credit: Derbyshire County Council
Bottom right: Waingroves Community Woodland. Credit: Debbie Alston

Table 2: Woodland habitats characteristic and appropriate within each Landscape Character Type

P Primary (main) habitat - prominent and a key characteristic
S Secondary habitat - variable and a local characteristic
L Locally significant - notable for containing rare species

Action Area name within this LBAP	Character Area	Landscape Character Type	Ancient & Semi-natural broadleaved woodland	Lowland Parkland	Wet Woodland	Veteran Trees
Peak Fringe	Derbyshire Peak Fringe and Lower Derwent	Enclosed Moors and Heaths				
		Wooded Slopes and Valleys	P		P	P
		Wooded Farmlands	P	P	P	P
		Gritstone Heaths & Commons				
		Settled Farmlands		S	S	P
		Riverside Meadows			P	
Rother and Doe Lea Valleys Erewash Valley	Notts, Derbyshire & Yorkshire Coalfield	Wooded Hills & Valleys	P		P	P
		Coalfield Village Farmlands	S	S	S	P
		Estate Farmlands	S	P	P	S
		Wooded Farmlands	P	S	P	P
		Coalfield Estatelands	P	P	P	P
		Riverside Meadows			P	
		Plateau Estate Farmlands	P	P	S	P
Magnesian Limestone	Southern Magnesian Limestone	Limestone Farmlands	P	S		
		Limestone Gorges	P		P	
Claylands	Needwood & South Derbyshire Claylands	Settled Farmlands		S	S	P
		Settled Plateau Farmlands	S	S		P
		Sandstone Slopes & Heaths				S
		Estate Farmlands	S	P	S	P
		Riverside Meadow			P	

Action Area name within this LBAP	Character Area	Landscape Character Type	Ancient & Semi-natural broadleaved woodland	Lowland Parkland	Wet woodland	Veteran Trees
Trent and Dove Valleys	Trent Valley Washlands	Lowland Village Farmlands	S		S	S
		Wet Pasture Meadows				
		Riverside Meadows			P	
National Forest area	Melbourne Parklands	Estate Farmlands	P	P	S	P
		Wooded Estatelands	P	P	P	P
		Sandstone Slopes & Heaths	P			S
		Riverside Meadows			P	
	Leicestershire & Derbyshire Coalfield	Coalfield Village Farmlands	S	S	P	P
	Mease & Sence Lowlands	Village Estate Farmlands	S	S	P	S
		Riverside Meadows			P	

Note: Derby is omitted from this list because it is not, in itself, a Character Area.
The administrative boundary of the city of Derby actually straddles four such Character Areas: the Needwood and South Derbyshire Claylands, the Trent Valley Washlands, the Derbyshire Peak Fringe and Lower Derwent, plus the Notts, Derbyshire and Yorkshire Coalfield.

Greater Stitchwort. Credit: Debbie Alston

1.7 Species associated with woodland habitats

Many species are associated with woodland habitats, of which some are UKBAP Priority Species. Appendices 1 to 3 list these Priority Species as well as other locally important species associated with woodland habitats.

1.8 Distribution of Woodland in Lowland Derbyshire

Figure 1 and Table 3 (opposite) show the type and distribution of woodland in Lowland Derbyshire.

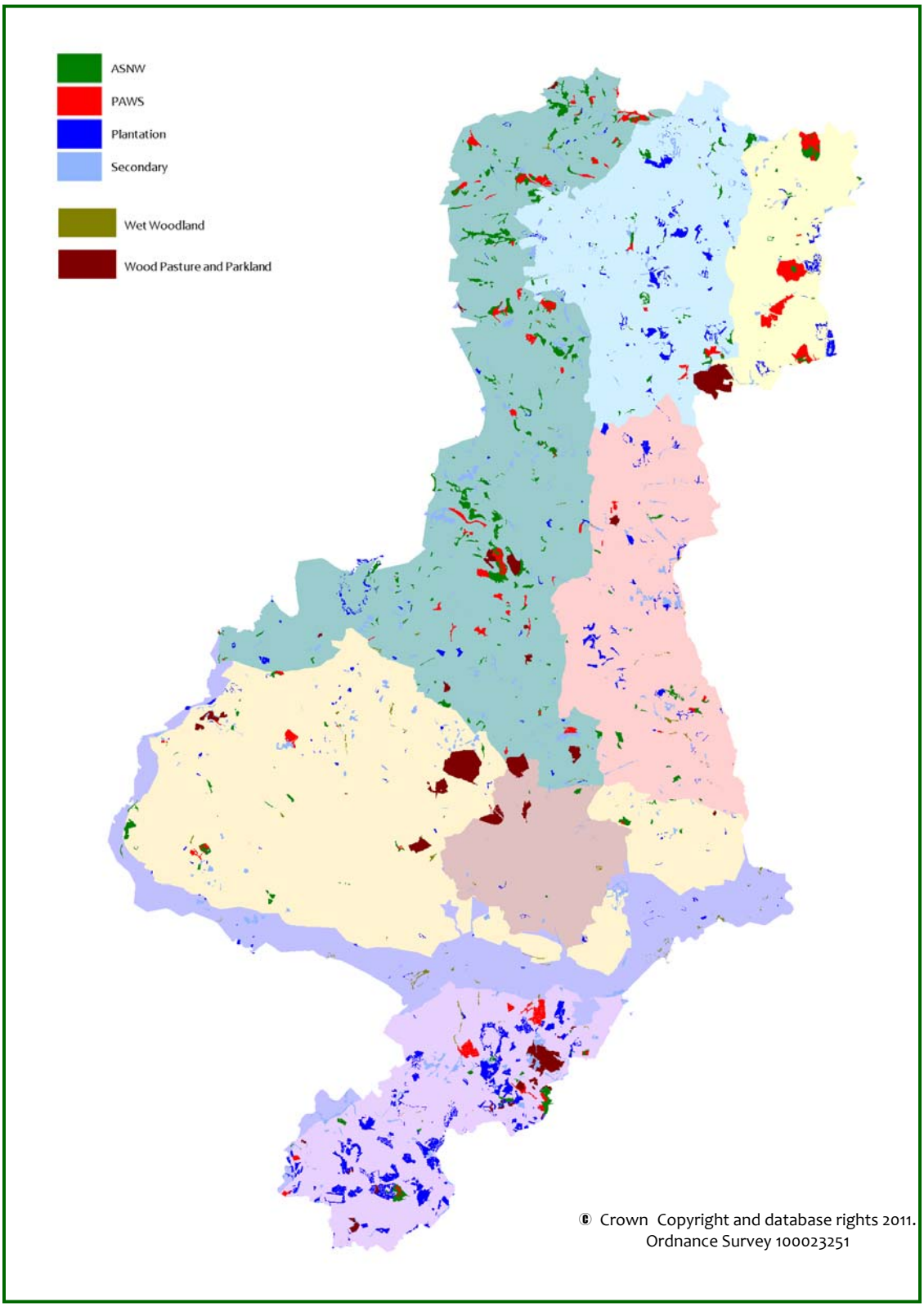


Figure 1: Woodland types in Lowland Derbyshire

Table 3: Distribution of woodland and parkland within the LBAP area

LBAP Action Area	Wood-land resource	% of total Wood-land resource	Semi-natural ancient Wood-land	Planta-tions on Ancient Wood-land Sites	Secon-dary Wood-land	Wood-land planted since 1980	Wet wood-land	Wood-pasture and park-land sites
Mag-nesian Lime-stone	900 ha	10 %	104ha	468 ha	151 ha	174 ha	6 ha	2 sites
Rother and Doe Lea valleys	1,109 ha	12 %	217 ha	68ha	269 ha	548 ha	11 ha	7 sites
Peak Fringe	2,845 ha	32 %	1,381 ha	642 ha	695 ha	127 ha	31 ha	27 sites
Erewash valley	690 ha	8 %	120 ha	29 ha	244 ha	269 ha	28ha	11 sites
Clay-lands	885 ha	10 %	142 ha	93 ha	582 ha	69 ha	38 ha	16 sites
Derby	100 ha	1 %	13ha	-	74ha	14 ha	5 ha	3 sites
Trent and Dove Valleys	190 ha	2 %	7ha	-	129 ha	53 ha	61 ha	6 sites
National Forest	2,194 ha	25 %	166ha	268 ha	357 ha	1,403 ha	23ha	4 sites
Totals	**9,079 ha**		**2,150 ha**	**1,568 ha**	**2,501 ha**	**2,657 ha**	**203 ha**	**115 sites**

The Peak Fringe area contains the largest proportion of woodland in the LBAP area. It also contains the greatest area of ancient woodland. The Derwent Valley, part of which is contained within the Derwent Valley World Heritage Site, is known to be one of the largest areas of connected woodland in the north of England. The Valley is also highlighted nationally as a 'hot spot' for woodland birds. A lot of this woodland has cultural association with the industrial heritage of the area, and contains much important woodland archaeological evidence. By contrast, the area with the lowest amount of woodland is Derby, which is a highly urbanised area with few woodlands remaining and limited opportunities for additional woodland to be planted. The largest proportion of recently planted woodland is found in the National Forest area, where agri-environmental grants have encouraged woodland creation.

Wood Anemone.
Credit: Debbie Alston

Throughout the LBAP area few very large (i.e. > 50 ha.) woodlands remain. Those that do are dominant within the Magnesian Limestone area. The rest are relatively small copses, spinneys and coverts and isolated remnant areas of semi-natural ancient woodland. River valleys are important as woodland corridors, especially the steep-sided sections of the Derwent, Amber and Dove, where woodland has remained as other land uses were restricted due to topography. Small wooded valleys to the west of Chesterfield contain small fragments of ancient woodland. There is probably no true wood pasture remaining in the LBAP area, but a number of parkland remains can be identified.

2. Lowland Mixed Deciduous and wet woodland

In this context the term lowland mixed deciduous woodland comprises of:

- Ancient Woodland (Semi-natural and Plantations on Ancient Woodland Sites)
- Secondary woodland which has been developed from natural colonisation within the last few centuries
- Recently planted woodlands where the composition is at least 80% of native species

Total woodland cover is currently 6% across the whole LBAP area i.e. 8,800 hectares. The Ancient Woodlands have mainly survived on slopes too steep to farm, where they are often known as **'Dumble Woods'** and **'Grips'** or on patches of sandy or ill-drained soil. Derbyshire coppices, of which there are few surviving, are known as **'spring woods'.** Most have been felled and replanted with non-coppice species. Many of the woodlands would have traditionally been managed as coppice for turnery, tool handles, firewood/charcoal or as high forest for planking or furniture-making from medieval times to the industrial revolution. As other materials and cheap quality timber imports became readily available their utilisation declined. Former management has left many sites with a lack of veteran trees and dead wood.

The former extensive woodland cover of Derbyshire has declined over many centuries to a point where virtually all ancient woodland is restricted to a number of small and isolated blocks, typically less than 10 hectares. The biggest ancient woodland sites fall within the Magnesian Limestone area, most of which have been replanted with non-native species.

Wet woodland, or **'carr'**, develops where the water table is permanently high. Some wet woodlands, along seepage areas or springs are permanent if water supply persists; others are just a stage in natural succession from open water to climax dry woodland. Dominant wet woodland tree species include willow, sallow, alder and downy birch. Very rarely black poplar is present in southern parts.

Most wet woodlands in Derbyshire are in flood plains, but some are also found near ponds and lakes and within mineral workings. Wet woods with native black poplar as the dominant species do not occur, though individual specimen trees do. A Species Action Plan has been prepared. Alder and willow woodland are valuable for invertebrates and birds. Those beside rivers provide potential otter habitat, thus making an important contribution to the ability of the otter to return to Derbyshire. However, alder carr is rather rare in the county, although alder commonly fringes rivers and lakes. Wet woodland is important as part of the mosaic of wet and dry habitats vital for many species. Seepage woods are typically small and often occur within larger areas of drier woodland, especially NVC Types **W5, W6** and **W7** in **W10** woods. They can have very rich faunas, especially terrestrial molluscs and craneflies, which are the main group of invertebrates for which wet woodland is important, with a high incidence of nationally notable and also locally rare species.

2.1 Distribution of woodlands

The distribution of ancient woodland sites is shown in Figure 1. Notes on the woodland distribution in each of the action plan areas can be found below.

2.1.1 Magnesian Limestone

There are a number of large discrete ancient woodland sites often greater then 50ha, more than 80% of which have been replanted with non-native species. Much of the remainder of the limestone plateau is good quality agricultural land, so other woodlands are small and fragmented. Following relatively recent mineral extraction activity, land restoration schemes have included large blocks of woodland planting. Examples of sites include, Poulter Country Park, Pleasley Pit Country Park, Shirebrook and the former Bolsover tip north. Wet woodland is associated with man-made mill ponds (Pleasley Vale), fishing pools (Harlesthorpe Dam and Nether Langwith), canal feeder reservoirs (Pebley Pond), ornamental lakes (Hardwick Hall) and within narrow river valleys. There are also small areas of alder/willow carr around Scarcliffe.

2.1.2 Rother and Doe Lea Valleys

This area has a history associated with the mining industry. As a result it has few ancient woodlands remaining. Woodland has been a significant component of a number of land restoration schemes within the area such as Poolsbrook Country Park, and former Renishaw opencast site. Wet woodland can be found along river valleys and associated with canals, pit heaps, subsidence flashes and springs (Foxstone Dam).

2.1.3 Peak Fringe

There is a high concentration of small interlocking woodlands particularly along the Derwent valley from Matlock to Duffield, much of which is ancient woodland. There is also much woodland in the area to the west and north of Chesterfield and the Moss Valley. Linear wet woodlands lie along some of the small valleys on the west side of the Derwent, as isolated fragments, but also as part of larger woodlands of ancient origin such as Shiningcliff Woods. Wet woodland in the valley bottoms is very restricted. Very localised wet woodland can be found at Ogston and Linacre reservoirs and stands of willow are found around smaller reservoirs.

2.1.4 Erewash Valley

There is a history of disturbance due to mining activities and industrial development in this area therefore only a small number of ancient woodlands remain. Woodlands have been planted on former coalfield sites such as Shipley Country Park, Doe Hill at Stonebroom, Denby and Forge and Monument at Codnor. Wet woodland is a feature along the main river valleys, some of which has developed in old oxbows (Erewash Meadows).

2.1.5 Claylands

There are relatively few woodlands within this area, however, the presence of hedgerow and watercourse trees contributes to a well wooded character. The main woodland areas are largely associated with the estates within the area. Wet woodlands occur in the Dove Valley, other smaller valleys and areas such as Radbourne Rough and Tinkers Inn Bog. Secondary wet woodland has developed within Hilton Gravel Pits SSSI, but this is now changing into dry oak woodland.

2.1.6 Derby

This area contains less than 100 ha of woodland. There is little ancient woodland and much of the remaining mature woodland is associated with the City parks.

2.1.7 Trent and Dove Valleys

This area contains the largest amount of wet woodland in the LBAP area. It is mostly associated with feeder streams to the Rivers Trent and Dove or on the periphery of former aggregate sites. Extensive areas of carr were historically common in the area, characteristic species being common osier, purple, crack and white willows, silver birch and alder. They were often managed for basket making and hurdles. Black poplar occurs as isolated trees, the main concentration of which are within the Hilton, Scropton and Hatton area.

2.1.8 National Forest area

This part of the LBAP region contains the most recently planted woodland. The National Forest Company, which occupies most of this Action Area, has encouraged woodland planting via its **National Forest tender scheme** and **Changing Landscapes Schemes**. The area does contain a number of large ancient woodlands (Robin Wood, Repton Wood and Grange Wood) two of which have been replanted and are managed for timber production. Between 1990 and 2010 more than 1,000 hectare of woodland has been planted in the area. This woodland now helps to link ancient and secondary woodland across the area, creating a large amount of connected habitat.

Top: Clearance of rhododendron in Allestree Park
Bottom left: Yellow Archangel. Credit: Debbie Alston
Bottom right: Bluebells in Chaddesden Wood LNR. Credit: Debbie Alston

3. Wood Pasture, Parkland and Veteran Trees.

3.1 Introduction

Wood pasture and **parkland** consist of a vegetation structure, rather than a particular plant community. There are usually a large number of veteran trees growing above grassland, heathland or woodland ground flora. Tree management, usually by pollarding, produced 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, woodland or amenity, but may still retain the old trees . These are still of value for nature conservation where the specialist species supported by those veteran trees have survived.

The **UK Habitat Action Plan** definition of this woodland type includes lowland wood pasture and parklands derived from medieval forests and emparkments, 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 the landscaping of estates around country houses two or three hundred years ago. Some parkland may be only 100-150 years old, but may still contain veteran trees from an earlier landscape.

Although rare fungi, lichens and bryophytes are typically associated with veteran trees and parklands, high levels of pollution affect the distribution of the lichens in Derbyshire. 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, especially green woodpeckers, spotted flycatchers, tits and redstarts, tree sparrows and whinchats. Parklands may retain areas of unimproved grasslands.

Trees can be considered to be **'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 conditions eg dead wood and sap runs which are of importance, rather than the species. Where veteran trees are isolated, this increases their vulnerability. Veteran trees are of interest biologically, culturally or aesthetically because of their age, size or condition.

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 biodiversity 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. They are important for the many niches they provide for birds, bats and mammals, as well as 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.

The most frequently required associated habitat is the presence of flowering shrubs, especially hawthorn, together with grassland with umbelifers and composite flowers later in the year to provide nectar and/or pollen for saproxylic species such as adult beetles and flies.

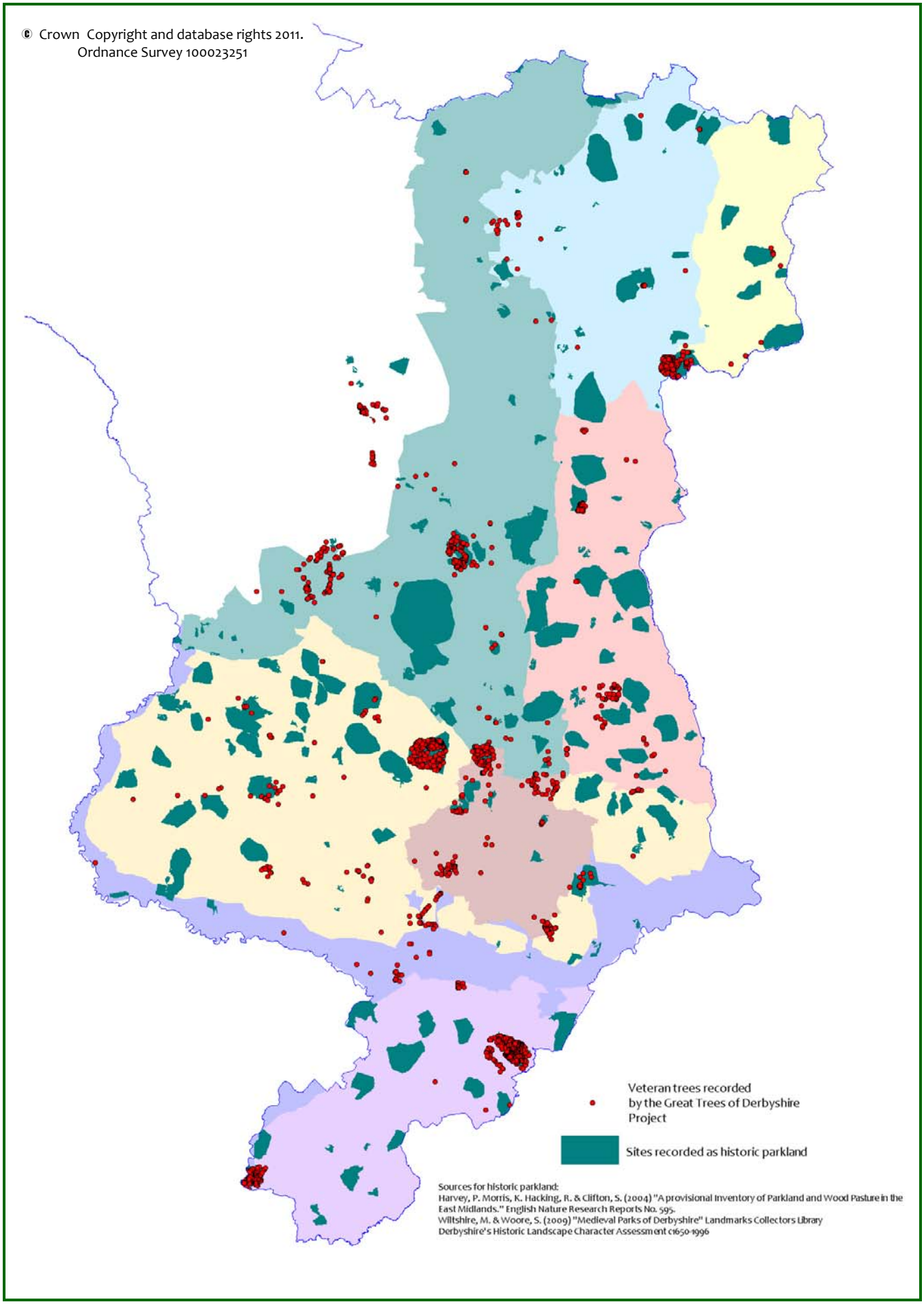


Figure 2: Historic Parkland and Veteran Trees in Derbyshire

3.2 Lowland wood pasture and parkland in Lowland Derbyshire

In Derbyshire, trees of wood pasture and parkland are mainly pedunculate oak but also ash and planted non-native species to the county – beech, sycamore, hybrid limes, sweet chestnut. Lime used to be an important species in the natural forests of this region. Elms were also important in some locations until Dutch elm disease reduced the numbers. Initially this resulted in an increase in dead wood habitats, reflected in a rise in records of some species locally. But many trees were subsequently felled. "**A provisional inventory of Parkland and Wood Pasture in the East Midlands**" (Harvey,P. et al, 2004) identified 52 parkland sites in Derbyshire covering 4,117 ha. Of these, 42 are within the Lowland Derbyshire LBAP area, covering a total of 3,561ha. Since the provisional inventory was produced several more parklands have been identified, notably in "**Medieval Parks of Derbyshire**" (Wiltshire, M. & Woore, S. 2009). Parkland is very scattered in Lowland Derbyshire , but most are in the central and southern half of the LBAP area. Figure 2 shows the occurrence of historic parkland and veteran trees in Derbyshire.

3.2.1 Magnesian Limestone

Within this Action Area the main parkland is the deer park associated with Hardwick Hall, but other areas remain at Barlborough.

3.2.2 Rother and Doe lea Valleys

In this Action Area there are smaller parks, for example at Renishaw Hall which now includes an area used as a golf course.

3.2.3 Peak Fringe

Within this Action Area the main remaining parks include those at Wigwell Grange, Windley Hall, Alderwasley Hall and Alton Manor. All are privately owned. The only equivalent of a royal forest in this area is Duffield Frith, which was deforested early in the Middle Ages. The outliers were at Crich Chase and Alderwasley Park; parts of Shiningcliff Wood also contain veteran trees and adjoin Alderwasley Park. Neither Crich Chase nor Alderwasley Park contain significant numbers of veteran trees now; many of the large oaks were felled last century.

3.2.4 Erewash Valley

There are at least twenty historic parklands within this Action Area, most of which have been effected by either development and or mineral extraction. Veteran trees have been recorded within Alfreton Park; other parklands remain un-recorded. The majority of the veteran trees in this area have been recorded in the wider countryside i.e. within hedgerows and fields.

3.2.5 Claylands

Parklands are an important feature within this Action Area. Kedleston Park, originally a medieval deer park, now owned by the National Trust is an SSSI but there are other estates for example Radbourne Park, Osmaston Park, Sudbury Hall and Shirley Park where parkland exists. Some parkland dates from the seventeenth and eighteenth centuries but others are older, since this part of the county had several deer parks in medieval 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.

3.2.6 Derby

There are several parks here. Some are of early origin, such as Markeaton Park and Darley Park, though others are more recent. Derby Arboretum, laid out between 1839-40, was the first park to be specifically designed for and owned by the public. All are managed primarily for public use. Veteran trees are recognised as important features at these sites, as well as at Allestree Park where the area outside the golf course is managed as a Local Nature Reserve (LNR).

3.2.7 Trent and Dove Valleys

Elvaston Castle has extensive biodiversity value. It has been much altered by 19th century landscaping and planting and more recently by its use as a Country Park, although important veteran trees still remain. Small areas of a parkland type landscape remain in other locations, as at Etwall and Swarkestone, for example.

3.2.8 National Forest area

Parklands are an important feature, especially within the Melbourne area where Calke Abbey National Nature Reserve and remnant parkland extends to neighbouring areas. Parkland also exists at Catton and adjacent to Donnington Park on the border with Leicestershire

3.3 Veteran Trees in Derbyshire

The **Great Trees of Derbyshire Project** collected and collated information on veteran trees in Derbyshire. A total of 4,150 trees were surveyed, of which approximately 2,500 are within this LBAP area. Figure 2 shows known distribution. It is recognised that this data is still not complete, but the survey does provide a valuable insight into the locations of veteran trees outside traditional parklands.

Within 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. Very small numbers of black poplars can be classed as veterans, and some ancient willow pollards, too. Though little studied, some distribution patterns between the Natural Areas in Derbyshire can be discerned. In the Magnesian Limestone area, occasional veteran trees in hedgerows occur and fewer in woodlands. Within the Rother and Doe Lea valleys and Erewash valley, veteran trees of all species are very scarce, the few remaining, usually beech or oak, often associated with long destroyed parkland landscapes. Solitary limes can be found occasionally in the Peak Fringe, as are some sweet chestnut, yew in churchyards and veteran pollarded or standard oaks within cultivated fields or on roadsides.

Oaks are more common in the Claylands area, especially in hedgerows. Here there are also some veteran willow pollards. In the National Forest area oaks occur in hedgerows, and yew in churchyards. Here again, some veterans occur where there was wood pasture and parkland but where this landscape may have disappeared. Some very large and ancient willow pollards are also known to occur in places.

Large veteran oak at Kedleston Hall.
Credit: Debbie Alston

Appendix 1: Species for which Lowland Mixed Deciduous Woodland is a key habitat in Lowland Derbyshire

1.1 Priority Species (ie. UK BAP Species recorded in this Habitat in Lowland Derbyshire)

Mammals

Brown Hare	*Lepus europaeus*
Brown long-eared bat	*Plecotus auritus*
Dormouse	*Muscardinus avellanarius*
Noctule bat	*Nyctalus noctula*
Soprano pipistrelle	*Pipistrellus pygmaeus*

Birds

Bullfinch	*Pyrrhula pyrrhula*
Cuckoo	*Cuculus canorus*
Dunnock	*Prunella modularis*
Hawfinch	*Coccothraustes coccothraustes*
Lesser redpoll	*Carduelis cabaret*
Lesser spotted woodpecker	*Dendrocopos minor*
Marsh tit	*Parus palustris*
Spotted flycatcher	*Muscicapa striata*
Song thrush	*Turdus philomelos*
Starling	*Sturnus vulgaris*
Tree pipit	*Anthus trivialis*
Willow tit	*Parus montanus*
Wood warbler	*Phylloscopus sibilatrix*

Invertebrates

Hairy wood ant	*Formica lugubris*
Shining guest ant	*Formicoxenus nitidulus*
Square-spotted clay	*Xestia rhomboidea*
White admiral	*Limenitis camilla*
White-letter hairstreak	*Satyrium w-album*

1.2 Locally Important Species

An important feature of Local BAPs is the selection of locally important, threatened, declining or rare species which add local distinctiveness—the so-called "Local Red Data Book" species. Using Endangered Wildlife in Derbyshire (Elkington and Willmot, 1996) plus the Red Data List of Derbyshire's Vascular Plants (Moyes and Willmot, 2009), the following species have been selected for this category. The birds included are based on the RSPB's list of species of conservation concern.

Birds

Firecrest	*Regulus ignicapillus*
Grasshopper warbler	*Locustella naevia*
Green woodpecker	*Picus viridis*
Mistle thrush	*Turdus viscivorus*
Pied flycatcher	*Ficedula hypoleuca*
Redstart	*Phoenicurus phoenicurus*
Stock dove	*Columba oenas*
Willow warbler	*Phylloscopus trochilus*
Woodcock	*Scolopax rusticola*

Bryophytes

Marchesinia mackaii

Mammals

Common pipistrelle	*Pipistrellus pipistrellus*
Whiskered bat	*Myotis mystacinus*
Brandt's bat	*Myotis brandtii*
Natterer's bat	*Myotis nattereri*
Leisler's bat	*Nyctalus leisleri*
Nathusius' pipistrelle	*Pipistrellus nathusii*

Ground Beetles

Carabus monilis (NB) P
Badister sodalist (L) P
Dromius meridionalis (L) P

Fungi

Mycena rubromarginata
Strobilomyces strobilaceus

Key:
RDB1 Red Data Book Category 1
RDB2 Red Data Book Category 2
RDB3 Red Data Book Category 3
RDBK Insufficiently known
N Nationally Notable
NA Nationally Notable Species Category A (present in fewer than 30 km grid squares in UK)
NB Nationally Notable Species Category B (present in between 31 and 100 km grid squares in UK)
DW in deadwood habitat
P Predatory species
F on fungus

Ground Beetles
Carabus monilis (NB) P
Badister sodalist (L) P
Dromius meridionalis (L) P

Carrion Beetles
Plegaderus dissectus (NB)
Abraeus granulum (NA)
Aeletes atomarius (RDB3)

Featherwing Beetles
Nossidium pilosellum (N) F
Ptenidium gressneri (N) F
Micridium halidaii (RDBK) F

Rove Beetles
Omalium allardi (N) P
Quedius microps (NB) DW
Quedius scitus (NB) DW
Quedius xanthopus (NB) DW, F
Sepedophilus testaceus (N) DW, F
Gyrophaena angustata (N) DW, F
Gyrophaena hanseni (N) DW, F
Atheta occulta (L) F
Oxypoda induta (Un) P
Aleochara ruficornis (N)

Short-Winged Mould Beetles
Bibloporus minutes (NB) DW, F
Euplectus fauveli (N) DW

Click Beetles
Athous subfuscus (RDB3)

Soldier beetles
Malthinus frontalis (NB)

Hide beetles
Megatoma undata (NB)
Ctesias serra (NB)

Wood-boring beetles
Ptinomorphus imperialis (NB) DW
Xestobium rufovillosum (C) DW
Dorcatoma flavicornis (NB) DW
Dorcatoma serra (NA) F
Anitys rubens (NB) F

Bark-gnawing beetles
Nemozoma elongatum (RDB3) DW

Timber Beetles
Hylecoetus dermestoides (NB) DW

Chequered Beetles
Tillus elongatus (NB) P
Korynetes caeruleus (NB) P

Slime Mould Beetles
Sphindus dubius (NB) DW, F

Silken Fungus Beetles
Cryptophagus labilis (N) DW, F

False Ladybirds
Symbiotes latus (NB) DW, F

Mould Beetles
Enicmus rugosus (N) DW, F
Corticaria alleni (N) DW, F

Hairy Fungus Beetles
Mycetophagus populi (NA) DW, F
Mycetophagus quadriguttatus (NA) DW, F

Darkling Beetles
Scaphidema metallicum (NB) DW
Corticeus unicolor (RDB3) DW
Helops caeruleus (NB) DW
Prionychus ater (NB) DW, F
Mycetochara humeralis (NA) DW

Cardinal Beetles
Pyrochroa coccinea (NB) DW

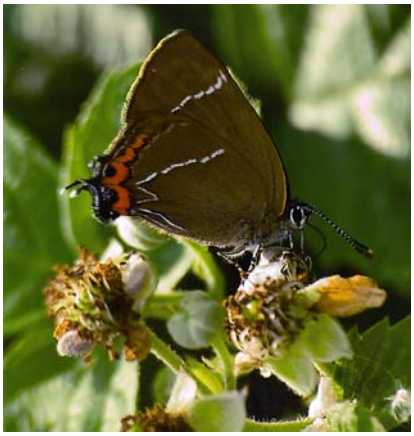
False Darkling Beetles
Orchesia minor (NB) DW, F
Melandrya caraboides (NB) DW

Flower Beetles
Ischnomera caerulea (RDB3) DW

Antlike Leaf Beetles
Aderus oculatus (NB) DW

Leaf Beetles
Luperus flavipes (NB)
Psylliodes luteola (RDBK)

Ambrosia Beetles
Scolytus intricatus (L) DW
Dryocoetes autographus (L) DW



White-letter hairstreak.
Credit: Martin Stubbs

A sleepy dormouse in its nest.
Credit: Debbie Alston

Vascular Plants

Fragrant Agrimony	*Agrimonia procera*
Lesser Hairy-brome	*Bromopsis benekenii*
Narrow-leaved Bitter-cress	*Cardamine impatiens*
Soft-leaved Sedge	*Carex montana*
Pale Sedge	*Carex pallescens*
Thin-spiked Wood-sedge	*Carex strigosa*
Small Teasel	*Dipsacus pilosus*
Large-flowered Hemp-nettle	*Galeopsis speciosa*
Stinking Hellebore	*Helleborus foetidus*
Green Hellebore	*Helleborus viridis*
Narrow-leaved Everlasting-pea	*Lathyrus sylvestris*
Common Gromwell	*Lithospermum officinale*
Bird's-nest Orchid	*Neottia nidus-avis*
Greater Butterfly-orchid	*Platanthera chlorantha*
a bramble	*Rubus durescens*
Stone Bramble	*Rubus saxatilis*
Saw-wort	*Serratula tinctoria*
Large-leaved Lime	*Tilia platyphyllos*

White Admiral.
Credit: Debbie Alston

Appendix 2: Species for which Wet Woodland is a key habitat in Lowland Derbyshire

2.1 Priority Species (ie. UK BAP Species recorded in this Habitat in Lowland Derbyshire)

Amphibians

Great Crested Newt	*Triturus cristatus*

Mammals

Noctule bat	*Nyctalus noctula*
Otter	*Lutra lutra*
Soprano pipistrelle	*Pipistrellus pygmaeus*

Birds

Dunnock	*Prunella modularis*
Lesser Redpoll	*Carduelis cabaret*
Lesser Spotted Woodpecker	*Dendrocopos minor*
Willow Tit	*Parus montanus*

2.2 Locally Important Species

An important feature of Local BAPs is the selection of locally important, threatened, declining or rare species which add local distinctiveness—the so-called "Local Red Data Book" species. Using Endangered Wildlife in Derbyshire (Elkington and Willmot, 1996) plus the Red Data List of Derbyshire's Vascular Plants (Moyes and Willmot, 2009), and with the help of county recorders, the following species have been selected for this category.

Birds

Woodcock	*Scolopax rusticola*

Mammals

Daubenton's bat	*Myotis daubentoni*
Pipistrelle bat	*Pipistrellus pipistrellus*
Whiskered bat	*Myotis mystacinus*
Brandt's bat	*Myotis brandtii*
Natterer's bat	*Myotis nattereri*
Leisler's bat	*Nyctalus leisleri*
Nathusius' pipistrelle	*Pipistrellus nathusii*

Micro-moths

Acleris hastiana
Anacampsis populella
Phyllocnistis unipunctella

Hoverflies

Sphegina elegans
Sphegina verecunda
Xylota tarda

Molluscs

Leiostyla anglica

Bryophytes

Plagiothecium latebricola

Macro-moths

Poplar Kitten	*Furcula bifida*
Small scallop	*Idaea emarginata*
Lead- coloured drab	*Orthosia populeti*
Red-tipped clearwing	*Synanthedon formicaeformis*
Red sword-grass	*Xylena vetusta*

Vascular Plants

Narrow-leaved Bitter-cress	*Cardamine impatiens*
Upland Enchanter's-nightshade	*Circaea alpina x lutetiana (C. x intermedia)*
Narrow Buckler-fern	*Dryopteris carthusiana*
Green-flowered Helleborine	*Epipactis phyllanthes*
Rough Horsetail	*Equisetum hyemale*
Broad-leaved Cottongrass	*Eriophorum latifolium*
Wood Spurge	*Euphorbia amygdaloides*
Herb Paris	*Paris quadrifolia*
Purple Willow	*Salix purpurea*
Wood Club-rush	*Scirpus sylvaticus*

Appendix 3: Species for which Lowland Wood Pasture, Parkland and Veteran trees are key habitats in Lowland Derbyshire

3.1 Priority Species (ie. UK BAP Species recorded in this Habitat in Lowland Derbyshire)

Birds

Bullfinch	*Pyrrhula pyrrhula*
Lesser Spotted Woodpecker	*Dendrocopos minor*
Marsh tit	*Parus palustris*
Starling	*Sturnus vulgaris*
Spotted flycatcher	*Muscicapa striata*
Song Thrush	*Turdus philomelos*

Mammals

Barbastelle bat	*Barbastella barbastellus*
Brown long-eared bat	*Plecotus auritus*
Noctule bat	*Nyctalus noctula*
Soprano pipistrelle	*Pipistrellus pygmaeus*

Fungi

Oak Polypore	*Buglossoporus pulvinus*

Veteran Oak at Calke Abbey.
Credit: Debbie Alston

3.2 Locally Important Species

An important feature of Local BAPs is the selection of locally important, threatened, declining or rare species which add local distinctiveness—the so-called "Local Red Data Book" species. Using Endangered Wildlife in Derbyshire (Elkington and Willmot, 1996) plus the Red Data List of Derbyshire's Vascular Plants (Moyes and Willmot, 2009), and with the help of county recorders, the following species have been selected for this category. Note: These lists identify only rare or locally distinctive species. They should not be interpreted as an inventory of species characteristic of this Priority Habitat.

Birds

Barn owl	*Tyto alba*
Green woodpecker	*Picus viridis*
Hobby	*Falco subbuteo*
Mistle thrush	*Turdus viscivorus*
Redstart	*Phoenicurus phoenicurus*
Stock dove	*Columba oenas*

Mammals

Brandt's bat	*Myotis brandtii*
Leisler's bat	*Nyctalus leisleri*
Nathusius' pipistrelle	*Pipistrellus nathusii*
Natterer's bat	*Myotis nattereri*
Pipistrelle bat	*Pipistrellus pipistrellus*
Serotine bat	*Eptesicus serotinus*
Whiskered bat	*Myotis mystacinus*

Vascular Plants

Hound's-tongue	*Cynoglossum officinale*
Henbane	*Hyoscyamus niger*

Ambrosia Beetles

Ernoporus caucasicus (RDB1) DW
Ernoporus fagi (NA) DW

Key:

RDB1 Red Data Book Category 1
RDB2 Red Data Book Category 2
RDB3 Red Data Book Category 3
RDBK Insufficiently known
N Nationally Notable
NA Nationally Notable Species Category A (present in fewer than 30 km grid squares in UK)
NB Nationally Notable Species Category B (present in between 31 and 100 km grid squares in UK)
L Local
DW in deadwood habitat
P Predatory species
F on fungus

Ground Beetles
Carabus monilis (NB) P
Notiophilus rufipes (L)P
Pterostichus cupreus (L) P

Carrion Beetles
Plegaderus dissectus (NB)
Abraeus granulum (NA)
Aeletes atomarius (RDB3)

Featherwing Beetles
Nossidium pilosellum (N) F
Ptenidium gressneri (N) F
Micridium halidaii (RDBK) F

Rove Beetles
Micropeplus fulvus (L) P
Quedius microps (NB) DW
Quedius scitus (NB) DW
Quedius xanthopus (NB) DW, F
Sepedophilus testaceus (N) DW, F
Liogluta granigera (L) P
Atheta occulta (L) F
Oxypoda induta (Un) P
Oxypoda vittata (L) P

Short-Winged Mould Beetles
Bibloporus minutes (NB) DW, F
Euplectus bonvouloiri rosae (N) DW

Dung Beetles
Aphodius porcus (NB)

Click Beetles
Fleutiauxellus quadripustulatus (NA)
Athous subfuscus (RDB3)
Ctenicera pectinicornis (NA)

Hide Beetles
Megatoma undata (NB)
Ctesias serra (NB)

Bark-gnawing Beetles
Nemozoma elongatum (RDB3) DW

Chequered Beetles
Tillus elongatus (NB) P
Korynetes caeruleus (NB) P

Wood–boring Beetles
Ptinomorphus imperialis (NB) DW
Xestobium rufovillosum (C) DW
Dorcatoma flavicornis (NB) DW
Dorcatoma serra (NA) F
Anitys rubens (NB) F

Slime Mould Beetles
Sphindus dubius (NB) DW, F

Silken Fungus Beetles
Cryptophagus labilis (N) DW, F

Ladybirds
Adonia variegata (NB) P

False Ladybirds
Symbiotes latus (NB) DW, F

Mould Beetles
Enicmus rugosus (N) DW, F
Corticaria alleni (N) DW, F

Hairy Fungus Beetles
Mycetophagus populi (NA) DW, F

Darkling Beetles
Corticeus unicolor (RDB3) DW
Helops caeruleus (NB) DW
Prionychus ater (NB) DW, F

Cardinal Beetles
Pyrochroa coccinea (NB) DW

False Darkling Beetles
Orchesia minor (NB) DW, F
Melandrya caraboides (NB) DW

Flower Beetles
Ischnomera caerulea (RDB3) DW

Ant-like Leaf Beetles
Aderus oculatus (NB) DW

Leaf Beetles
Luperus flavipes (NB)

Weevils
Tropiphorus terricola (NB)
Hypera fuscocinerea (NB)

Lowland Derbyshire Biodiversity Partnership

Lowland Derbyshire LBAP

The Lowland Derbyshire BAP is supported and delivered by a partnership of many organisations. Some are statutory agencies, some are local authorities, whilst many more are non-governmental organisations - charities, voluntary groups and local societies.

We always welcome new additions to the Partnership from any organisation able to deliver action for biodiversity in our region. In particular we invite all Parish Councils to join us to express support for our work.

For more information, contact the Lowland Derbyshire LBAP Officer via the Derbyshire Biodiversity website at www.derbyshirebiodiversity.org.uk or ring 01629 539771

Statutory Agencies

Environment Agency
Natural England
Forestry Commission
Highways Agency

Local Authorities

Amber Valley Borough Council
Bolsover District Council
Chesterfield Borough Council
Derby City Council
Derbyshire County Council
Derbyshire Dales District Council
Erewash Borough Council
North East Derbyshire District Council
South Derbyshire District Council

Voluntary Organisations

BTCV
Derbyshire Wildlife Trust
Farming and Wildlife Advisory Group
Groundwork Creswell, Ashfield and Mansfield
Groundwork Derby and Derbyshire
National Trust
RSPB
Small Woods Association
Woodland Trust

Other Organisations

Bolsover Countryside Partnership
British Waterways
Countryside Landowners Association
Derbyshire Constabulary
Environmental Education Project
East Midlands Biodiversity Partnership
Meynell Langley Estate
National Farmers Union
National Forest Company
Severn Trent Water

Local & Community Groups

Antony Gell School Foundation
Denby Footpaths Group
Darley and Nutwood Nature Reserve Management Group
Derby Pond Warden Association
Derby & Sandiacre Canal Trust
Derbyshire Alternative Technology Association (DATA)
Derbyshire Amphibian and Reptile Group

Lowland Derbyshire Biodiversity Partnership

Lowland Derbyshire LBAP

Local & Community Groups (continued)

Derbyshire Bat Conservation Group
Derbyshire Conservation Volunteers
Derbyshire Mammal Group
Derbyshire and Nottinghamshire Entomological Society
Derbyshire Ornithological Society
Derwent Green Gym
Dove Valley Community Project
Dronfield and District Natural History Society
Findern Footpaths Group
Friends of Allestree Park
Friends of Belper Parks
Friends of Bolsover Parks
Friends of Chaddesden Park
Friends of Chellaston Brickworks
Friends of Forbes Hole
Friends of Holmebrook Valley Park
Friends of Kirk Hallam Lake & Meadows
Friends of Markeaton Brook
Friends of Markeaton Park
Friends of Mickleover Meadows
Friends of Poolsbrook Country Park
Friends of Red River
Lea Brook Valley Project
Long Eaton Natural History Society
Moss Valley Wildlife Group
Ogston Bird Club
Osmaston Green Gym
Pleasley Pit Nature Study Group
RSPB Chesterfield Group
RSPB Derby Local Group
Sorby Breck Ringing Group
South Derbyshire Badger Group

Parish & Town Councils

Ashover Parish Council
Barlborough Parish Council
Clifton Parish Council
Cromford Parish Council
Dale Abbey Parish Council
Dethick, Lea and Holloway Parish Council
Doveridge Parish Council
Draycott Parish Council
Findern Parish Council
Hognaston Parish Council
Holbrook Parish Council
Ironville Parish Council
Killamarsh Parish Council
Kirk Ireton Parish Council
Little Eaton Parish Council
Mackworth Parish Council
Mapperley Parish Council
Newton Solney Parish Council
North Wingfield Parish Council
Repton Parish Council
Ripley Town Council
Risley Parish Council
Smalley Parish Council
South Wingfield Parish Council
Staveley Town Council
Stanley and Stanley Common Parish Council
Tibshelf Parish Council
Woodville Parish Council
Willington Parish Council

96 Partners
November 2011