
South Derbyshire Environmental Audit



Carried out by Derbyshire Wildlife Trust
for the South Derbyshire LSP Sustainable
Environment Group

Acknowledgements

Thanks must go to the many individuals and organisations who contributed information and provided comments during the production of the audit.

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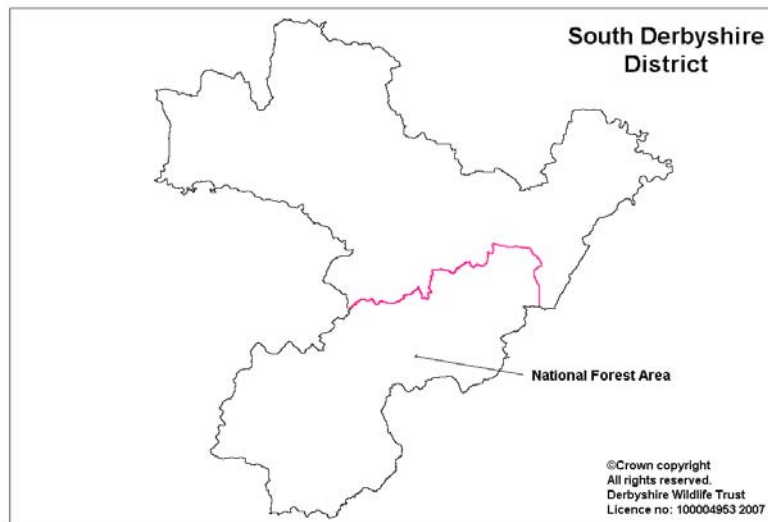
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1 Introduction

1.1 South Derbyshire District

South Derbyshire District lies at the heart of England and contains a vibrant mix of modern villages, ancient settlements, historic treasures, vast swathes of countryside and abundant wildlife.

Figure 1: South Derbyshire District and National Forest boundaries



The natural environment of the district is varied and contains a range of habitats including ancient parkland; wetlands such as canals, rivers and reservoirs; woodland both ancient and young and wildflower-rich grassland.

This is accompanied by a built environment that contains great halls such as Calke Abbey, Elvaston Castle, Catton Hall and Melbourne Hall, alongside historic villages, such as Melbourne, Ticknall, Repton and Newton Solney.

South Derbyshire District also lies within some important landscape-scale projects. The largest of these is the National Forest, an ambitious environmental project covering 200 square miles of the Midlands, across parts of Derbyshire, Leicestershire and Staffordshire., which aims to link the two ancient Forests of Charnwood and Needwood and transform the area into a rich mosaic of land uses, framed by woodland, for the pleasure and benefit of the community, landscape and environment. From one of the country's least wooded regions, the ambitious goal for The National Forest is to increase woodland cover to about a third of all the land within its boundary.

South Derbyshire also falls within the OnTrent project area. OnTrent is a major partnership project to benefit wildlife, heritage & people in parishes along the Trent Valley, which flows along the south western border of South Derbyshire before cutting across the centre of the District. The aim of OnTrent is to create *"A river that is rich in wildlife habitats, landscape and historic features for the benefit of all, both now and in the future"*.

All of this combines to form a rich environmental heritage and provides great potential for change and further improvement.

1.2 The Impact of Climate Change

Climate change, triggered by an increase in carbon dioxide emissions, is considered to be the biggest threat to our future and one that may have a huge impact on our environment. At the local level, for example, it may lead to:

- A strain on water availability.
- An increase in flood risk.
- An increase in air and water pollution.
- Changing distributions of habitats and species

Such changes have the potential to radically alter the environment of South Derbyshire and threaten both the natural and built heritage.

The threat posed by climate change should be considered within the context of this audit and measures to combat it should be encouraged and promoted where possible. This has already begun through South Derbyshire District Council's Carbon Footprint Village project and its activities and successes should be extended if possible.

Promotion of what individuals can do to help combat climate change at the very local level should also take place.

1.3 Strategic Context

Relevant policies and strategies

National Level

UK BAP
PPS9

Regional Level

East Midlands Regional Biodiversity Strategy
East Midlands Regional Environment Strategy
East Midlands Regional Energy Strategy
East Midlands Regional Plan
East Midlands Regional Spatial Strategy
East Midlands Regional Waste Strategy
'Space4trees' - the East Midland's Regional Forestry Framework.

County Level

Lowland Derbyshire Local Biodiversity Action Plan
National Forest Biodiversity Action Plan

District-level

Community Strategy
Economic Regeneration Strategy (underway)
Local Plan

1.4 The Environmental Audit

The aims of this audit are to:

- Identify the environmental assets of South Derbyshire District
- Identify and review current environmental information for the district;
- Identify gaps in knowledge; and
- Suggest priorities for future work

The audit covers both the natural and the built environment and includes the following aspects of the environment:

- Natural Environment
 - Natural Areas and Landscape Character
 - Biodiversity
 - Sites of Nature Conservation Value
 - Parks and Open Spaces
 - Environmental Land Management Schemes
 - Water
 - Air
- Built Environment
 - Conservation areas
 - Listed buildings
 - Ancient monuments
 - Historic gardens
- Waste, Recycling and Energy Consumption

1.5 Methodology

Data collation and analysis was undertaken to:

- Summarise the current known environmental assets of South Derbyshire.
- Identify gaps in knowledge
- Assess priorities for future work.

This included both the natural environment and the built environment. A large proportion of habitat and species information for South Derbyshire is located at Derbyshire Wildlife Trust's (DWT) head office but is scattered throughout a range of sources and is in various formats. The other main sources of information are South Derbyshire District Council, the National Forest Company, Derbyshire County Council and the Environment Agency.

1.6 Limitations of the Study

Due to the time available, analysis was limited to information and data that was available and easily accessible. There is likely to be more information in existence for the themes covered by the audit however much of this information is widely dispersed across a number of different organisations and in a number of different locations. Bringing this together would add to the analysis provided by and conclusions drawn from this audit.

2 The Audit

2.1 Natural Environment

2.1.1 Natural Areas and Landscape Character

In 1996 the Countryside Agency and English Nature (now Natural England) published the Joint Character Map of England. This work grouped together broad geographic areas of landscape with similar physical, natural and cultural characteristics such as geology and landform, soils and land use, ecology, tree cover and cultural attributes. Landscapes previously identified for their particular “quality” and appreciated for their “scenic beauty” resulted in the exclusion of many other areas. However all landscapes and habitats have a “value”, an approach based on the identification of distinct landscape characteristics which make one landscape different from another. This allows for an assessment of all landscapes and assists in conserving and enhancing the diversity of landscape character and associated habitats.

This work culminated in the definition of Joint Character Areas and slightly broader Natural Areas. Each Natural Area has a characteristic association of habitats, wildlife and natural features and the concept provides a way of interpreting the ecological variations of the country in terms of these features and illustrating the distinctions between one area and another. Natural Areas provide a consistent, ecologically coherent countrywide framework to focus appropriate ecological targets to the local level.

In December 2003 Derbyshire County Council published the ‘Landscape Character of Derbyshire’ following a landscape character assessment of the county excluding the Peak Park. The landscape character assessment further sub-divided the five joint Character Areas (JCA’s) into a number of Landscape Character Types (LCT’s).

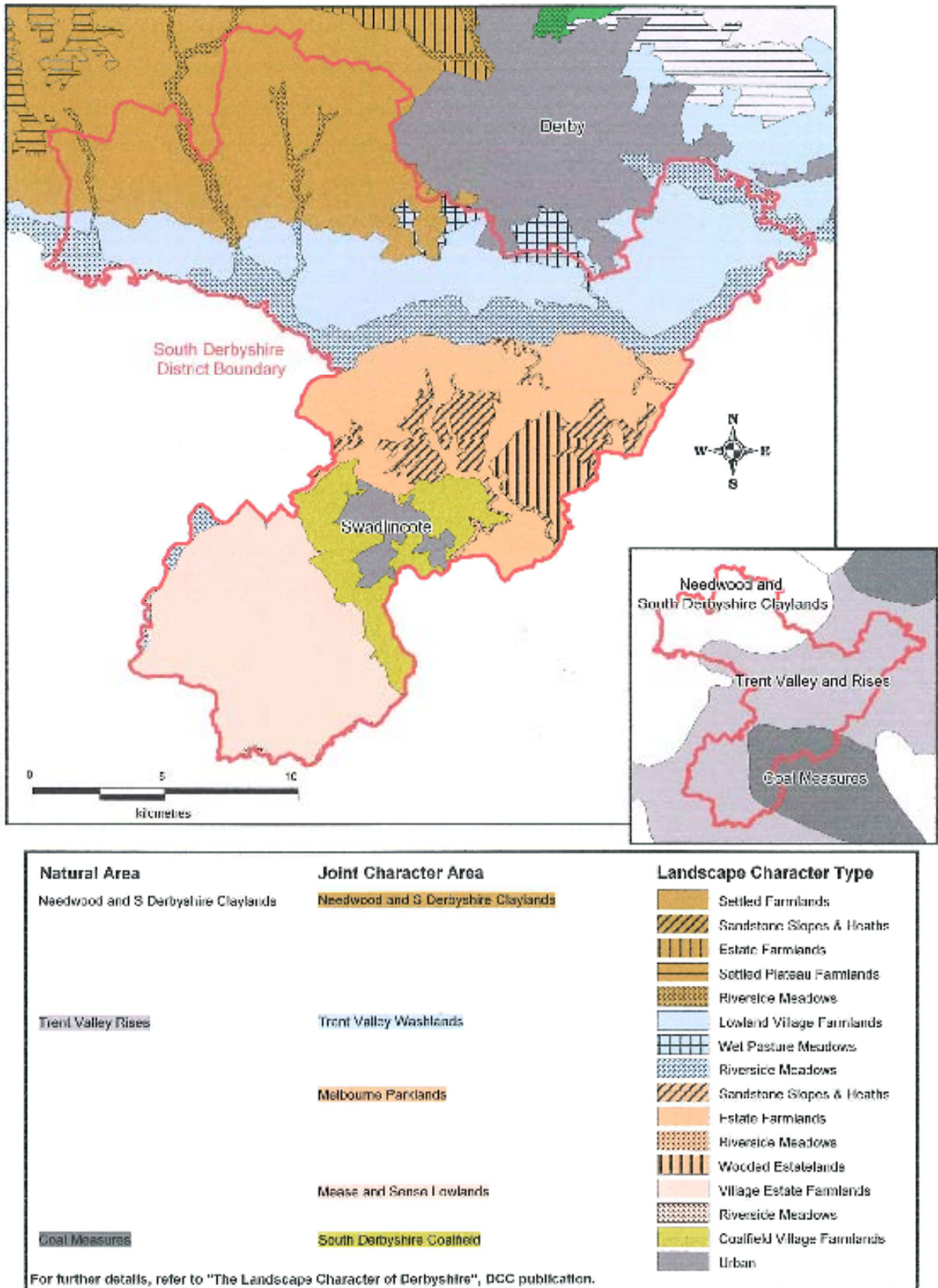
The extent and interrelationship of the three Natural areas, the five Joint Character Areas and the subdivisions into Landscape Character Types in South Derbyshire District are shown in table 1 overleaf and illustrated in Figure 2.

Information from the Derbyshire Landscape Character Assessment highlights a varied landscape within South Derbyshire District. The *Needwood and South Derbyshire Claylands* area in the north west of the district is a settled, pastoral landscape on gently rolling lowlands, whilst the adjoining *Trent Valley Washlands* is dominated by the broad flat flood plains of the Riverside Meadows encompassing the river Trent and the lower reaches of the Dove and Derwent. South of the Trent Valley, the *Melbourne Parklands* is an undulating area with mixed farming defined by country houses, landscaped parks and regular shaped estate plantations. Further south, Swadlincote lies within the *Leicestershire and South Derbyshire Coalfield* in a LCT identified as the *Coalfield Village Farmlands*. This is a gently undulating mixed farming landscape of shallow valleys and ridges dominated by mining and urban features. Finally, the remainder of the landscape in the south of the district is the *Mease Sence Lowlands*: a gently rolling agricultural landscape with scattered villages and occasional country houses.

Table 1: Natural Areas, Joint Character Areas and Landscape Character Types in South Derbyshire

Natural Area	Joint Character Area	Landscape Character Type
Coal Measures	Leicestershire and South Derbyshire Coalfield	Coalfield Village Farmlands
Needwood and South Derbyshire Claylands	Needwood and South Derbyshire Claylands	Settled Farmlands
		Riverside Meadows
Trent Valley and Rises	Mease/Sence Lowlands	Village Estate Farmlands
		Riverside Meadows
	Melbourne Parklands	Estate Farmlands
		Wooded Estatelands
		Sandstone Slopes and Heaths
		Riverside Meadows
	Trent Valley Washlands	Lowland Village Farmlands
		Wet Pasture Meadows
		Riverside Meadows

Figure 2: Natural Areas, Joint Character Areas and Landscape Character Types in South Derbyshire District.



Using data gathered in the Landscape Character Assessment it is hoped that evaluation work will be undertaken to further analyse the landscape of South Derbyshire District. For example, it may be possible to identify those areas of South Derbyshire that remain 'intact' in landscape terms, thus retaining their distinctive character.

In this respect the most intact areas are considered to be around Calke, Ticknall, Melbourne Park Valley and Trusley. Areas also retaining a lot of their distinctive character include, Bretby, the Repton Valley, Sutton on the Hill, Radbourne and Thurvaston.

The least intact areas in landscape terms are thought to be south of Swadlincote. Whilst landscape changes are occurring in the south of the district, and along the Trent Valley, more evaluation work is required to develop this analysis further.

Whilst the landscape character for South Derbyshire has been defined there is a need to acknowledge that there are forces for change which could affect the landscape of South Derbyshire District either positively or negatively. These include:

- The impact of the National Forest
- Agricultural intensification particularly in Melbourne Parklands and Mease/Sence Lowlands which can lead to the loss of habitats and landscape features
- Planning and development pressures (residential and industrial) particularly in the Trent Valley and Coalfield
- Gravel extraction in the Trent Valley

Analysis of data and knowledge for Natural Areas and Landscape Character:

Strengths:

- Natural Area and Landscape Character data for the district is complete and comprehensive.
- Landscape character data can be analysed.

Weaknesses:

- Whilst landscape character data can be analysed, there is no clear and proven methodology for evaluation.

Opportunities:

- Data can be used within South Derbyshire district, in line with the aims of the Natural Areas approach and Landscape Character assessment, to maintain and enhance the overall quality and diversity of the natural environment and landscape of South Derbyshire
- Landscape character work provides a broad strategic overview of landscapes and habitats. This in turn helps to consider forces for change and the potential consequential effects.
- Landscape character data can promote and target appropriate habitat creation and management, which can enhance the natural environment and biodiversity value of the district. Associated planting and species information is available to supplement this.

Threats:

- Development which doesn't conserve or enhance landscape character and appropriate habitats.
- The potential that Agri-environment schemes won't deliver appropriate environmental benefits.
- The uncertainty of Natural England's remit to deliver landscape and biodiversity issues.

Recommendations for Natural Areas and Landscape Character:

- Explore the use of appropriate habitats as landscape indicators for individual landscape character types.
- Carry out further analysis/evaluation work to establish broad policy zones for conservation, enhancement and restoration with a view to linking into the Local Development Framework and providing information for use in Supplementary Planning Documents.

2.1.2 Biodiversity

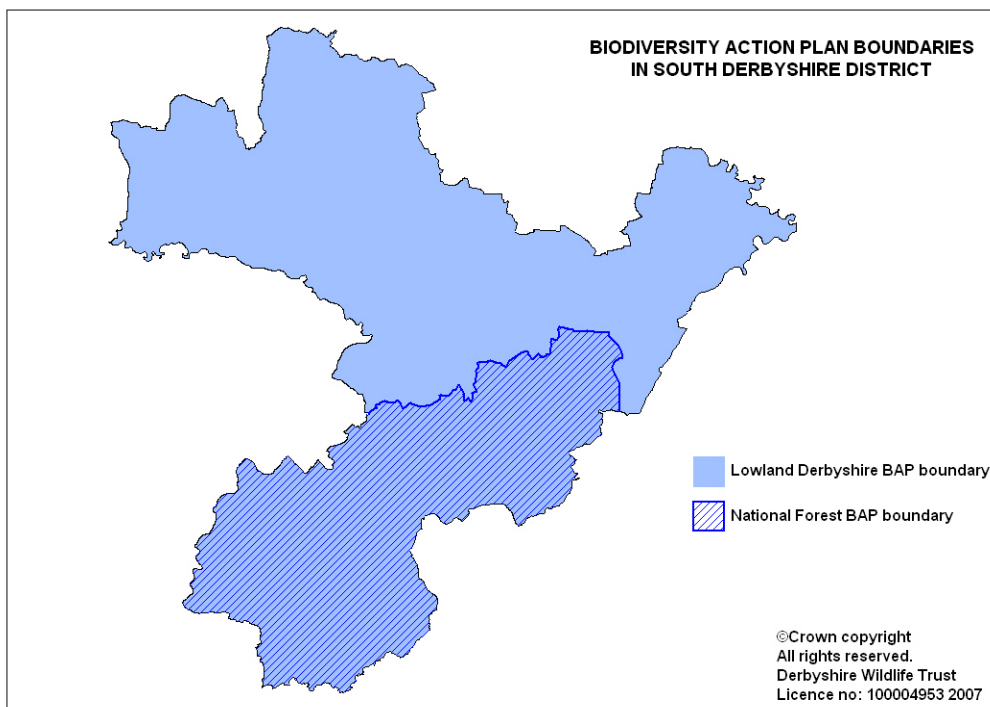
South Derbyshire District is covered by 2 Local Biodiversity Action Plans, these being the Lowland Derbyshire Biodiversity Action Plan and the National Forest Biodiversity Action Plan.

The Lowland Derbyshire Biodiversity Action Plan covers the whole of Derbyshire outside of the Peak District. It identifies habitats and species that are important at a county level and sets objectives and targets to conserve and enhance them. The Lowland Derbyshire Biodiversity Action Plan covers the whole of South Derbyshire District.

The National Forest Local Biodiversity Action Plan is the Biodiversity Action Plan for the National Forest Company and the National Forest Area. Thus it only covers part of South Derbyshire, as well as parts of Leicestershire and Staffordshire, however it does overlap with the Lowland Derbyshire Local Biodiversity Action Plan.

The National Forest BAP is more local in content than the Lowland Derbyshire Biodiversity Action Plan and identifies habitats and species both that are important within the National Forest Area and that are priorities within the National Forest Company. A map highlighting the coverage of these 2 plans is included at figure 3 below.

Figure 3: Biodiversity Action Plan Boundaries in South Derbyshire District



All priority habitats within these 2 plans occur to some degree within South Derbyshire District and are therefore considered within this audit. However only some of the priority species within the 2 plans occur and are significant within South Derbyshire District. Only those species known to be present within the district are considered within this audit.

The extent, distribution and knowledge of each of these habitats and species is summarised in tables 2 and 3 overleaf.

Table 2: Summary of habitat information for South Derbyshire

LBAP	Habitat	Extent (current knowledge)	Coverage of data
Lowland Derbyshire Local Biodiversity Action Plan	Lowland Broadleaved mixed woodland	There are approximately 70 known sites in the district. This includes 29 ancient woodland sites covering about 425ha. Woodland is an significant resource within South Derbyshire, particularly within the National Forest Area. Woodland cover is around 9% and this compares favourably with the rest of the county.	Data coverage good. A study into the extent of Ancient Semi Natural Woodland under 2ha in size across Derbyshire is currently being undertaken.
	Wet woodland	Full extent unknown. In the Trent Valley remaining sites are known to be small and fragmented. These areas of wet woodland are considered to be of regional importance.	Data coverage incomplete.
	Lowland Wood Pasture, Parkland and Veteran Trees	A provisional parkland inventory was completed for English Nature in 2004. In South Derbyshire this shows there to be 11 sites covering 1,040ha. This indicates that South Derbyshire is an important area for parkland within the county. Veteran tree surveys have been completed for estates such as Calke but records from the wider countryside are limited. Again, South Derbyshire is likely to hold important populations of veteran trees.	Provisional parkland inventory provided good levels of information. Information on veteran trees is incomplete
	Semi-natural grassland	Records indicate around 50 sites covering about 157.5ha. South Derbyshire has lost much of its former grassland resource and contains a low concentration of grassland compared with other parts of the county.	Data coverage good
	Lowland swamps, mires, fens and reedbeds	Records indicate around 20 known sites covering just under 20ha. These are particularly concentrated within the Trent Valley at former aggregate extraction sites and around reservoirs and these sites are important resource in a county context.	Data coverage fairly good but other sites may exist

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LBAP	Habitat	Extent (current knowledge)	Coverage of data
	Rivers and Streams	South Derbyshire contains important river systems in a county context. The main rivers in the district are the Trent, Dove, Derwent and Mease, along with their tributaries.	Coverage good. Data on water quality could be included here.
	Standing Open Waters, (including, ponds, lakes and canals).	35 lakes have been mapped in South Derbyshire, including Staunton Harold and Foremark Reservoirs. The Trent & Mersey Canal also runs through the district. Some ponds have also been mapped. A South Derbyshire Pond Survey undertaken by Derbyshire Wildlife Trust included ponds in four parishes: Walton on Trent, Catton, Coton in the Elms and Rosliston.	Data coverage fairly comprehensive but gaps may exist for ponds.
	Floodplain Grazing marsh	Extent unknown, although expected to be found in the Trent Valley.	Data coverage incomplete
	Ancient and or Species-rich hedgerows	Hedgerow resource likely to be extensive but data is limited. 2 parishes surveyed to Defra methodology through student university projects.	Limited data coverage only
	Cereal field margins	Extent unknown. Natural England may be able to provide information as to extent of arable field margins created and managed with agri-environment schemes.	Data coverage incomplete
	Heathland	Heathland is very limited in extent in South Derbyshire, with 1 known site covering less than 1 ha. It is not a significant habitat in the district.	Data coverage fairly good though habitat may exist within a mosaic at other sites.
National Forest Local Biodiversity Action Plan	Ancient woodland	See description for Lowland Derbyshire LBAP	
	Wet grassland and floodplain grazing marsh	Extent of floodplain grazing marsh not quantified although expected to be found in the Trent Valley. Wet grassland scattered but extent unknown	Data coverage incomplete
	Orchards	National Forest LBAP indicates that a few small traditional orchards survive around the Forest area, especially in back gardens of older houses or attached to farms, particularly around Swadlincote and Church Gresley.	Data coverage good.

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LBAP	Habitat	Extent (current knowledge)	Coverage of data
	Heathland	See description for Lowland Derbyshire LBAP.	
	Plantation woodland	Widespread across area. A significant feature, particularly within the National Forest Area.	Data coverage good
	Linear waters	See description for rivers and streams under Lowland Derbyshire LBAP, as well as canals.	
	Wet woodland	See description for Lowland Derbyshire LBAP	Inventory planned by National Forest Company through BAP.
	Open waters	See description for Lowland Derbyshire LBAP	Inventory planned by National Forest Company through BAP
	Lowland wood pasture and parkland with mature trees	See description for Lowland Derbyshire LBAP	
	Reedbeds	See description for Lowland Derbyshire LBAP	Inventory planned by National Forest Company through BAP
	Acid Grassland	In South Derbyshire, the resource is considered to be very scarce and mainly associated with former industrial sites, including Carvers Rocks SSSI. In 1999 Derbyshire Wildlife Trust undertook a grassland survey of the South Derbyshire area of the National Forest. Not a significant feature of the district.	Data coverage good however, additional patches are likely.
	Hedgerow	See description for Lowland Derbyshire LBAP.	
	Neutral Grassland	See description for Lowland Derbyshire LBAP Semi-natural grassland. In 1999 Derbyshire Wildlife Trust undertook a grassland survey of the South Derbyshire area of the National Forest.	Data coverage good.
	Field margins	See description for Lowland Derbyshire LBAP	
	Road Verges	Length of verge and quality unknown.	Inventory planned by National Forest Company through BAP
	Urban (including managed green spaces and naturally seeded urban areas or industrial sites).	Full extent unknown. Most sites likely to be restricted to urban centres but also occur in rural areas, e.g. mines, quarries and railways. Former coal, clay, sand and gravel workings also predominate in areas of South Derbyshire.	Data coverage incomplete.

Table 3: Summary of species information for South Derbyshire

	Species	Extent (current knowledge)	Coverage of data
Local Biodiversity Action Plan species * = Lowland Derbyshire priority species # = National Forest priority species	Water Vole *#	In the Trent catchment, water voles were not re-found at 91% of historical sites in a DWT 1997 survey and there were few remaining sites in the Lower Dove and Lower Derwent catchments. Since 1999, annual monitoring of a sample of sites by DWT has shown that declines are continuing. Water voles are on the verge of extinction in the Trent catchment and there are no known sites remaining on the River Dove. Remaining in less than 10 1km squares in South Derbyshire. Mink are well established in the area.	Data coverage good. Ongoing monitoring of some sites carried out by DWT volunteers.
	Oak Polypore *	Calke Park NNR is an important site for this species, containing an important population in East Midlands terms. It is likely to be present on more sites.	Data coverage thought to be incomplete.
	Arable Weeds *	(e.g. cornflower, and shepherd's needle). Once widespread but now scarce. Very little known about them in district. A few records held by DWT, DBRC and on National Biodiversity Network Gateway.	Data incomplete, with very few records. Records held by DWT, DBRC and National Biodiversity Network Gateway.
	Farmland Birds *	(Bullfinch, Corn bunting, Grey partridge, Lapwing, Linnet, Skylark, Reed bunting, Tree sparrow). Ad-hoc records of all species from within district. Tree Sparrow thought to be reasonably widespread, with important populations at a number of sites, including Foremark Reservoir and Etwall Sewage Works.	Data coverage incomplete. Records will be held by DOS.
	Bats *#	9 species known to be present in South Derbyshire. Area is the only known location for Serotine bat in Derbyshire. Little is known about the current status of most bat species in the area, although the available evidence suggests an overall decline in populations.	Data coverage ad-hoc and likely to be incomplete. Most comprehensive data located with the Derbyshire Bat Conservation Group and on protected species database

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	Species	Extent (current knowledge)	Coverage of data
	Spotted flycatcher *	A fairly common summer visitor and confirmed breeder in district. Red-listed bird of conservation concern.	Data coverage ad-hoc and likely to be incomplete. DOS hold information.
	Song thrush *	Records spread across the district, with some concentrations around built up areas. Fewer records than for elsewhere in county. DWT runs an ongoing public song thrush survey.	Data coverage ad-hoc and likely to be incomplete. DWT runs ongoing survey. DOS will also have information.
	Brown Hare *	A UK BAP species. Records spread across the district, with particular concentrations in rural areas away from river valleys and main built-up areas of the district. DWT runs an ongoing public brown hare survey.	Data coverage ad-hoc and likely to be incomplete. DWT runs ongoing survey. Derbyshire Mammal Group will also have information.
	Great Crested Newt *	Limited number of records, concentrated in particular around post-industrial land around Swadlincote, as well as Church Gresley, Overseal and Hilton Gravel Pits SSSI	Data coverage ad-hoc and likely to be incomplete.
	White Clawed Crayfish *	Limited number of records, concentrated in particular around Calke/Staunton Harold, in Dove Catchment on Foston brook at Scropton and Hilton brook at Hilton. Outlying records are also present at Catton Park, Melbourne and Borrowash.	Data coverage ad-hoc and likely to be incomplete.
	Otter *#	Uncommon but spreading, particularly along Trent, Derwent & Dove. Populations from these rivers are important in terms of recolonisation further north in the county.	Data coverage good, monthly monitoring of sites carried out by DWT volunteers at sites.
	Tower mustard *	Some older records, little recent knowledge.	Data coverage incomplete
	Adder #	Limited in extent in South Derbyshire. DWT holds no records however a sighting at Rosliston Forestry Centre has been reported. DBRC has this record. National Forest have done survey of whole forest area.	Data coverage ad-hoc and likely to be incomplete, apart from survey undertaken by National Forest. Data held by DWT, DBRC and National Forest.
	Barn owl #	Numbers thought to be low, but often seen and proven breeding is recorded at one or two sites in South Derbyshire each year. Nestbox scheme present within the Mease River Valley. National Forest have done survey of whole forest area.	Data coverage ad-hoc and likely to be incomplete, apart from survey undertaken by National Forest.. Most comprehensive data will be held by DOS and National Forest.

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	Species	Extent (current knowledge)	Coverage of data
	Black poplar #	The current distribution of the tree is now known, with a concentration found around Hilton and Hatton in the Trent Valley. Extensive surveys have enabled the known old and newly planted trees to be mapped across the whole area. South Derbyshire District is important in local and regional terms for this species.	Data coverage good for old and newly planted trees. Data held by Derbyshire Wildlife Trust.
	Bluebell #	Thought to be both widespread and abundant in the area. Both Derbyshire Wildlife Trust and Derbyshire Biological Records Centre datasets have large number of records, although likely to be in different formats. A Bluebell survey was undertaken by Derbyshire Wildlife Trust in the 1990's	Data coverage dispersed.
	Redstart #	No breeding records exist in the South Derbyshire area. Visits on passage only. Not a significant species for the district. National Forest have done survey of whole forest area.	Data coverage unknown. Most comprehensive data will be held by DOS and National Forest.
	Ruddy darter dragonfly #	Extent and distribution unknown. Thought to be rare and local within the National Forest area.	DANES likely to hold data.
Other locally significant species	Butterflies	Butterfly Conservation holds data for 15 sites in the district which hold high numbers of butterfly species, including species of conservation concern, such as Dingy Skipper, Grizzled Skipper, White-letter Hairstreak, White Admiral and Wall Brown.	Data coverage good for these sites, limited for wider countryside.
	Grass Snake	Limited distribution. Recorded in less than 10 1km squares in South Derbyshire.	Data coverage ad-hoc and likely to be under recorded.

Habitats of particular importance in South Derbyshire are:

- Wetlands along the River corridors, particularly as river corridors within South Derbyshire hold important concentrations of wetland habitats such as wet woodland and Reedbed. In addition many opportunities exist to extend the area of wetland habitat within these areas, particularly within former industrial sites.
- Parkland & Veteran Trees, because South Derbyshire contains an important proportion of the Derbyshire parkland extent.
- Woodland, particularly as it is a priority for habitat creation within the National Forest Area. Total woodland cover is about 9% of the district.
- Semi-Natural Grassland, as a lot of this resource has been lost within South Derbyshire.
- Post industrial sites/brownfield habitats

Species of particular importance in South Derbyshire are:

- Black poplar, as South Derbyshire contains a population of county and perhaps regional importance
- Oak polypore, as South Derbyshire contains important populations in regional terms.
- Otter, which is re-colonising other areas of the county from an initial return into the county via South Derbyshire District, and in particular the River Trent.
- Serotine bat, as South Derbyshire is the only known location for this species in Derbyshire.
- Water Vole. Although dramatic declines in populations have taken place in the district there are populations remaining and efforts should be made to conserve these.
- Other potentially important species include the great crested newt, farmland birds, the white clawed crayfish and the brown hare.

Analysis of biodiversity data and knowledge:

Strengths:

- 2 active Local Biodiversity Action Plans (BAPs) cover the area, which are working to conserve and enhance identified priority habitats and species. The National Forest Company has produced a focus for BAP work by area, covering habitats and species. This will be used as a focus for action to conserve and enhance habitats and species.
- Knowledge of the extent and condition of some habitats and species is good.
- South Derbyshire contains important concentrations of some priority Biodiversity Action Plan Habitats, namely wetlands, parkland, veteran trees and woodland.
- South Derbyshire contains important known populations of some species, for example black poplar, oak polypore, otter and the serotine bat.

Weaknesses:

- Data on extent and condition of certain habitats is incomplete.
- Data coverage for distribution of most species is ad-hoc and likely to be incomplete.
- The extent of some important habitats, e.g. semi-natural grasslands, is very restricted due to former losses.

Opportunities:

- Projects initiated through Local Biodiversity Action Plans provide an opportunity to conserve and enhance key BAP habitats and species.
- The various land management schemes operating within South Derbyshire, for example the National Forest Tender Scheme and agri-environment schemes, provide funds which can benefit key habitats and species if properly targeted. This can either be through funding work specifically targeted towards the habitats and species concerned or through funding habitat creation and enhancement work which indirectly benefits species.
- Landscape-scale projects operating within South Derbyshire present a great opportunity to enhance both the extent and condition of habitats and the distribution and populations of key species within the area. These include OnTrent and the National Forest.
- Restoration of former, current and future mining and quarrying sites can provide opportunities to create and extend habitats if properly targeted.
- The introduction of Planning Policy Statement 9 (PPS9) provides a real opportunity for the creation of new habitats through the development process. Similarly, within National Forest Tender Scheme projects there is scope for habitat creation in those areas of the Tender Schemes which are not planted to woodland.
- The Local Development Framework and Biodiversity Duty introduced through the Natural Environment and Rural Communities Bill provide a new mechanism through which the conservation and enhancement of biodiversity can be achieved.
- Working with local natural history groups and group specialists provides an opportunity to get better information on some species.

Threats:

- The current lack of complete information may mean that areas of habitat and populations of species could be lost before they are known about.
- Fragmentation of habitat areas has made them more susceptible to changes in surrounding land use.
- Inappropriate management is an ongoing threat to habitat extent and quality.
- Loss of habitats and inappropriate habitat management is also an ongoing threat to many species.
- Land use conflicts may affect the quality of certain habitats e.g. wetlands.

- Invasive species pose a threat to some native species e.g. mink on water voles, American signal crayfish on white-clawed crayfish.
- Negative impact of invasive species on habitats – for example New Zealand pigmyweed (*Crassula helmsii*), Japanese Knotweed and Himalayan Balsam.
- Misunderstanding of the needs of, and often legislation surrounding, certain species.
- Development pressures within the district.

Recommendations for biodiversity:

General:

- Work in partnership within South Derbyshire District Council and with adjacent local authorities to achieve the objectives and targets of the Lowland Derbyshire Local Biodiversity Action Plan and the National Forest Biodiversity Action Plan.
- Promote, encourage and enable use of Local Development Framework, PPS9 and the statutory Biodiversity Duty to deliver biodiversity gain across South Derbyshire District.

Habitats:

- Establish baseline habitat data for the area, through the completion of habitat inventories for habitats identified in the 2 Local Biodiversity Action Plans. The baseline information can then be used to:
 - Protect and enhance habitats through the planning system.
 - Identify key habitats within South Derbyshire and key sites/areas of habitat that have not already been identified.
 - Plan and target future work, including surveying and monitoring work, protection, habitat management and creation works and awareness-raising activities.
- Establish and maintain datasets for habitat creation works undertaken in South Derbyshire, for example GIS layers for habitat creation under the National Forest Tender Scheme and other land management schemes.
- Assess the relative value of brownfield and greenfield sites prior to making decisions about their management.
- Promote, encourage and enable the use of native and local provenance species in habitat creation and management.

Species:

- There is an urgent need to determine baseline figures, in the first instance for species identified as priorities in the 2 Local Biodiversity Action Plans, followed by other protected, notable and locally important species and priority invasive and non-native species. The baseline information can then be used to:
 - Inform the planning process
 - Identify key sites and areas for these species that have not already been identified; and to

- Plan and target future action to conserve and enhance the distribution and populations of key species within the area through surveying and monitoring, protection, habitat works and awareness-raising activities.
- Monitor and take action to combat the threats posed by invasive and non-native species such as mink and Japanese knotweed.

In other local authority areas within Derbyshire recommendations such as these for habitats and species have been taken forward through the production of a district- or borough-wide Biodiversity Action Plan (or Greenprint).

2.1.3 Sites of Nature Conservation Value:

South Derbyshire District contains a number of sites of conservation value, both statutory and non-statutory. These are described below:

Special Areas of Conservation

Special Areas of Conservation (SACs) are areas which have been given special protection under the European Union's Habitats Directive. They provide increased protection to a variety of wild animals, plants and habitats. In South Derbyshire the River Mease, which flows partly through Derbyshire, has been designated as a SAC and covers 9.49ha.

National Nature Reserves

National Nature Reserves (NNRs) were established to protect the most important areas of wildlife habitat and geological formations in Britain, and as places for scientific research. In South Derbyshire district there is 1 NNR: Calke Park.

Owned and managed by the National Trust, Calke Park NNR covers 79.7ha and houses an important area of wood pasture and parkland as well as having a large concentration of veteran trees. It is also important for deadwood invertebrates, fungi, for example the oak polypore and bats.

Sites of Special Scientific Interest (SSSIs)

Sites of Special Scientific Interest (SSSI's) are the country's very best wildlife and geological sites. South Derbyshire contains 5 SSSIs covering over 150ha of the land area. This equates to 0.5% of the land area of South Derbyshire. These sites, their size and condition are summarised in table 4 below:

Table 4: SSSIs in South Derbyshire

Site	Size (ha)	Condition
Calke Park SSSI	64.6ha	100% in favourable condition
Carvers Rocks SSSI	16.7ha	100% in favourable condition
Hilton Gravel Pits SSSI	32ha	0.22% of area in favourable condition; 99.78% of area in unfavourable recovering condition
Ticknall Quarries SSSI	30.1ha	100% unfavourable recovering
River Mease SSSI (partly in South Derbyshire District and also a SAC)	21.86ha	100% unfavourable no change

Derbyshire as a whole contains 87 SSSIs and so the SSSI coverage in South Derbyshire is low compared to the county as a whole. However, most of the SSSIs are concentrated in the Peak District National Park and so when looking at lowland Derbyshire the level of coverage is better.

The government has set a Public Service Agreement (PSA) target to bring into favourable condition by 2010 95 per cent of all nationally important wildlife sites (including SSSIs). Favourable condition for the purposes of this target is defined as sites being assessed as being in either favourable or unfavourable recovering condition). The data for South Derbyshire therefore indicates that, apart from the River Mease SSSI, all SSSIs in South Derbyshire District are meeting this target.

Local Nature Reserves

Local Nature Reserves (LNRs) are places with wildlife or geological features that are of special interest locally. They are designated for both people and wildlife.

At present there is just 1 Local Nature Reserve within South Derbyshire at Elvaston, covering 9.67ha of the district, although a second designation is currently being brought forward.

English Nature (now incorporated into Natural England) has suggested a target of one hectare of Local Nature Reserve per 1,000 population. As South Derbyshire has a population of around 86,500 (Office of National Statistics Mid-2004 estimate), this would suggest a target of 86.5ha within South Derbyshire should be designated as Local Nature Reserve. The evidence therefore shows that South Derbyshire is well below meeting this target.

Wildlife Sites

Wildlife sites are non-statutory sites of local conservation value. In South Derbyshire there are 157 Wildlife Sites covering nearly 1,700ha. This equates to just under 5% of the land area of South Derbyshire district. This is a higher percentage than some other districts and lower than others. In county terms the percentage cover is fairly good, although there are far fewer sites in the very south of the district.

Habitats known to be present on Wildlife Sites in South Derbyshire include grassland, woodland, road verges, ponds and lakes, streams and canals, parklands and wetlands. Although the habitats present on each site are known, thus far only limited habitat mapping has been undertaken and so the extent and size of some habitats on Wildlife Sites is currently unknown.

Nature Reserves

Derbyshire Wildlife Trust owns or manages 5 Nature Reserves within South Derbyshire. These are:

- Hilton Gravel Pits SSSI
- Carvers Rocks SSSI (owned by Severn Trent Water)
- Willington Gravel Pits
- Spring Wood (partly in South Derbyshire)

Dimminsdale, which is owned by Severn Trent Water and managed by the Leicestershire and Rutland Wildlife Trust, also falls partly within South Derbyshire.

Together these Nature Reserves cover around 150ha, which equates to around 0.4% of the land area of South Derbyshire, and contain a range of habitats including woodland, heathland and open water.

Other sites of nature conservation importance within South Derbyshire

Severn Trent Water also owns and manages:

- Foremark Reservoir

- Staunton Harold Reservoir
- Etwall Sewage Works
- Witches Oak Water

The National Trust also owns and manages:

- South Wood
- Calke estate (outside of the main park)

Derbyshire County Council owns and manages:

- Elvaston Castle
- Mickelover to Etwall Greenway
- Brickyard plantation

The Forestry Commission manages:

- Rosliston Forestry Centre
- Robin Wood
- Repton Shrubs
- Heath Wood
- Tunnel Woods
- Seal Wood

British Waterways manages

- The Trent and Mersey Canal and some adjoining land

The Woodland Trust manages:

- Sledge Wood, Repton
- Coton Wood
- Foxley Wood
- Long Close Wood
- Top Wood
- Botany Wood (Proposed)

In addition there are a number of large estates which own land, including some Wildlife Sites in South Derbyshire:

- Radbourne estate
- Bretby estate
- Marston Estate
- Donington estate

- Melbourne estate
- Church Commissioners
- Catton Estate

The Findern Footpaths Group manages a number of small sites in the Findern area.

Other sites/areas of nature conservation value.

A number of other areas and sites can have nature conservation value. They may be small but still add to the total area of land holding nature conservation value within South Derbyshire District. Such sites need to be identified and recorded otherwise they may be unknowingly destroyed and include:

- Gardens.
- Motorway verges
- Canals
- Footpaths/bridleways

Analysis of data and knowledge for Sites of Nature Conservation Value:

Strengths:

- South Derbyshire contains a good range of statutory and non-statutory sites of nature conservation value covering a good area of the district. These include nationally and perhaps internationally important sites such as Calke Park National Nature Reserve and SSSI and the River Mease SAC.
- The vast majority of the area of SSSI in South Derbyshire is in favourable condition and meeting the government's PSA target.
- Information on the condition of some sites of nature conservation value is known. A condition assessment of all Wildlife Sites is planned where sufficient information is available to enable this.
- Sites of nature conservation value do, in theory, have some degree of protection, either through legislation or through the planning system. For example, SSSI's should receive some protection from both development and inappropriate management whilst Wildlife Sites although a material consideration in the planning process cannot be protected from inappropriate management (subject to existing protected species legislation etc)

Weaknesses:

- The area of Local Nature Reserve in South Derbyshire is a long way below the recommended target of 1ha of LNR per 1,000 population. Just under 10ha of LNR is designated, whereas the target should be 86.5ha.
- Information on the condition of sites of nature conservation value in South Derbyshire, for example Wildlife Sites, is incomplete, although, as mentioned above, this is planned for Wildlife Sites where sufficient information is available.

- It is unknown as to whether all sites that qualify as sites of nature conservation value have been designated. Continual assessment of sites is undertaken through the Wildlife Sites system.

Opportunities:

- Where they qualify there is the opportunity to designate further sites of nature conservation value through the wildlife sites system.
- New sites of nature conservation value may be created.
- Opportunities are available, particularly through the work of conservation organisations operating in the area, to provide management advice to owners of sites of conservation value.

Threats:

- Development and inappropriate management.
- Sites being lost before their value has been identified or assessed.

Recommendations for sites of conservation value:

- The designation of more Local Nature Reserves should be considered as a priority for action, with a target of 86.5ha of Local Nature Reserve to be aimed for. A first step should be to identify sites suitable to take forward as potential Local Nature Reserves. However, in doing this it is also important to consider and ensure that sufficient and sustainable funding and resources are available for their long-term management.
- Sites should continue to be assessed against Wildlife Site criteria in order to ensure that any gaps in coverage are addressed. Identification of a number of potential sites has already taken place.
- Mapping of habitat information should be completed, to add value to habitat inventories covering the district and to inform future advice and management work.
- Produce a list of sites of nature conservation value in South Derbyshire and update the list on a regular basis as new sites are identified and created.
- Work in partnership to positively influence wildlife habitat quality on sites of nature conservation value, for example through the production and implementation of management plans or action plans or the creation of 'friends of...' groups for sites and areas.
- Work with developers to safeguard and enhance nature conservation value within sites.

2.1.4 Parks and Open Spaces

The District of South Derbyshire has a large area of public open space of recreational value in or immediately adjacent to the built areas of the District.

Open spaces can and should aim to conserve and enhance the Environment by:

- providing landscape and wildlife corridors
- projects and sites contributing to achieving local and national biodiversity action plan targets and sustainability targets
- improving air quality and countering pollutants through trees and plants
- trees and plants absorbing noise pollution
- creating more sustainable and less problematical urban drainage systems
- helping to reclaim derelict and degraded land by establishing new green spaces
- reducing the need to travel by car for recreation by providing local recreational opportunities and links between towns and the countryside
- reducing local car journeys by providing linear routes for travel to work / shop etc for pedestrians and cyclists

In 2005 an Open Space Strategy and Action Plan for South Derbyshire was drawn up by Knight, Kavanagh and Page. Subsequently an Open Spaces Management and Development Report is currently being prepared for South Derbyshire District Council by Groundwork Derby and Derbyshire. These reports covered all a three open space types, namely Parks and Open Spaces (Parks, cemeteries, allotments, amenity greenspaces, play spaces), Wildspaces and Countryside Recreation.

The recommendations of these reports will not be repeated here but should be followed in order to “allow South Derbyshire District Council to purposefully plan (and implement) the improvement, access and protection of open and green spaces within the District... in line with current best practice”.

2 other concepts are of relevance within an assessment of open spaces and greenspace:

Green Infrastructure.

This is defined as “a network of multifunctional greenspace” which is “set within and contributes to a high quality natural and built environment”.

It can include allotments; communal greenspaces; green corridors such as hedgerows and verges; brownfield and greenfield sites; urban and country parks and gardens; registered commons; village and town greens; play spaces; cemeteries; natural and semi-natural habitats; protected sites and areas; waterways and waterbodies; land in agri-environmental management; and public rights of way, cycleways and other recreational routes.

The concept of green infrastructure planning is based on a strategic approach to ensuring that environmental assets of natural and cultural value are integrated with land development, growth management and built infrastructure planning at the earliest stage.

This approach enables land management to be more proactive, less reactive, and better integrated with efforts to manage growth and development at all spatial planning levels (Chris Blandford Associates, 2005).

ANGST standards (Accessible Natural Greenspace Targets).

These provide a set of benchmarks for ensuring access to places of wildlife interest and recommend that people living in towns and cities should have:

- an accessible natural greenspace less than 300 metres (5 minutes walk) from home;
- statutory Local Nature Reserves at a minimum level of one hectare per thousand population;
- at least one accessible 20 hectare site within two kilometres of home; one accessible 100 hectare site within five kilometres of home; and one accessible 500 hectare site within ten kilometres of home.

Both concepts should be incorporated within open space and greenspace work within South Derbyshire.

Recommendations for parks and open spaces:

- Implement the recommendations contained in the 'Open Space Strategy and Action Plan' for South Derbyshire and the 'Open Spaces Management and Development Report'.
- Consider and aim to achieve the English Nature ANGST (Accessible Natural Greenspace Targets) for greenspace within South Derbyshire District.
- Implement a Green Infrastructure approach in order to enhance the quality of the environment within South Derbyshire.
- Implement the recommendations for habitats, species and sites of nature conservation value as a means to conserve and enhance the quality of wildspaces within South Derbyshire District.

2.1.5 Environmental Land Management Schemes:

A number of environmental land management schemes operate within South Derbyshire District. These include national level schemes such as Environmental Stewardship and the English Woodland Grant Scheme as well as the National Forest tender scheme, which is unique to the National Forest.

Countryside Stewardship Scheme

The Countryside Stewardship Scheme was a Government scheme which aimed, through the payment of grants, to improve the natural beauty and diversity of the countryside, enhance, restore and re-create targeted landscapes, their wildlife habitats and historical features, and improve opportunities for public access. Land managers would enter into agreements to manage their land in an environmentally beneficial way in return for annual payments. Grants were also available towards capital works such as hedge laying and planting, and repairing dry-stone walls.

This scheme was recently replaced by Environmental Stewardship but many countryside stewardship agreements are still in place and will continue to deliver benefits for a number of years.

In total there are 43 sites with countryside stewardship agreements in place either in or partly in South Derbyshire. These schemes cover just under 2,000ha, which equates to just under 6% of the land area of the district. This is above average cover for the county.

The schemes include a number of habitats including parkland, field margins, grassland, wetlands and hedges.

Environmental Stewardship

Environmental Stewardship is a new agri-environment scheme run by Defra which provides funding to farmers and other land managers in England who deliver effective environmental management on their land.

The primary objectives of Environmental Stewardship are to:

- Conserve wildlife (biodiversity)
- Maintain and enhance landscape quality and character
- Protect the historic environment and natural resources
- Promote public access and understanding of the countryside
- Natural resource protection

Within the primary objectives it also has the secondary objectives of:

- Genetic conservation
- Flood management

In practice, the scheme consists of 3 elements:

- Entry level Stewardship
- Organic Entry Level Stewardship

- Higher Level Stewardship

Because the scheme is so new there is not as yet any data available for analysis. However the scheme has the potential to deliver benefits both to the natural and historic environment and should be analysed when available to add to environmental information for the district..

National Forest Tender Scheme

The Tender Scheme is a grant scheme run by the National Forest Company (NFC) in partnership with the Forestry Commission (FC). This provides money for landowners to create and manage woodland and other habitats, enables landowners to diversify their landholding and business interests and can be linked with work that enhances or creates opportunities for recreation, access and tourism.

Information on 11 Tender Scheme rounds was available for the purposes of this audit from the National Forest Company and this identified 70 sites covering 1,200ha. This equates to 3.5% of the land area of South Derbyshire. Although information is available on habitats managed and created through the tender scheme this had not yet been mapped.

Woodland sites

Information was also available from the National Forest Company for Woodland Sites. Woodland Sites include boundary data for Tender Scheme sites, National Forest land acquisitions, planted sites associated with housing developments and mineral restorations, as well as conservation sites. The sites contain a range of different habitats, including woodland, wetlands, parkland, and many other habitats.

In total there are 97 Woodland Sites identified in the South Derbyshire area of the National Forest. These cover just under 1,300ha, which equates to just under 4% of the land area of South Derbyshire. As with the Tender Scheme data, information is available on the habitats present within these Woodland Sites but it had not yet been mapped.

Wood in Management sites

Wood in management sites represent areas of existing woodland within the National Forest that have been brought into some form of management. Data for this indicated 4 sites covering 2.9ha.

Woodland Grant Schemes

The English Woodland Grant Scheme is run by the Forestry Commission and provides a range of grants for both the stewardship of existing woodlands and the creation of new woodlands.

The aims of the scheme are to:

- Sustain and increase the public benefits given by existing woodlands; and
- Help create new woodlands to deliver additional public benefit.

Analysis of data and knowledge for Environmental Land Management Schemes:

Strengths:

- There are a good number of schemes available for landowners in South Derbyshire, providing funds to manage land in beneficial way.
- Data on the location, extent and content of schemes is comprehensive.

Weaknesses:

- There was insufficient time within this audit to analyse data on the contents of these schemes. Thus the environmental benefits delivered through them have not been fully quantified.

Opportunities:

- Schemes provides good opportunities to conserve and enhance the natural and historic environment of South Derbyshire.

Threats:

- Reduced funding available in the future for land management schemes such as the National Forest Tender Scheme and Environmental Stewardship.
- Changes to alternative land uses, for example pony paddocks, may reduce the area of land eligible for agri-environment schemes.

Recommendations for Environmental Land Management Schemes:

- Analyse Environmental Stewardship information when it becomes available.
- It would also be useful to assess the environmental benefits delivered through these schemes, for example the impact on habitats, species and archaeological features.

2.1.6 Water

Floodzones

Floodzone data is available for the main rivers in South Derbyshire and covers the areas of land that fall within the floodzone. This mainly affects the Trent Valley, which lies across the centre of the district and forms the south western boundary of the district and county.

Water Quality

The Environment Agency assesses the quality of rivers and canals by looking at nutrients, chemistry, and biology and sets targets for river quality. They then regularly monitor water quality at set sites.

This data needs to be analysed to see how many sites (or what percentage) are compliant/ marginal/ significant failures with respect to river quality targets in South Derbyshire.

Analysis of data and knowledge for water:

Strengths:

- South Derbyshire contains important rivers, one of which, the River Mease, is designated as a European Special Area of Conservation and SSSI.

Weaknesses:

- River Mease SSSI is in unfavourable condition
- Water quality data not analysed.

Opportunities:

- There are opportunities to create sustainable flood defences along Trent, incorporating habitat creation and enhancement projects.
- Positive impact that landscape-scale schemes such as OnTrent can have.

Threats:

- Obvious risk of flooding – may affect some built heritage.

Recommendations for water:

- Obtain and analyse water quality data for the district if possible.
- Use this information to target future works to improve water quality in the district.
- Reduce the level of development in the floodplain and promote the use of sustainable flood defences (e.g. SUDs) in any such developments through the planning system and generally.
- Look at flood defences along major rivers and promote the use of sustainable flood defences.
- Promote reduced use of water and increased recycling and re-using of water.

2.1.7 Air

The Environmental Health Department of SDDC monitors air quality in the District and produces an annual report which is submitted to the Department for Environment, Food and Rural Affairs (DEFRA). The latest report produced is for 2006 and covers the following pollutants:

- Carbon Monoxide
- Benzene
- 1,3-butadiene
- Lead
- Nitrogen dioxide
- Sulphur dioxide
- PM10

The Government has set air quality objective targets for each of these pollutants and pollution levels are monitored against these. Of the 7 pollutants South Derbyshire District Council only monitors nitrogen dioxide as part of the pollution monitoring programme. Data for the other pollutants is supplied from external sources.

Data from the latest South Derbyshire air quality report indicates that air quality objective targets will be more than met in South Derbyshire. This is mainly due to the rural nature of the majority of the district.

In addition there is also a government public service agreement (PSA) target to improve air quality by meeting the National Air Quality Strategy targets for carbon monoxide, lead, nitrogen dioxide, particles, sulphur dioxide, benzene and 1,3-butadiene. This PSA target is therefore already being met in South Derbyshire.

However, the South Derbyshire District Council Annual Monitoring Report for 2006 indicates that carbon dioxide emissions per capita in South Derbyshire during 2003 (estimated at 12.5kt) were actually higher than the England average (estimated at 10.57kt) and are comparatively high compared to the wider regional and National averages. This is something that should be investigated further.

Carbon Footprint Village Project

The idea of this project is to reduce the carbon footprint of villages in South Derbyshire by encouraging and enabling all villagers, businesses and public services in the village to take part and through the provision of advice, suggestions, research and funding. The first village to take part was Walton on Trent.

Analysis of data and knowledge for air:

Strengths:

- Air quality objective targets are being met in South Derbyshire.
- Proactive projects instigated within district – e.g. Carbon Footprint Village project.

Weaknesses:

- Carbon dioxide emissions per capita in South Derbyshire during 2003 were comparatively high compared to the wider regional and national averages.

Opportunities:

- Further positive gains can be made through further extension of Carbon Footprint Village Project.

Threats:

- Climate change may affect air quality adversely.

Recommendations for air:

- Investigate and implement where possible potential means of reducing per capita carbon dioxide emissions and traffic emissions.
- Extend the Carbon Footprint Village Project.
- Use the structures already in place within South Derbyshire (The annual air quality report for South Derbyshire District produced by the Environmental Health Department of South Derbyshire District Council) to continue to monitor the air quality situation in the district and act to address any negative changes in air quality where possible.

2.2 Built and Historic Environment

South Derbyshire contains a rich built heritage. This is particularly in evidence in the centre and north east of the district, for example around areas such as Melbourne, Bretby, Calke, Ticknall, Swarkestone and Repton. This built heritage is described further below.

2.2.1 Conservation areas

A conservation area is an area of special architectural or historic importance, the character of which it is desirable to preserve or enhance. There are 22 conservation areas in South Derbyshire, which are:

- Aston on Trent
- Barrow on Trent
- Bretby
- Etwall
- King's Newton
- Lullington
- Melbourne
- Milton
- Netherseal
- Newton Solney
- Repton
- Shardlow
- Smisby
- Stanton by Bridge
- Swadlincote
- Swarkestone
- Ticknall
- Trent and Mersey Canal
- Trusley
- Twyford
- Walton on Trent
- Woodhouses

The South Derbyshire District Council Annual Monitoring Report for 2006 indicates that 50% of these conservation areas have an up to date character appraisal.

2.2.2 Listed buildings

Listed buildings are buildings which are of special architectural or historic interest. There are currently 711 listed buildings in South Derbyshire. Of these:

- 48 are grade 1 listed, about half of which are in the parish of Melbourne.
- 47 are grade II* listed.
- The remaining 616 are grade II listed.

The South Derbyshire District Council Annual Monitoring Report for 2006 indicates that 44 of these buildings are considered to be at risk, including 3 grade 1 listed buildings, 4 grade II* listed buildings and 37 grade II listed buildings.

2.2.3 Ancient monuments

There are 20 scheduled ancient monuments in South Derbyshire District, including Swarkestone Bridge.

2.2.4 Historic gardens

There are 5 historic gardens to be found in South Derbyshire, covering 620.64 ha. These are Calke Abbey, Bretby Hall, Melbourne Hall, Swarkestone Old Hall and Elvaston Castle.

Analysis of data and knowledge for built heritage:

Strengths:

- South Derbyshire contains an impressive built heritage.
- The built heritage is afforded a good level of protection through the planning process.

Weaknesses:

- Not all conservation areas have up to date character appraisals

Opportunities:

-

Threats:

- The presence of some built heritage within river floodzones, particularly along the River Trent means that they may be vulnerable to flood risk.
- Threats to some listed buildings, considered to be 'at risk'.

Recommendations for built heritage:

- Place protection on buildings and monuments where they are threatened or at risk.
- Produce up to date character appraisals for conservation areas.
- Promote the value of built heritage and seek to conserve and enhance across the district.
- Address threats to built heritage e.g. flooding risk.

2.3 Waste, Recycling and Energy Consumption

2.3.1 Waste generation

The South Derbyshire District Council Annual Monitoring Report for 2006 provides figures for waste generation, recycling and composting:

- During 2004/05 474.9kg of waste was generated per person. Of this 11.39% was recycled and 12.94% was composted.
- During 2005/06 461 kg of waste was generated per person.; Of this 13.19% was recycled and 12.40%was composted.

Although the figures only cover a short time period the amount of waste produced per person has decreased and the proportion of waste diverted from landfill has increased. It is important that these trends are maintained.

2.3.2 Waste and recycling services delivered

South Derbyshire District Council operates the following waste and recycling services:

- A kerbside composting scheme for 50% of the households in South Derbyshire. They also offer subsidised composter units for all residents to compost waste at home.
- A kerbside collection service for 98% of households in South Derbyshire that aims to collect paper, foil, glass bottles and jars, tins and cans, and textiles.
- 1 household waste recycling centre at which the following materials can be recycled:
 - metals
 - glass - including windowpanes and windscreens
 - garden waste
 - wood
 - chipboard
 - engine oil
 - paper
 - cardboard
 - batteries

There are also 81 recycling centres distributed throughout South Derbyshire District, providing banks to recycle the following materials:

- Glass Bottles and Jars
- Aluminium and steel cans
- Plastic Bottles
- Textiles
- Newspapers & Magazines
- Cardboard

A bulky waste collection service is also provided for large items, (e.g. furniture or fridges).

South Derbyshire District Council also provide a range of commercial waste collection and disposal services including:

- Refuse collection
- Clinical waste collection and disposal
- Removal of one off loads or items
- Commercial Waste Bins
- Hazardous Waste Collection

Recycling rates and targets

Figures suggest that 24% of South Derbyshire's rubbish is now recycled. This means that the district has exceeded its statutory recycling target of 21% by 2005/6. It has also met the government's PSA target to enable 17 per cent of household waste to be recycled or composted by 2004.

2.3.3 Energy consumption

The South Derbyshire District Council Annual Monitoring Report for 2006 indicates that gas and electricity usage have increased within South Derbyshire District in recent years, although data was available only up to 2004. Although only limited data was available, per capita water usage was estimated at 151 litres per day in South Derbyshire District. This figure is slightly below the England average of 154.14 litres a day.

Analysis of data and knowledge for waste, recycling and energy consumption:

Strengths:

- South Derbyshire is exceeding its own recycling targets and the government PSA target.
- A good range of recycling services are available for the residential sector.

Weaknesses:

- Limited trade and business recycling.

Opportunities:

- Organisations with effective waste and environmental management schemes can be used as best practice examples to promote and encourage improved environmental management, increased recycling and waste reduction measures within the business community.

Threats:

- Fly-tipping is an ongoing problem.

Recommendations for waste, recycling and energy consumption:

- Increase recycling rates across South Derbyshire District and reduce the amount of waste going to landfill by:
 - Extending waste and recycling services where possible to more locations and to include more items.
 - Continuing to promote the concept of 'reduce, re-use and recycle'.
- Work with county-wide and other organisations (e.g. Derbyshire Waste Forum) to initiate and/or join up to wider county, regional and national waste reduction and recycling initiatives.
- Encourage and enable improved environmental management, increased recycling and waste reduction measures within the business community.
- Promote the use of reduced packaging and recyclable packaging within businesses.

3 Awareness-Raising and Community Action

Awareness-Raising

Awareness raising of the issues, opportunities and threats highlighted in this audit is a cross-cutting theme and can be a vital tool in ensuring that the environment of South Derbyshire is conserved and enhanced for the benefit not just of ourselves but also for future generations.

There is an opportunity for the LSP to play a lead role in this awareness-raising within a range of sectors, including:

- Schools
- Communities
- Individuals
- Businesses

This can be achieved through a number of means, including:

- Promotional work
- Events
- Provision of advice, guidance and literature

Such action needs to be taken forward in parallel with the other recommendations within this audit.

Community Action

A lot of action for the environment takes place at the local community level. Despite being of huge value, much of this work is carried out voluntarily and in isolation from other work. It is often also not recorded or celebrated in a wider context.

This effort at the local level needs to be recognised, supported and celebrated. Local groups have also registered a need to be able to network with other groups and to access support and sources of advice and guidance.

Two recommendations can therefore be suggested:

- Follow up on the interest shown in establishing an Environmental Forum in South Derbyshire, as a means for individuals, groups and organisations active in environmental conservation in South Derbyshire to network and seek advice and guidance.
- Establish a register of local wildlife groups in order to promote networking and monitor work undertaken and keep this up to date.

4 Final conclusions

South Derbyshire District has a rich and varied environmental heritage. This includes important habitats and populations of species, impressive buildings, historic parkland and striking landscapes. It is also the focus of important, large-scale environmental initiatives, in particular the National Forest and the OnTrent project, it provides a wide range of waste and recycling initiatives and in the carbon footprint village project has instigated an important projects linked to addressing the causes of climate change.

This audit has looked to analyse the strengths and weaknesses of the environment of the district and the environmental information and data available for the district, as well as summarising the opportunities available to enhance the environment, and threats posed to the environmental assets. For example, in terms of environmental information, the audit indicates that a range of data is available and for some environmental assets is very comprehensive (e.g. for species such as the black poplar). However this information and data is also often ad-hoc and widely dispersed and many gaps exist in the knowledge base. Having adequate baseline data is the cornerstone to successful environmental action and without this it can be harder to reach informed decisions and target conservation action to where it is most required.

The audit has also recommended priorities for future action to conserve and enhance the environment of South Derbyshire district. These include new actions and initiatives as well as encouraging work to build on the positive action already occurring across the district. As well as actions directly related to the aspects of the environment covered in the audit the need for awareness-raising, supporting of community action and partnership working is also emphasised.

Despite the rich environmental heritage present in South Derbyshire district there is still great potential for change and further improvement. Through following up on the recommendations in this audit the LSP, other organisations operating within the district and the community of South Derbyshire District can take positive steps towards conserving and enhancing the environment in the long term for the benefit of all.

Bibliography

Chris Blandford Associates; 2005; '*A green infrastructure plan for the Harlow area*'

Appendix 1 – Description of the Landscape Character of South Derbyshire

The *Needwood and South Derbyshire Claylands* is a settled, pastoral landscape on gently rolling lowlands. The dominant landscape type *Settled Farmlands* (LCT) exhibits these key characteristics being a well settled but sparsely populated landscape containing small villages, isolated groups of roadside cottages and scattered farmsteads. There is dairy farming with localised arable cropping with small to medium sized fields enclosed by hedgerows. The area is defined by its scattered hedgerow and watercourse trees with occasional small woodlands. The *Riverside Meadows* dissects this landscape with narrow flat floodplains of meandering streams visually defined by lines of dense watercourse trees. Pasture predominates due to seasonal flooding and the landscape is generally unsettled.

The *Trent Valley Washlands* JCA is dominated by the broad flat flood plains of the *Riverside Meadows* encompassing the river Trent and the lower reaches of the Dove and Derwent. This is a pastoral landscape enclosed by hedgerows with trees defining the line of the rivers. The higher river gravel terraces of the *Trent Valley Washlands* become a more open, gently rolling mixed farming landscape called the *Lowland Village Farmlands*. Small pockets of lower lying mixed farming of the *Wet Pasture Meadows* about the outskirts of Derby.

The *Melbourne Parklands* JCA is undulating with mixed farming defined by country houses, landscaped parks and regular shaped estate plantations. Within this area the differences in the landscape character types are subtle and the main differences are reflected in their names – *Estate Farmlands*, *Wooded Estatelands*, *Sandstone slopes and Heaths* and *Riverside Meadows*.

Swadlincote lies within the *Leicestershire and South Derbyshire Coalfield* JCA in a LCT identified as the *Coalfield Village Farmlands*. This is a gently undulating mixed farming landscape of shallow valleys and ridges dominated by mining and urban features.

The remainder of the landscape to the south is the *Mease Sence Lowlands* JCT a gently rolling agricultural landscape with scattered villages and occasional country houses. The *Village Estate Farmlands* LCT is characterised by mixed farming with intensive cropping and improved pasture punctuated by small discrete broadleaf plantations and game coverts. Small hilltop villages often with prominent church spires are visually distinct but the character is changing due to on going work of the National Forest.

The *Riverside Meadows* is a pastoral landscape of generally small regular hedged fields within the narrow floodplain of the tightly meandering River Mease. Defining characteristics include the scattered locally dense lines of trees along the riverbank.

The ‘Landscape Character of Derbyshire’ is available as a paper document, a CD or a PDF document on the DCC web site (www.derbysire.gov.uk). Within this there are detailed descriptions of the landscape character types with guidance for tree, woodland and hedgerow planting.