

Introduction and Overview

Doncaster Local Biodiversity Action Plan
January 2007



1	Acknowledgements	1
2	Foreword	2
3	Introduction	
	- What is Biodiversity?	3
	- The importance of Biodiversity	3
	- Environmental Sustainability	4
	- Shared Priorities – A shared commitment	5
4	‘Biodiversity Challenge’ – The Framework	
	- The National Response	7
	- The Regional Response	9
	- The Legal Framework	10
	- The Planning Framework	13
5	Biological Recording in Doncaster Borough	
	- A brief history	16
	- Baseline Information – Habitats & Species	17
6	The Biodiversity of Doncaster Borough – An Overview	
	- Natural Areas	20
	- Local Biodiversity and Landscape Character	21
	- Designated Nature Conservation Sites	22
	- Magnesian Limestone Areas	27
	- The Sandy silts and clays	28
	- The River Don Flood Plain	29
	- The Sherwood Sandstone	31
	- Humberhead Level Peatlands	30
7	Developing Doncaster’s Local Biodiversity Action Plan	
	- Primary Conservation Aims	34
	- Key Conservation Objectives	35
	- The Partnership’s Approach	36
	- Conservation Targets	36
	- Implementation	36
	- Monitoring and Reporting	38
	- The LBAP Format	39
	- The Audits	40
	- Criteria for Species selection	41
	- Criteria for Habitat selection	46
	- The Action Plans	37
	- Habitat Action Plans	47
	- Species Action Plans	54
8	Common Issues affecting Local Biodiversity	55
9	Getting Involved	
	- Generic Actions	60
	- Play Your Part!	65



1 Acknowledgements

Doncaster Biodiversity Action Partnership would like to acknowledge the financial support of the Big Lottery and Doncaster Metropolitan Borough Council.

The preparation of the Doncaster Local Biodiversity Action Plan would not have been possible without the involvement of many individuals and organisations. These include members of Doncaster Biodiversity Action Partnership, the Doncaster Naturalists' Society, Yorkshire Naturalists' Union, Doncaster's Biological Records Centre, Doncaster Metropolitan Borough Council officers and consultants, and all other contributors and consultees whom we've endeavored to acknowledge throughout the document.



2 Foreword

We all cherish the beauty of the countryside, the opportunities it offers and qualities it represents. Doncaster Borough is a unique area and its largely rural nature supports great habitat diversity and a wealth of wildlife, although much of this is found quite literally on our doorsteps and within the towns and villages where we play-out our day-to-day lives. Doncaster's biodiversity has been shaped not purely by environmental factors, but also by mans influence and we have an instrumental role to play in retaining the distinctive qualities of the area, not only for ourselves but so that they can be enjoyed by future generations.

Whilst the countryside around Doncaster appears to be visually attractive and bountiful, serious issues are threatening its richness and biodiversity – indeed some has already been lost. Once-common plants and animals are now seldom seen and others have become extinct. Natural habitats, which were once widespread, are now limited to isolated fragments.

It is vital that this decline in biodiversity is halted and the trends of species loss and habitat fragmentation are reversed. Action on a local scale will in turn help to protect biodiversity at a national, international and global level.

This challenge needs to be addressed by all of us, but particularly by those people and organisations that most influence and have practical responsibility for the development, use and management of land. Every resident can play a small but significant part in protecting the Borough's biodiversity.

The objective is to preserve existing habitats, recreate lost habitats and increase the populations of locally significant and vulnerable species. Aims have been set which are ambitious but, if all those with the responsibility, power and determination to implement change work together, they are achievable.

3 Introduction

What is Biodiversity?

- 3.1 Biodiversity (Biological Diversity) describes the whole range of biological life on Earth: mammals, birds, amphibians, reptiles, fish, invertebrates, plants, fungi and micro-organisms. Biodiversity refers to diversity between and within ecosystems and habitats, the variety of different species and also to genetic variation within individual species. It is the most important indicator of the state of our environment.
- 3.2 The biodiversity of the Earth is increasingly under threat, largely due to human activities, which are changing and destroying habitats, ecosystems and landscapes on an ever-increasing scale, as well as the natural processes that have shaped them.



The importance of Biodiversity

- 3.3 Biodiversity is extremely important to people's quality of life. Various species have an important role in our everyday life; including producing oxygen, processing carbon, cleaning water, reducing flooding and pollution, providing fuel, food and clothing, recycling rubbish and producing drugs.
- 3.4 A stimulating and beautiful environment also has a positive impact on health –mental and physical-, education and wellbeing. The natural environment offers qualities that motivate, inspire and enrich our quality of life and has aesthetic and spiritual values.
- 3.5 There are also a number of economic benefits, with a 'green environment' creating an attractive business setting, representing quality and prosperity. Such benefits are now being realised through the growth of eco-tourism, with recreation and tourism providing a range of investment opportunities. Ecosystems can also be harvested for economic benefit.
- 3.6 Fundamentally, biodiversity supports life itself and has an intrinsic value that should be cherished and preserved for its own sake.

Environmental Sustainability

- 3.7 Sustainable development can be defined as “development, which meets the needs of the present without compromising the ability of future generations to meet their needs”. An analogy is often used which describes a three-legged stool, whose legs represent social, economic and environmental issues. A balance needs to be achieved between the three to deliver sustainable development. Biodiversity is dependent upon and an indicator of a sustainable and healthy environment, as species that are lost can never be replaced nor habitats, simply recreated. A clearer understanding of the way in which development may affect biodiversity, will better inform decisions relating to the capacity of the environment to accommodate our growing needs, without adverse effect.
- 3.8 Doncaster’s Local Strategic Partnership (DSP) has a clear vision of sustainable growth and prosperity for the Borough, as described in the Borough Strategy ‘Shaping Our Future – A Strategy for the Borough of Doncaster 2005-2010’. The delivery of its vision is supported by 7 Transformational Goals, one of which is ‘Environmental Sustainability’ and includes a specific commitment to this Local Biodiversity Action Plan. The five themes underpinning the Borough Strategy represent a shared picture of the key challenges and priorities facing the Borough. Outcomes 5 and 6 of the Sustainable Doncaster Communities priority theme relate specifically to biodiversity and the natural environment, however it is important that all themes and outcomes are approached holistically to embed the necessary awareness, mind-set, mechanisms and opportunities to deliver ‘Environmental Sustainability’.

“Doncaster will be a place where the importance and value of our Present and future environment will influence all decision making, public and private” (Doncaster Borough Strategy)





Shared Priorities - A shared commitment

3.9 Doncaster Council and its partners have formulated a series of 'Shared Priorities' for the period 2007-2010, designed to address the challenges emerging from the Borough Strategy and national priorities. These form the basis of a new 'Local Area Agreement' (LAA) with the government, the delivery of which will be driven by existing and planned, borough-wide strategies and plans, such as the Local Biodiversity Action Plan. The Shared priorities are grouped under five themed headings, within each of which are key actions and measures of progress. The protection and enhancement of the natural environment features within the 'Safer, Stronger & Sustainable Communities Theme', however each priority offers opportunities and mechanisms to deliver biodiversity conservation.

- 3.10 A raft of additional partner and organisational strategies, documents, management plans and practices provide a framework to examine and explore opportunities for biodiversity conservation. These include area and site Management Plans, Catchment Area Management Strategies and Water Level Management Plans and general and specific land-use strategies such as the Local Development Framework, Greenspace Strategy and Access Strategies.
- 3.11 New models of local service delivery and neighbourhood management provide further opportunities to participate in environmental initiatives and uptake funding, to achieve broader goals and engage new partners including the business community, voluntary sector and private stakeholders. A good example of this is the pilot DMBC Tree Planting Scheme, which allows Council Officers to offset their carbon footprint by planting trees within community woodlands and is part of the Local Authority's wider Carbon Management Programme (with the Carbon Trust). This highlights the way in which habitat creation can not only realise LBAP objectives, but also play a role in addressing climate change.
- 3.12 The LBAP paints a detailed picture of the Borough's biodiversity, the issues affecting it and proposes a series of conservation actions, however these are far from exhaustive. The adoption of the Generic Actions as set out in Table 6, will deliver significant cumulative benefits and change how partners and individuals go about their day-to-day activities. This underpins the duty placed on all local authorities towards biodiversity protection, as set out in the 2006 Natural Environment and Rural Communities Act, and at a strategic level will ensure that biodiversity principals are;
- adopted into approaches regarding the delivery of services and functions and involve all Partner landholdings
 - promoted in urban development, and regeneration plans and projects
 - incorporated into land management practices in rural regeneration schemes
 - encouraged to help engender local pride and environmental stewardship

4 'Biodiversity Challenge' – The Framework

The National Response

- 4.1 Nature conservation came to the forefront of the Global agenda in 1992 when over one hundred and fifty governments (including the UK) signed The Convention on Biological Diversity at the Earth Summit in Rio de Janeiro. This was the first time a legal framework had been provided for biodiversity conservation, and it called for national strategies and action plans to be created and enforced which would conserve, protect and enhance biological diversity.
- 4.2 The UK government's response was to consult with specialists within the conservation sector on the issues raised at the Convention on Biological Diversity, who then advised upon and championed the 'Biodiversity Challenge' initiative. The importance of an agreed set of objectives, targets and of a multi-organisational approach to biodiversity conservation was recognised, and these were endorsed in 'Biodiversity: the UK Action Plan', which was launched in 1994.
- 4.3 The following principals underpin the national UK Action Plan, and are also applicable at a local level;
- The sustainable use of biological resources
 - The cautious use of non-renewable resources
 - The promotion of a multi-agency approach to biodiversity conservation, including individuals and communities and not just government lead. This is being championed through Local Biodiversity Action Plans
 - Biological conservation should be based upon a sound knowledge base
 - The conservation of biodiversity should be integrated within government programmes, policy and action
 - Decisions should be guided by the precautionary principal, that is, where decisions are complex or insufficient knowledge or information exists to understand biodiversity impact, then precautionary conservation measures are necessary.
- 4.4 Following the publication of 'Biodiversity: the UK Action Plan', the UK Biodiversity Steering Group was established to advise the government on how to fulfil its commitment to delivering the Plan. In 1995 'Biodiversity: the UK Steering Group Report – meeting the Rio challenge' was produced, which set out how to achieve this through the Local Biodiversity Action Plan process, and was followed by 'Volume 2, Action Plans' which developed a range of targets for 391 key species and 45 habitats of national conservation concern, up to the year 2010. The Steering Group also set up guidelines, with the Local Authority Association and the Local Government Board that could be used at a local level. Doncaster's Local Biodiversity Action Plan (LBAP) is one of 162 Local Biodiversity Action Plans in England, Scotland and Wales.
- 4.5 In 1996 the government endorsed the Steering Group recommendations and established the UK Biodiversity Group to carry forward the work. Further research, reporting and monitoring has shaped both the organisational structure of the UK BAP and its sub-groups, along with its priorities and responsibilities, to facilitate all aspects of biodiversity conservation.



The Regional Response

4.6 Doncaster Borough is part of the Yorkshire and Humber region, which covers an area of around 15,400km². The Yorkshire and Humber Biodiversity Forum is an association of organisations that support biodiversity and sustainable development, and who promote regional and local partnerships.

4.7 In response to 'Biodiversity Challenge' and in line with the principals underpinning the UK BAP, the Forum published 'A Biodiversity Audit of Yorkshire and the Humber' in 1999. With multi-organisational contributions, the Audit reported on the status of 35 UK priority habitats and 173 UK priority species, i.e. those of national and international importance, which were known to be present in the region. The document was a starting point, which 'benchmarked' the regions biodiversity resource, began to consolidate the Yorkshire and Humber knowledge base and therefore enable biodiversity to become an important and tangible consideration of policy making at a regional level.



4.8 In 2003 the Forum published a supplementary document to the Audit, which listed habitats and species of regional importance and included 33 habitats and 288 species. The Audit identified those habitats and species which were considered to be regionally characteristic, significant or have a regional stronghold, but which may be of lesser conservation concern. The habitats and species were selected using broad criteria, which included the proportion of the national resource within the region, factors affecting decline, its international importance, its association with the region, the regional ability to affect its conservation status, its popular appeal and related ability to promote biodiversity conservation.

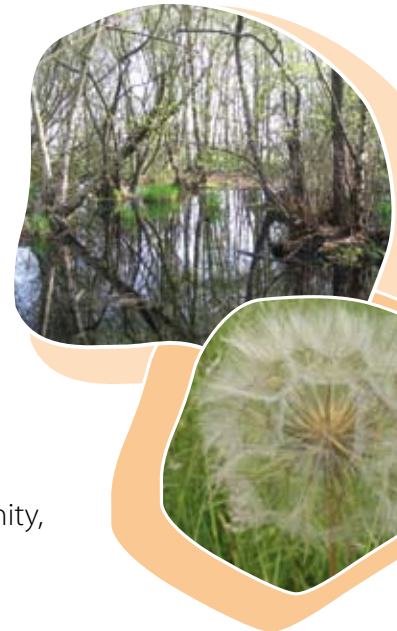
4.9 Throughout the region LBAPs have been prepared and are being implemented according to their individual priorities and status. All are complimentary in terms of regional priorities, particularly relating to habitats and also those species, whose conservation requirements are best addressed through the management of land as defined by natural boundaries, rather than administrative boundaries, i.e. river catchments. The delivery of biodiversity projects through the linkage of neighbouring LBAPs and formation of sub regional partnerships is successfully underway and regional priorities are now used as indicators to measure biodiversity progress.

The Legal framework

- 4.10 The United Kingdom has a series of national and international obligations in relation to the conservation of biodiversity. These are often imposed through statutory designations, structured around;
- The protection of specific sites or areas
 - The protection of habitats of nature conservation significance, or specific issues affecting them
 - The protection of important populations of species or groups of species, or specific issues affecting them.
 - The conservation and enhancement of natural beauty and amenity, wildlife (fauna and flora), cultural heritage, and natural heritage (including geological and geomorphological features).

An overview of the most relevant legislation is provided below, whilst a more comprehensive list is contained within the 'Further Information' document.

- 4.11 The Local Government Act 2000 places a statutory duty on Local Authorities to prepare Community Strategies, and recognises Local Biodiversity Action Plans as examples of 'good practice' within this framework.
- 4.12 Section 74 of The Countryside and Rights of Way Act (CROW) 2000 places a duty on Local Authorities to conserve biodiversity in accordance with the Convention. Whilst Section 78 deals with duties in relation to Sites of Special Scientific interest (SSSIs)
- 4.13 The Natural Environment and Rural Communities Act 2006 places a duty on every public authority to, "in exercising its functions, have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity."
- 4.14 The Wildlife and Countryside Act 1981/85 is the statutory basis for species and habitat protection within the UK. The Act sets out the protection afforded to wild plants (Schedule 8) and animals (Schedule 5) in the UK, and reviews the species to which it applies every 5 years. The protection can be connected to the actual species, or its habitat (resting or breeding). The Habitats Regulations (See below) also afford listed species additional protection, whilst others such as the Badger, are specifically protected through their own legislation. Sites of Special Scientific Interest (SSSIs) are also notified under the Act. These sites are nationally important and are intended to reflect the best examples of particular features of interest (biodiversity, geodiversity and/or physiographical) across the country. Doncaster Borough boasts 15 sites of Species Scientific Interest.
- 4.15 Adopted in 1992, the Conservation of Natural Habitats and of Wild Fauna and Flora, (commonly known as the Habitats Directive), requires each member state to make legislative and administration provision to enable them to maintain or restore natural habitats and wild species at favourable conservation status, through site and species protection objectives. Of particular interest in Doncaster Borough is the Special Areas of Conservation (SAC) designation under the Habitats Directive. SACs are designated for their importance as natural habitat types and as the habitats supporting international species of importance listed within the Directive. Along with Special Protection Areas (SPAs), which are designated under the Birds Directive, these sites form a European network of designated sites called 'Natura 2000'. In Doncaster parts of both Thorne and Hatfield Moors are designated SAC and SPA and are therefore of international conservation status.



4.16 The Habitats Directive is applied in the UK via the Conservation (Natural Habitats & c.) Regulations (England) 1994 (as amended), commonly shortened to the Habitats Regulations. These build upon the existing provisions of the Wildlife and Countryside Act 1981 (as amended), Town and Country Planning Acts and others, to define and protect 'European sites'. The Regulations require development plans and decisions to contribute to biodiversity conservation through the inclusion and application of policy, conditions and compensatory measures to sustain the Natura 2000 network. Plans or projects, which are likely to have a significant affect on a European site, are required to undergo Appropriate Assessment, and be assessed according to their implications for the site's conservation objectives. Under the Regulations all Planning Authorities must have proper regard to the protection and enhancement of these sites in the formulation of development plans.

The Planning framework

4.17 Planning legislation in respect to biodiversity has been strengthened in light of the legislative framework and the reversal of biodiversity loss is recognised as a national planning priority, which must be embedded within National, Regional and Local Planning Policy.

4.18 Planning Policy Statement 9 – Biodiversity and Geological Conservation further strengthens the importance of habitat; wildlife and geological features in planning policy and development control decisions and embodies the government's commitment to sustainable development. The key principles are summarised below;

- Development plan policies and planning decisions should be based upon up-to-date information about the environmental characteristics of their areas
- Plan policies should aim to maintain, and enhance, restore or add to biodiversity and geological conservation interests
- Plan policies should take a strategic approach to the conservation, enhancement and restoration of biodiversity and geology.
- Plan policies should promote opportunities for the incorporation of beneficial biodiversity and geological features
- The aim of planning decisions should be to prevent harm to biodiversity and geological conservation interests. Where granting planning permission would result insignificant harm to those interests, local planning authorities will need to be satisfied that the development cannot be reasonably located on any alternative sites that would result in less or no harm



4.19 Under the Local Development Framework system, Regional Planning Policies have as much weight as the policies that Doncaster produces itself. The draft Regional Spatial Strategy (December 2005) sets out headline issues and sub-regional priorities relating to the environment and specifically biodiversity. Policy ENV8 pays particular emphasis to the importance of integrated networks of habitats to address fragmentation and biodiversity loss and identifies distinctive priority habitats for the region, some of which occur almost exclusively in Doncaster Borough.



4.20 A combination of legislation, policy, strategy, and good practice surrounding the local planning system, provide mechanisms to protect biodiversity and opportunities for enhancement. The Local Planning Authority requires that appropriate ecological appraisal and biodiversity protection measures are undertaken before major developments take place, and the use of planning conditions, obligations and management agreements in respect to sites, species and habitats are commonplace.

4.21 Doncaster's emerging Local Development Framework (LDF) will replace the Unitary Development Plan (UDP) as the new system that determines the use of land in Doncaster. The LDF contains a number of components, including strategic policies, development control policies and site allocations. The Doncaster Local Biodiversity Action Plan will form a technical appendix to the LDF, providing baseline information on habitats and species and a clear set of biodiversity aims, priorities and targets, which can be applied within all aspects of the planning process. Please refer to the 'Further Information' document for a list of current UDP and RSS policies.

4.22 A suite of complimentary Supplementary Planning Documents (SPDs) is also being produced and should be referred to in conjunction with the LBAP;

- Planning for Trees and Hedgerows on Development Sites in Doncaster
- Planning for Nature on Development Sites in Doncaster
- Landscape Planning on Development Sites in Doncaster
- Sustainable Construction Supplementary Planning Document
- Together with the existing DMBC, Re-survey of Sites of Scientific Interest in the Doncaster Metropolitan Borough 1996/97, Volumes 1-9.

5 Biological Recording in Doncaster Borough

A brief history

- 5.1 Biological records form the pieces of the jigsaw that help us construct an overall picture of the character and health of the environment. They also provide a valuable insight and permanent record of how the environment is evolving, and with a little interpretation, what is influencing the changes. Similarly they are the means by which future biodiversity targets will be defined, indicators identified, and conservation efforts will be measured and monitored.
- 5.2 The history of biological recording in the Doncaster area dates back to the 18th century, when local botanists collected and catalogued species observations on an informal yet often systematic basis. Increasingly organised efforts date back to the 19th century, with the formation of the Doncaster Scientific (now Naturalists') Society in 1880 and work of the Yorkshire Naturalists' Union. The collation of such information formed the basis of what is probably one of the country's earliest biological record centres and herbariums. Over the years the Museum has amassed a great deal of biodiversity literature and biological records, which are now being transferred onto a Biological Recording and Monitoring database, (currently 'RECORDER 2002'). This extensive collection of records range in date from 1744 up to the present day and is constantly being updated. Biological records are gratefully received to support the continuing need to record the local environment and sustain biodiversity conservation. Biological data is routinely provided for a great number of purposes including research, monitoring, planning control and conservation.

Baseline Information– Habitats & Species

- 5.3 The quality of local site and habitat information on which the LBAP is based is generally of a detailed yet site-specific nature. There has been no systematic, field-by-field, survey of the whole of the Borough, (only part of the Borough was covered by a survey of this nature in the early 1980's).
- 5.4 Up-to-date habitat information is most readily available for Sites of Special Scientific Interest (SSSI), Special Areas of Conservation (SAC) and Special Protection Areas (SPA). Designated sites of such standing are subject to management plans, studies and assessments for the species or habitats of conservation concern and annual condition monitoring and reporting is also an important means to assess their conservation status. In addition to routine survey, such sites are more likely to attract local naturalists, and conservation volunteers who provide regular biological records.
- 5.5 The local information held by the Biological Records Centre on Sites of Scientific Interest (SSI) is robust and comprehensive, comprising historical data on most sites and information from the re-survey of all sites undertaken in 1996 and 1997 and most recently in 2004 and 2005.
- 5.6 Habitat and species records are available from the various scientific papers and journals associated with specific sites and societies within the Borough. The expert input and depth of scientific analysis into such is a tremendous asset, as is the historical context provided, although very old texts provide less accurate location data.

5.7 A large amount of detailed information is held by 'active' societies such as the Yorkshire Naturalist's Union (YNU), Doncaster Naturalists' Society, the Yorkshire Wildlife Trust, the Botanical Society of the British Isles and organisations such as Natural England (formerly English Nature). Active societies and trusts often hold regular survey events, which include familiar and 'frontier' sites, in the interests of monitoring and research. English Nature carried out several countywide surveys, particularly in relation to grasslands, heathland and ancient woodland. Similar national and regional audit and inventory data has been inputted into the Museums Biological Records Centre. Work on a Flora of South Yorkshire is currently underway and is an example of the type of analysis which needs to be carried out for all species groups, not just vascular plants



5.8 Individual records, field notebooks, research projects and private collections are also handled by the Museums Biological Records Centre, and contribute greatly towards recording the Boroughs biological heritage. These records are particularly important, as they are often not restricted to statutory sites and include records collected over an extended period.

5.9 One-off studies often relating to the environmental assessment of particular site or areas in relation to development proposals or scoping exercises, also contribute to local knowledge.

5.10 As with all data of this type limitations exist relating to the availability, accuracy and completeness of the information presented, which is often specialist and heavily reliant upon the survey interests and efforts of the voluntary sector. Variation exists between different habitats and species and data can be 'gappy' in coverage, age, detail and our own understanding, and therefore open to misinterpretation. The information does however represent a comprehensive gathering of reliable biodiversity data and an important baseline upon which further efforts in biodiversity conservation should be based. This data enables us to provide the following general overview of the Borough's Biodiversity.

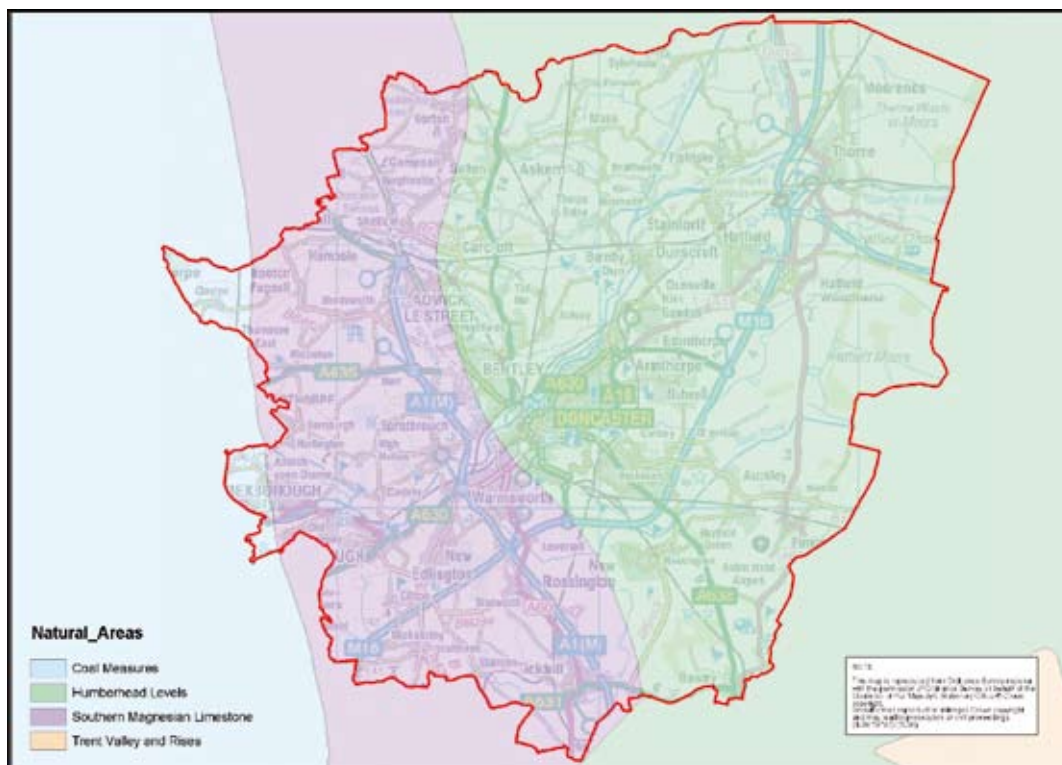
6 The Biodiversity of Doncaster Borough – An Overview

Natural Areas

6.1 In response to 'Biodiversity challenge', English Nature (succeeded by Natural England in 2006) developed the Natural Areas concept. A Natural Area is an area of countryside identified by its unique combination of physical attributes, wildlife, land use and culture. These features give a Natural Area a "sense of place" and a distinctive natural character. The concept is based on the premise that, as wildlife rarely pays regard to administrative boundaries, an alternative sub-division of the countryside is necessary for identifying conservation priorities and co-ordinating action. Natural Areas offer an effective framework for translating national level targets into Local Biodiversity Action Plans and are also recognised in National Planning Policy Guidance.

The following Natural Areas occur in Doncaster Borough:

- The Coal Measures Natural Area (Blue)
- The Southern Magnesian Limestone Natural Area (Purple)
- The Humberhead Levels Natural Area (Green)



Local Biodiversity and Landscape Character

- 6.2 Doncaster borough covers an area of 220 square miles and is made up of characteristic areas defined by differences in rock type, topography, soils, slope and drainage, which in turn have resulted in a great variety of habitats.
- 6.3 The geographic position of Doncaster in the British Isles also introduces an interesting climatic influence, with several species and plant communities at the limit of their climatic range. This means the borough has been known to support interesting flora and fauna. Changing climatic conditions will affect the ability of such wildlife to survive locally, presenting an unpredictable scenario in terms to their conservation requirements and our ability to support them.
- 6.4 Mans historical and cultural legacy has also played an important role in shaping the environment we recognise today. Numerous semi-natural habitats have been created due to man's activities in the borough, including the straightening of the river course, construction of canals and development of the railway network. Industrial activities have also presented new opportunities for habitat creation through natural colonisation, such as at former colliery sites, waste lagoons of the glass-making industry, and the borough's numerous disused quarry workings.
- 6.5 An overview of the characteristic biodiversity of Doncaster borough follows, whilst detailed information on habitat status, distribution and associated species is described within the individual Habitat Action Plans.



Designated Nature Conservation Sites

- 6.6 A great number of sites have been recognised throughout the borough for their biodiversity value, and a series of designations (statutory and non-statutory) have been awarded to acknowledge their importance and offer varying degrees of protection through a variety of different controls.
- 6.7 Doncaster Borough boasts a variety of Statutory Nature Conservation sites. At the highest level, Special Areas of Conservation (SACs) and Special Protection Areas (SPAs) are designated to provide a network of protected sites, holding important wildlife and geological features that are threatened or rare in a European context. Within Doncaster Borough a large proportion of Thorne Moors is designated SAC, due to its existing and regenerating lowland raised mire habitat, and both Thorne and Hatfield Moors are designated SPA, as they support a significant proportion of the UK Nightjar population. Natural England, the Government agency that champions the conservation of wildlife and natural features throughout England, has also designated the Humberhead Peatlands area a National Nature Reserve. Such sites protect the best examples of wildlife and geology, but also provide access, education and enable scientific research within the reserves.
- 6.8 Similarly, at a national level, Sites of Special Scientific Interest (SSSIs) represent Britain's finest sites for fauna, flora, geology and physiographical features. Some of our nationally important SSSI sites are also designated SPAs or SACs. SACs, SPAs and SSSIs are all protected by legislation, thus ensuring the continuity of these irreplaceable features of our heritage. These sites are also protected by policies within the Local Development Framework.

6.9 In Doncaster there are 15 SSSIs (as listed below), each supporting what is considered to be one of the finest examples of their respective habitats and geological features;

- Ashfield Brick Pits - A geological SSSI
- Bilham Sand Pit - A geological SSSI
- Cadeby Quarry - A geological SSSI
- Denaby Ings - A diverse wetland site of riverside water meadows and marshes
- Edlington Wood - A diverse ancient woodland on limestone geology
- New Edlington Brickpit - A geological SSSI
- Hatfield Moors - Lowland raised peat bog
- Owston Hay Meadows - Species-rich hay meadows
- Potteric Carr - A diverse wetland site and mosaic of open water, reed beds, wet grassland, wet woodland and carr
- River Idle Washlands - A washland grassland site
- Sandall Beat Wood - A mosaic of deciduous woodland, fenland and heathland habitats
- Shirley Pool - A mosaic of open water, reed swamp, fen and wet grassland
- Sprotbrough Gorge - A mosaic of woodland, grassland, and wetland, with fragments of ancient calcareous woodland.
- Thorne Moors - Extensive lowland raised peat bog
- Went Ings Hay Meadows - Species-rich hay meadows.

6.10 Doncaster also boasts four Local Nature Reserves, which are publicly accessible reserves of local/regional wildlife value where enjoyment by the public is actively promoted. These reserves, which are council owned and maintained, include Hatchell Wood, Northcliffe Quarry, Sandall Beat Wood and Old Denaby Wetlands



6.11 Non-Statutory Nature Conservation Sites, known in Doncaster as Sites of Scientific Interest (SSIs), are regionally and locally important nature conservation sites designated through the planning process. Doncaster borough has approximately 350 sites, which cover approximately 10,500 acres or 4250 ha and present important opportunities for interaction with the natural environment.

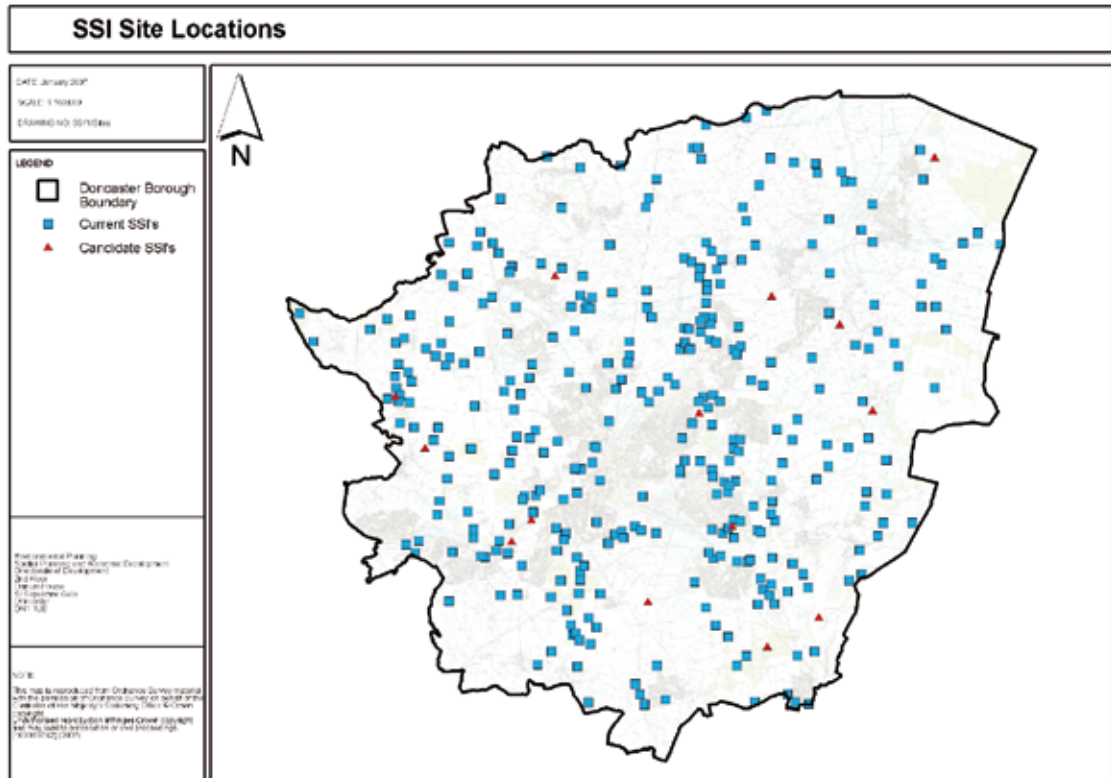
Table 1 – Doncaster’s SSIs categorised by habitat type.

Major Habitat Type	Number of Occurances
Woodland	172
Grassland	98
Mixed Habitats & Structural Mosaics	76
Scrub	64
Standing Water	65
Flowing Water	32
Parkland	27
Hedgerows	21
Fens & Mires	17
Artificial Habitats	9
Heathland	3
Total Occurances	584

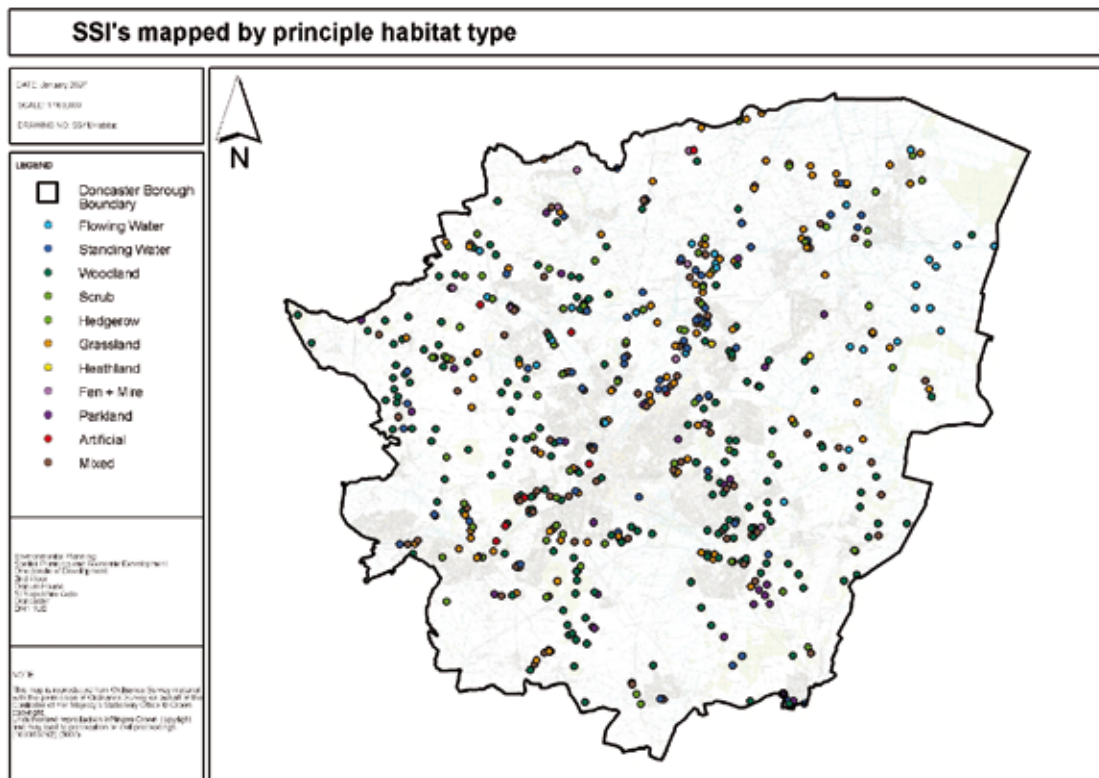


6.12 Doncaster's 350 Sites of Scientific Interest represent a substantial nature conservation resource and were most recently surveyed in 2004/2005. The local site selection criteria are currently being reviewed in accordance with guidance produced by the Department for Environment, Food and Rural Affairs (Defra), following which each site will be reappraised, to assess its conservation value. The review process will further enrich our knowledge of the Borough's biodiversity and that of specific local sites, by highlighting their individual characteristics and features of substantive nature conservation importance and guiding their appropriate management.

The Map below shows the distribution of Sites of Scientific Interest (SSIs) in Doncaster Borough



The Map below shows the distribution of SSIs, categorised by principal habitat type, in Doncaster Borough



6.13 All of such sites support biodiversity considered to be best protected through a spatial designation, however the wildlife resource that falls or migrates beyond site boundaries is immense and in many respects less understood.

Magnesian Limestone Areas

- 6.14 The west of the borough lies over part of a narrow band of Magnesian Limestone, upon which are a number of species-rich limestone woodlands. Several of the larger woodlands are Sites of Special Scientific Interest (SSSIs), whilst many of the smaller limestone woodlands are Sites of Scientific Interest (SSIs) and are managed as cover for game birds.
- 6.15 This area also supports excellent examples of limestone grasslands such as the lawns of Brodsworth Hall, Marr Hills and Holes, Levitt Hagg, Cadeby Rattles and the many quarries around Sprotbrough. The northwestern area of the borough also includes a large number of estates, which have associated woodland shelterbelts, parkland, wood pasture and veteran trees. On the eastern fringe of the limestone is the haven of spring flowers of Owston hay meadows and the diverse ancient and species rich hedgerows around Owston Hall.
- 6.16 There are few wetland sites in this part of the borough due to the underlying geology, however, from the limestone flow streams such as Hampole Dike and The Skell, with their associated willow and alder woodlands.
- 6.17 The River Don cuts through the Magnesian Limestone between Conisbrough and Cadeby, with extensive areas of wetland and marsh found south of the river at Old Denaby. Subsidence flashes along the River Dearne such as Denaby Ings SSSI have also been created by mining subsidence.
- 6.18 South of the Don, the narrow band of Magnesian limestone underlies much of the western half of the borough from Conisbrough in the west to Tickhill in the east. This landscape is dominated by arable agriculture interspersed with limestone quarries, disused railways and large, ancient woodland sites. The hedgerows of this area are particularly diverse and excellent examples are found around Wadworth and Tickhill.



The Sandy silts and clays (part of the Humberhead Levels)

- 6.19 To the east of the Magnesian Limestone the soils are a mixture of sands, silts and clays with occasional pockets of fen peat. To the north of Doncaster, the landscape is dominated by arable agriculture with scattered species-rich woodlands. The pockets of peaty soils add to the diversity of habitats and species. Wetlands are much more common in this part of the borough and several are man-made, such as by the extraction of clay for brick making.
- 6.20 Tilts Drain or 'the Old Ea Beck' runs eastwards through the centre of this area and a series of linear wetlands or borrow-pits are associated with this watercourse. The River Went forms the northern boundary of the borough and has several areas of associated permanent grasslands on the alluvial soils near Fenwick, Topham and Eskholme. Further east the New Junction Canal cuts across a flat landscape of mixed agriculture with scattered remaining areas of species-rich permanent pasture, divided by diverse hedgerows with large white willows and small field ponds. These habitats are under threat from agricultural intensification and a general lowering of water levels. Woodland is a rare habitat in this part of the borough although one fragment of an ancient woodland remains at Bunfold Shaw near Sykehouse.

6.21



To the south of the town lie the remaining flat, low-lying pastures of Doncaster Carr and the Potteric Carr nature reserve. Semi-natural peaty-fen and woodland habitats exist on these damper soils. The River Torne flows on through sandier soils, eastwards from Rossington Bridge to the peaty soils of Hatfield Chase.

The River Don Flood Plain (part of the Humberhead Levels)

- 6.22 From the narrow wooded valley through the Magnesian Limestone, the alluvial flood plain of the River Don opens out into the wide expanse of Sprotbrough Ings. Passing through Doncaster, much of the low-lying flood plain has been developed as part of the suburbs of Bentley, however, there are several wetland habitats remaining near the river.
- 6.23 From the town centre the alluvial flood plain fans out to cover a large area of land to the northeast. This area is characterised by low-lying pastures and diverse hedgerows. Arable agriculture is encroaching on many areas of former pasture and hedgerow removal is a significant threat. Several watercourses, the old Bentley flood bank, and a railway, cross this area. Many areas beside the river are periodically inundated during winter and are important areas for many bird species.
- 6.24 The river has been straightened and canalised in many parts and a 'new' channel for the river water runs north of, and parallel to, the canal. Designated washlands on the northern side of the river include many small ponds and borrow-pits. The former course of the River Don is still traceable through Wheatley in the form of a series of oxbows south of the canal. Only one section of the oxbow retains the mature alder and crack willows of the former river and several sections of river have been filled-in as part of industrial expansion.
- 6.25 The Dun Navigation canal and river Don pass north of St Oswalds Church, Kirk Sandall, where a series of calcareous slurry lagoons on the northern side of the river provide a unique and unusual habitat for specialist plant and animal species. Barnby Dun has a large number of diverse wetland habitats such as the old river course, flooded fields and ponds beside the canal, and borrow-pits created during embankment of the new river channel. The canal splits into two near Kirk Bramwith; the New Junction Canal passes over the Don via an aqueduct and continues north, to join the Aire and Calder Navigation, while the Stainforth and Keadby Canal branches off to the east towards the River Trent.
- 6.26 The river flows between Stainforth and Fishlake, where there are extensive wet-grasslands and ponds, before flowing northwards at Thorne. To the south of the Stainforth and Keadby Canal is the historic site of Thorne Mere and the Ashfield Bank.
- 6.27 The river course, washlands, wet-grassland, canal and ponds along the river corridor are notable for their diverse aquatic and wet-grassland species and have great significance as sites for many bird and dragonfly species. This area is also a stronghold for the water vole, a species declining in number.

The Sherwood Sandstone (of the Humberhead Levels)

- 6.28 Between the town centre and the southeastern boundary of the borough, much of the soils are dry sands and gravels over sandstone. The town racecourse and old Doncaster Airport (now the site of The Dome leisure complex) are on the former Doncaster Common. Remnants of the natural heath vegetation survive amongst the fairways and amidst the landscaping of The Dome. Further east is the heathland of Doncaster Warren Golf Course and associated woodlands to either side of the M18 Motorway, and parts of Park Wood, Rossington, which have elements of the heathland species.
- 6.29 In this area there are fewer of the large parkland estates common in the west of the borough, although there are occasional small private estates. Rossington Hall to the south of Rossington is slightly unusual on these dry soils in that it has a series of small, stream-fed lakes. These lakes have suffered from severely lowered water levels in the mid 1990's.
- 6.30 The habitats to the east of Armthorpe include a number of woodlands, which exhibit a range of heath vegetation and ponds in small pockets of clayey soils. The sandy soils around Edenthorpe and Kirk Sandall give names to several habitats such as Brecks Plantation, Brecks Common and Brecks Pond. The natural lowland heath vegetation is lacking in many areas although small pockets such as heather at Station Wood, Barnby Dun, and at Hatfield Lings sand quarry, and gorse near The Grove, Kirk Sandall, remain.
- 6.31 There are a number of woodland's, which are mixtures of plantation pine and semi-natural understorey species with most of the private woodlands being used as game coverts. King's Wood is slightly unusual in that it is deciduous woodland with mature coppiced sweet chestnut, whilst Hurst Plantation has recently become actively worked for sand and gravel. The large former Forestry Commission conifer plantation at Bawtry Forest is on very sandy soils and has two small ponds. One pond has largely dried out but still retains remnants of former heathland flora around the edges.
- 6.32 The mineral resources of this area are being actively worked in the Finningley and Blaxton areas and there are many old sand and gravel workings, some of which have flooded, and others, which have recolonised with naturally occurring heathland plants.

Humberhead Level Peatlands

- 6.33 To the east of the sandy and alluvial soils in the north eastern corner of the borough are two unique areas of lowland raised mire, Thorne and Hatfield Moors which are both SSSI's. These two peatland areas differ in their underlying geology, which is reflected in the species found on each. Much of Hatfield Moors is either under arable agriculture or is being extracted for peat, although some areas still have a cover of semi-natural vegetation. The area of Hatfield Moors known as Lindholme Island is on the gravel soils of a glacial moraine. This area contains a zone of heathy grassland and venerable, old oak and pine trees.
- 6.34 Between the two moors and to the east and south of Hatfield Moor is the low-lying landscape of Hatfield Chase. This area was, in ancient times, a vast area of fen mire, lakes and rivers. Drainage since the Roman times has created rich arable farmland cut by a complex network of drainage ditches. These drains also preserve what is left of the original wetland plants and animals, with drainage ditches containing several locally and regionally rare wetland plants, whilst water voles are found in several of the drains around the south of Hatfield Moors.
- 6.35 Woodlands are scarce and limited to the fringes of the moors. One of the few woodlands that does exist is Whin Covert, a Yorkshire Wildlife Trust nature reserve of birch wood and bracken on the soft peaty soil.



7 Developing Doncaster's Local Biodiversity Action Plan

Primary Conservation Aims

7.1 In accordance with the UK BAP, the Partnership's primary aims for biodiversity conservation are:

- to maintain and enhance the populations and natural ranges of species and the quality and extent of wildlife habitats and ecosystems.
- to conserve internationally, nationally and regionally important species, habitats and ecosystems and to enhance their conservation status where possible.
- to conserve species, habitats, and natural and managed ecosystems that are locally characteristic and to enhance their conservation status where possible.
- to maintain the genetic variation within species and hence habitats and ecosystems.
- to contribute to the conservation of biodiversity on a local, national, European and global scale.
- to ensure that current policies and practices which affect the environment do not damage global biodiversity, but instead contribute towards conserving and enhancing it.

Key Conservation Objectives

7.2 To achieve these aims the Partnership has developed Doncaster's Local Biodiversity Action Plan to deliver the following broad objectives;

- To develop and consolidate a sound biological knowledge base.
- To consistently translate national biodiversity targets into effective action at the local level.
- To examine local biodiversity status and issues, and identify conservation targets for locally important habitats and species.
- To develop sustainable local partnerships to help deliver programmes for biodiversity conservation, education and environmental stewardship.
- To increase public awareness of, and participation in, conserving biodiversity locally.
- To ensure that opportunities for biodiversity conservation and enhancement are identified and fully considered via all statutory and local processes and initiatives.
- To provide a basis for measuring and monitoring progress in biodiversity conservation at a local level, and contributing to national efforts.



The Partnership's approach

7.3 The objectives underpinning the LBAP have been identified and incorporated into the Local Biodiversity Action Planning process, based upon the following approach.

Conservation Targets

7.4 The conservation targets identified within the individual Habitat Action Plans are a synthesis of national and local priorities and objectives, and in the future will be subject to their respective target reviews. Where national targets do not exist, local targets have been proposed. The Partnership has endeavoured to formulate SMART targets, that is those that are; Specific, Measurable, Achievable, Relevant and Timely, to facilitate the subsequent implementation, monitoring, co-ordination and reporting of the LBAP. The current targets tie in to the UK BAPs 2010 timeframe.

Implementation

7.5 Doncaster LBAP's conservation objectives are based upon a series of protection, restoration and enhancement, re-creation and public stewardship measures. The fundamental means of conserving habitats and species is through the protection of existing biodiversity, often on a site basis, and the implementation of appropriate management to maintain the feature of interest in a favourable condition. Site, species and habitat protection is heavily reliant upon a supporting legislation and policy base, and agreed protocols and management practices. Restoration and enhancement measures are often applied to degraded habitats, to re-address their condition and wildlife value, whilst re-creation, where possible, seeks to expand the habitat resource. Suitable site conditions and other necessary variables, mean that habitat re-creation opportunities can be few and far between, therefore every prospect should be thoroughly explored. Each measure offers opportunities for environmental education and public participation.

7.6 The implementation of the Local Biodiversity Action Plan requires commitment from all partners. Throughout the development of the LBAP partners have been consulted on the proposed objectives, targets and actions, and those organisations best placed to co-ordinate individual aspects of the Plan's delivery have been indicated. The LBAP's delivery is a Partnership undertaking and partners will not be held responsible if the proposed targets are not met. Furthermore aspects of Plan delivery will be reliant upon the development of relationships and agreements with private stakeholders, businesses and funding providers, which often cannot be guaranteed, or tied into the timeframes proposed by the LBAP.

Monitoring and Reporting

- 7.7 A wide range of habitat and species data is held on the Borough's biodiversity and the continued collection and analysis of biological records is essential to enable comparative monitoring and ensure that losses are halted and reversed. The LBAP highlights the existence of gaps in available data and highlights the need for further survey work to rectify this situation, and to monitor natural trends and the impact of conservation activities. Encouraging local people to share their knowledge and observations on a particular area's wildlife, or of a specific habitat or species, is especially important in achieving this understanding. Doncaster Museum's Biological Record Centre has and will continue to collate such information, to facilitate formal monitoring and reporting on the LBAP. Furthermore, biological records can now be mapped using a Geographic Information System (GIS), to allow species and habitat distribution to be seen and analysed.
- 7.8 The proposed targets within the LBAP are on the whole quantitative and are presented in a way, which ensures that they are compatible with the Biodiversity Action Reporting System (BARS). This is a web based database system that supports both national and local BAPs with their planning, monitoring and reporting requirements, allowing all partners to enter details of their Action Plans and record the progress of targets in a standardised way. This information can then be used in a number of ways, including allowing the public to learn about initiatives in their area, and by the LBAP members who can collate, monitor and update data and therefore report on how biodiversity efforts are progressing.
- 7.9 The continuous monitoring of biological data and its review in light of natural trends, other threats and conservation activities, is essential to assess an ever changing and potentially precarious situation. Such analysis can be used to ensure that the targets, objectives and actions that are proposed remain appropriate, and can also be used to focus efforts when required and celebrate successes.

The LBAP Format

- 7.10 Doncaster's Local Biodiversity Action Plan is made up of a series of linked documents. As a complete set, the LBAP will provide a comprehensive insight into all aspects of Doncaster's biodiversity and its conservation, although specific components can also be referred to as stand-alone documents. The LBAP is also an evolving document and will be used for a variety of purposes including; a planning and conservation tool, and an educational resource, and by a wide range of users including the local authority, other agencies, businesses, local interest groups and the public.
- 7.11 The main components of Doncaster Local Biodiversity Action Plan are;
- This document 'Doncaster Local Biodiversity Action Plan – An Introduction & Overview'
 - 18 'Habitat Action Plans' (HAPs)
 - 3 'Habitat Statements'; Woodland, Wetland and Grassland. These are intended to provide a general habitat overview, whilst the HAPs address specific habitat types.
 - 18 'Summary Habitat Action Plans'. These provide a non-technical summary of the Habitat Action Plans.
 - 'A Species Audit of Doncaster Borough'. This document lists those species identified by the Partnership as being of conservation concern or local biodiversity interest.
 - 'The Distribution of Rare and Scarce Plants in Doncaster Boroug: A Preliminary Atlas'. This audit displays information on rare and scarce plants.
 - 'Species Action Plans' (SAPs) will also be developed in the future, based upon the above audit documents.
 - A 'Further Information' document which contains useful data associated with the LBAP document and process.



The Audits

7.12 Doncaster's Local Biodiversity Action Plan has emerged from an audit and review of biological data, which has been used to provide an insight into the local biodiversity resource. The data source that was drawn upon included national species and habitat listings (UK Species of Conservation Concern and BAP priorities), regional biodiversity audits, and the data held by Doncaster Museum's Biological Records centre. The audit process has been fundamental in informing the LBAP, but has also highlighted gaps in the baseline information used, associated with;

- Incomplete survey coverage (geographically) with local hotspots,
- Incomplete survey coverage in record dates and age ranges,
- Incomplete data sets
- Inconsistency between groups i.e. interest and ease in recording particular species, for example between birds and insects.

7.13 The Audit '**A Species Audit of Doncaster Borough**' displays collated data and commentary for a series of species, which have been identified as being of conservation concern or are of particular local biodiversity interest. The Audit is an important component of the LBAP and will be subject to continuous review. It will be used:

- As the basis for future work on the development of Species Action Plans (SAPs), i.e. how best to address species' conservation needs
- To provide a means to identify and prioritise future survey efforts and SAP production (both by the Partnership and identified through survey protocol related to statutory and partner functions)
- To provide a benchmark against which conservation efforts for particular species can be monitored
- Help to raise awareness of the biological information held and hopefully to encourage a greater degree of data sharing.

7.14 Species were identified for inclusion on the Audit using a series of selection criteria to produce a 'long list' of priority species.



Criteria for Species selection

7.15 The following criteria were applied based upon baseline national, regional and local information and identified priorities.

National Criteria

- Species identified by the UK Biodiversity Action Plan as a Priority Species or a Species of Conservation Concern
- Species that have been issued with a status indicating conservation concern (such as Red Data Book or similar authoritative listing). Where the original lists are extensive, species identified in the lower threat categories e.g. Least Concern, have not been included
- Species listed on an appendix or schedule to European or National wildlife legislation.

Regional Criteria

- Species listed in the Yorkshire & Humber Biodiversity Audits
- English Nature Natural Area Priority Species.

Local Criteria

- Species considered to be locally endemic for which reliable records exist.
- Locally identified BAP indicators – As listed by Defra and based upon the England Biodiversity Strategy
- Species considered to be locally rare, distinctive, unusual or of value, as identified by DBAP and consultees during the LBAPs production

7.16 The species selected for inclusion in the Audit, have been issued with a 1 point score for each criteria met. This method generated a very basic means to rank-order the 'long list' of species. The resultant priority ranking does not reflect importance and is intended to be used as a flexible conservation tool.

7.17 A further potential point or half point was then awarded to species, based upon a basic assessment of the age of the record. This basic weighting was introduced to the scoring process to take account of those species for which only historical records had been sourced, given that this could not conclusively rule out the current occurrence of a particular species. The following date ranges were agreed, based upon milestones or periods of data influx to the Museum's Biological Records Centre:

Date range	Score
Pre 1980	0
1980 – 1993	½
1994 – present day	1



7.18 The Species Audit is currently compiled of 475 species, which are grouped as follows:

Amphibians	Crustaceans and Molluscs
Birds	Fish
Fungi	Invertebrates
Mammals	Reptiles
Vascular Plants	Mosses, Lichens, Stoneworts

7.19 A 'Holding list' has also been compiled to hold species, which would meet the criteria, but the nature of the local record suggests a more questionable status, i.e. it may be a single historical record, one that falls just outside the borough, or perhaps could be a misidentification. These records have not been disregarded entirely, but require further confirmation to verify their local status.

- 7.20 The purpose of the Audit is to guide conservation in the following ways;
- Species conservation will be delivered through the implementation of associated Habitat Action Plans, on the assumption that habitat conservation measures will benefit species
 - Species conservation will be delivered through the production and implementation of an individual Species Action Plan
 - Species conservation will be delivered through the production and implementation of a 'Group' Species Action Plan, e.g. farmland birds
 - Further survey work will be targeted.
 - No further action is required/ can be effectively implemented to conserve the species, other than ongoing monitoring.

7.21 **'The Distribution of Rare and Scarce Plants in the Doncaster Borough: A Preliminary Atlas'** has also been produced and forms the basis of our understanding of the history, status and distribution of vascular plants in Doncaster Borough. The Atlas replicates the vascular plant list identified within the Audit and also includes a distribution map and accompanying data, to enable field botanists to check for the continued existence of these key species.

Table 2 – Key contributors to the Species Audits

Species	Contributor Name	Contributor Organisation
All Audit Species	Various	Members of Doncaster Biodiversity Action Partnership
Lower Plants (mosses)	Tom Blockeel	YNU Recorder (Bryological)
Lower Plants (mosses)	Colin Wall	Doncaster Naturalists' Society
Fungi	Chris Yeates	YNU Recorder (Mycological)
Fish	Colin Howes	DMBC, Doncaster Naturalists' Society & YNU member
Fish	Colin Hannah	Environment Agency
Mammals	Colin Howes	DMBC, Doncaster Naturalists' Society & YNU Recorder (Mammals)
Amphibians	Colin Howes	DMBC, Doncaster Naturalists' Society & YNU Recorder (Herptiles)
Reptiles	Colin Howes	DMBC, Doncaster Naturalists' Society & YNU Recorder (Herptiles)
Birds	Dave Hazzard	DDOS (Doncaster & District Ornithological Society)
Birds	Sue Clifton	RSPB - Doncaster Branch
Birds	Colin Howes	DMBC, Doncaster Naturalists' Society & YNU member
Crustaceans & Molluscs	Colin Howes	DMBC, Doncaster Naturalists' Society & YNU member
Crustaceans & Molluscs	Pip Seccombe	Doncaster Naturalists' Society
Vascular Plants	Geoffrey Wilmore	YNU Recorder (Vascular plants)

Table 2 – Key contributors to the Species Audits (continued)

Species	Contributor Name	Contributor Organisation
Vascular Plants	Colin Howes	DMBC, Doncaster Naturalists' Society & YNU member
Vascular Plants	Louise Hill	Doncaster Naturalists' Society
Vascular Plants	Pip Seccombe	Doncaster Naturalists' Society
Vascular Plants	Robert Marsh	Doncaster Naturalists' Society & YNU Recorder (Coleoptera)
Invertebrates (beetles)	Robert Marsh	Doncaster Naturalists' Society & YNU Recorder (Coleoptera)
Invertebrates (ants, bees and wasps)	Dr Michael Archer	YNU Recorder (Aculeata)
Invertebrates (butterflies)	Rev. Martin Greenland	Doncaster Naturalists' Society
Invertebrates/ lower plants	Robert Goodison	Defra - Regional Biodiversity Coordinator
Invertebrates (butterflies)	Roy Bedford	YNU Recorder (Butterfly Recording Co-ordinator)



Criteria for Habitat selection

7.22 Habitats are defined by the assemblage of plants and animals that are found together, along with the geology and soils they occur on, and the climate of the area. Doncaster LBAP has applied the following criteria in the selection of its priority habitats;

- Any UK BAP priority habitat that occurs in Doncaster Borough
- Any semi-natural habitat that occurs in Doncaster Borough
- Any habitat that is characteristic or locally distinctive of Doncaster Borough

7.23 The issues affecting biodiversity in Doncaster often have a direct impact on the habitats of the Borough, which in turn affects the species associated with those habitats. The Partnership's approach to the selection of priority habitats was therefore intentionally comprehensive, in order to provide a better understanding of how local habitats have evolved, their distribution, factors affecting them and the importance of appropriate management. For this reason the habitats are grouped in some instances and do not replicate national and regional habitat categories. The categories instead represent how the habitats tend to occur in the Borough, often reflecting their transitional nature in relation to one another, the conservation issues affecting them and supporting a more holistic approach to conservation action and management. The habitat groups for which Habitat Action Plans have been produced are summarised over the following pages and dealt with in detail in the Habitat Action Plans.



The Action Plans

7.24 Each Action Plan within the LBAP follows a similar format, which includes; An Introduction and/or description, followed by details of national status, local status, legal status, links to associated habitats and species, current factors causing loss or decline, current local action, objectives, targets and proposed actions. The Habitat Action Plans also provide listings of sites, which support and are particularly representative of the specific habitat locally and distribution maps, which broadly indicate habitat coverage within the Borough. Species highlighted in bold within the Habitat Action Plans are also identified within Doncaster's Species Audit and are conservation priorities.

Habitat Action Plans

7.25 Nationally 45 habitats have been identified as priorities for conservation, and 33 habitats have been highlighted as having regional importance. Habitat Action Plans have been developed locally, which attempt to cover all habitats present in the Doncaster Borough and where appropriate link them to regional or national level plans.

A list of the 18 Habitat Action Plans produced for Doncaster can be seen in Table 3.

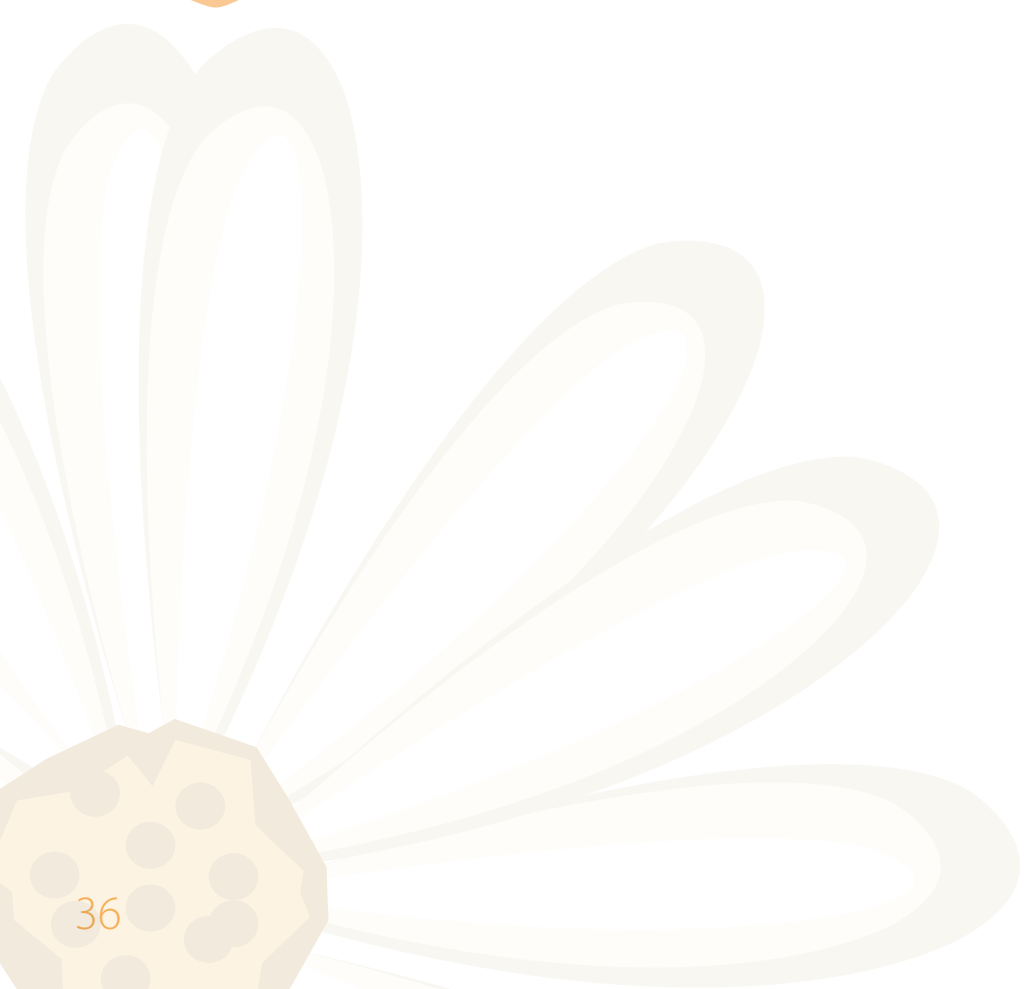


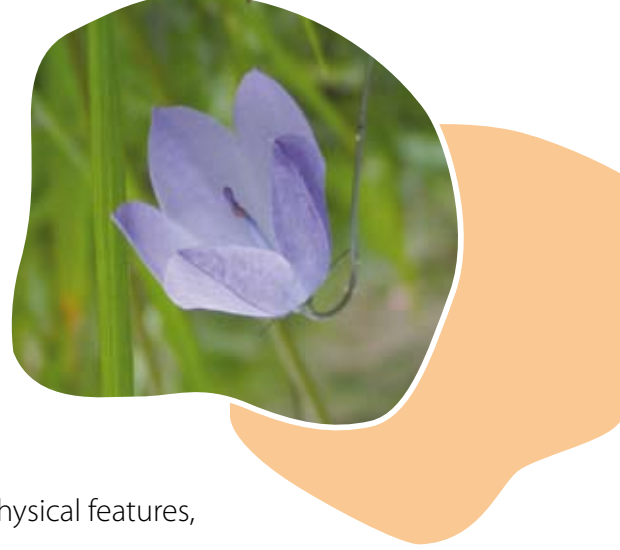
Table 3 – Doncaster’s HAPs and their relationship with regional and national habitat priorities

Doncaster Habitat Action Plan	Regionally Important Habitat	National – Priority Habitat	National – Broad Habitat
Ancient and Species Rich Hedgerows	Ancient and/or Species-Rich Hedgerows	Ancient and/or species-rich hedgerows	Boundary and linear features
Arable Field Margins	Cereal Field Margins	Cereal field margins	Arable and horticulture
			Boundary and linear features
Crags, Caves and Tunnels	Inland Caves		Inland rock
Limestone Grassland	Magnesian Limestone Grassland	Lowland calcareous grassland	Calcareous grassland
Lowland Heathland / Acid Grassland Mosaic	Lowland Acid Grassland	Lowland dry acid grassland	Acid grasslands
		Lowland heathland	
Neutral and Wet Grasslands	Lowland meadows	Lowland meadows	Improved grassland
			Neutral grassland
Greenways			Boundary and linear features
			Built up areas and gardens
			Urban
Lowland Raised Mire	Lowland Raised Bog	Lowland raised bog	Bogs
Parkland, Wood Pasture and Veteran Trees		Lowland wood-pasture and parkland	
Post Industrial and Brownfield Land	Saline Lagoons		Built up areas and gardens
			Urban

Table 3 – Doncaster’s HAPs and their relationship with regional and national habitat priorities (continued)

Doncaster Habitat Action Plan	Regionally Important Habitat	National – Priority Habitat	National – Broad Habitat
Urban Greenspace			Built up areas and gardens Urban
Marshes and Swamps, Lakes and Ponds, Ditches and Drains		Aquifer fed naturally fluctuating water bodies	Fen, marsh and swamp
		Eutrophic standing waters	Standing open water and canals
		Coastal and floodplain grazing marsh	
		Mesotrophic lakes	
Minor Streams, Springs, Fens, Flushes, Mires and Fenny Fields		Fens	Fen, marsh and swamp
			Rivers and streams
Reedbeds	Reedbeds	Reedbeds	Fen, marsh and swamp
			Rivers and streams
			Standing open water and canals
Rivers, Canals, Oxbows, Major Streams and Subsidence Flushes		Coastal and floodplain grazing marsh	Rivers and streams
			Standing open water and canals
Limestone Woodlands			Broadleaved, mixed and yew woodland
Lowland Heathy Oak Woodland			Broadleaved, mixed and yew woodland
Wet Woodland	Wet Woodland	Wet woodland	Broadleaved, mixed and yew woodland

7.26 Each Habitat Action Plan includes an Indicative Habitat distribution & Opportunities map, which uses available data to show where in the Doncaster borough each habitat does, or potentially could exist. The Partnership adopted two mapping methods to indicate this, due to inconsistency in the type and availability of habitat data and sourced information from a various partners:



Method A: The mapping of defined physical features, e.g. watercourses

Method B: Thematic mapping of grid squares to reflect strength-of-match to a particular habitat type, based upon the known co-existence of locally selected indicator species.

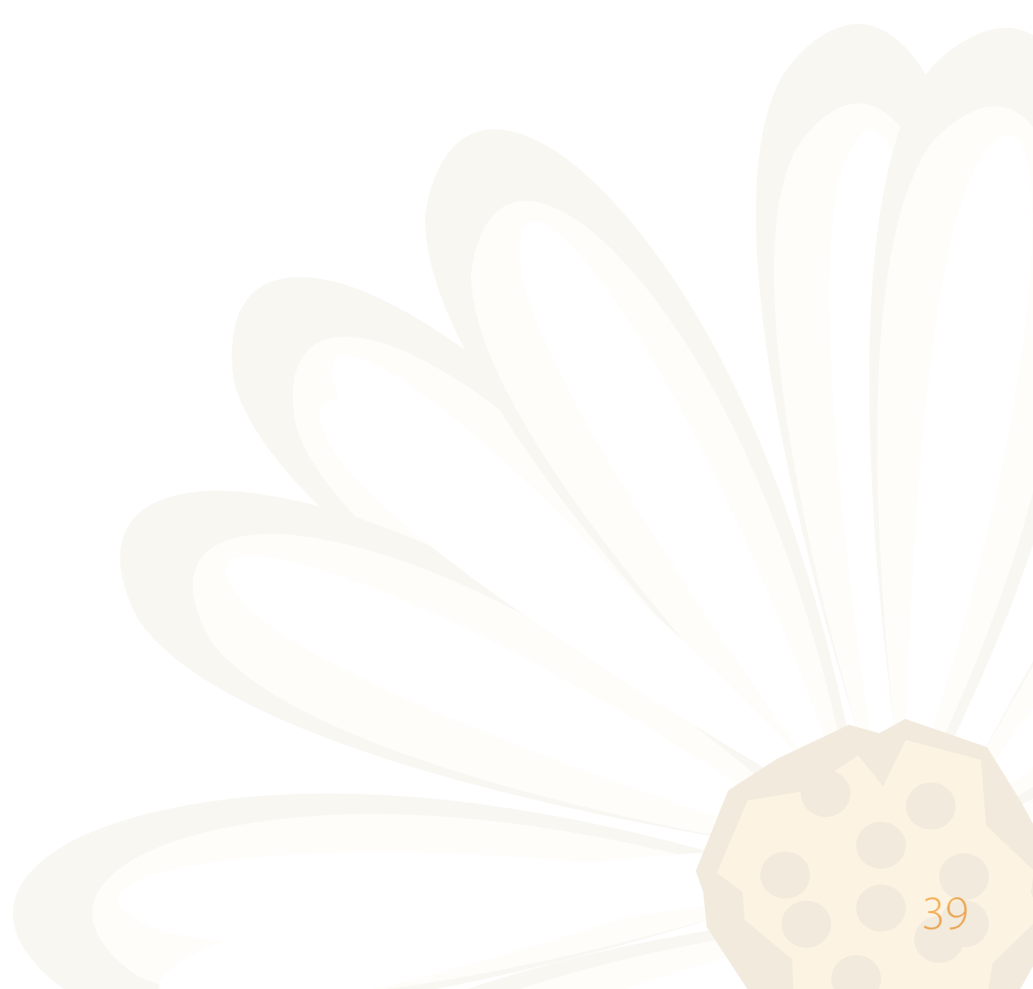
7.27 The maps produced using Method B, therefore provide an indicative distribution using grid squares and not specific occurrences, however they can also be used to infer the suitability of a particular area to support habitat re-creation initiatives, based upon the strength-of-match of the species assemblage.

7.28 As well as the Habitat Action Plans, Habitat Statements have been produced which provide a descriptive overview of the broader habitat types:

Grasslands

Water and Wetlands

Woodlands and Scrub



7.29 Non-technical Summary Habitat Action Plans have also been produced for each of the 18 habitats. These sum-up the information in the HAPs in more simplistic terms, focusing on key points and a sample of the proposed conservation actions.

The table below indicates the principal contributors and consultees involved in the development of Doncaster’s Habitat Action Plans.

Table 4 – Habitat Action Plan Contributors and Consultees

Habitat Action Plan	Contributors & Consultee’s
Ancient and Species Rich Hedgerows (ASH)	<p>DMBC Officers, specifically; Melissa Massarella, Helen McCluskie, Donna Halliday, Robert Marsh, Martin Nowacki – (Ecology/Biodiversity) Paul Beetham, Tim Bryant, Jon Tesh – (Trees & Woodland) Chris Tinker – (Landscape) Steve Butler, Bill Cooper - (Environmental Planning), June Rothwell, Gemma Gregory (former Greenspace Strategy Team), Colin Howes – (Biological Records - Doncaster Museum and Art Gallery), MRB Ecology and David Tyldesley & Associates (DMBC Consultant ecologists), Arthur Doyle (Minerals & Waste Planning) Andy Carnell (Public Rights of Way), Dennis Roe, Jim MacGivern, Chris Allott, Chris Stothard (Countryside Rangers), Nikki Pearson (Community Woodland Rangers), Rachael Cranch (Don Gorge Strategic Partnership) NCCS Area and Neighbourhood Managers</p> <p>other data suppliers; Robert King (Defra-RDS, now part of Natural England) Sue Clifton (RSPB Doncaster), Amanda Best & Jo Mosley (Environment Agency) Doncaster Biodiversity Action Partnership Members, specifically; Louise Hill, Pip Seccombe, Rachel Hoskin, Helen Kirk, Tim Kohler, Steve Judge, Cliff Hampson, Chris Firth, Maurice Whitta, John Siddall, and Colin Howes.</p>
Arable Field Margins (AFM)	
Craggs, Caves and Tunnels (CCT) Greenways (GW)	
Limestone Grassland (LG)	
Limestone Woodland (LW)	
Lowland Heathland / Acid	
Grassland Mosaic (HAG)	
Lowland Heathy Oak Woodland (LHW)	
Lowland Raised Mire (LRM)	
Marshes and Swamps, Lakes and Ponds, Ditches and Drains (MLD)	
Minor Streams, Springs, Fens, Flushes, Mires and Fenny Fields (SFM)	
Neutral and Wet Grassland (NWG)	
Parkland, Wood Pasture and Veteran Trees (PWV)	
Post Industrial and Brownfield Land (PIB)	
Reedbeds (RB)	
Rivers, Canals, Oxbows, Major Streams and Subsidence Flashes (RCF)	
Urban Greenspace (UG)	
Wet Woodland (WW)	

7.30 The table below summarises the principal partners/ key players identified in the LBAPs implementation. This list is not exhaustive and cannot indicate all partners that it is hoped will participate in the LBAPs delivery, instead it identifies the main driver's who have the appropriate expertise to instigate and support action. Biodiversity conservation needs to involve everybody, including local businesses, interest groups, educational establishments, organisations, private landowners, the public sector, and the general public.

Table 5 – Habitat Action Plan Lead Partners

Doncaster's Habitat Action Plans	UK BAP Lead Partner/s	Doncaster's Lead Partners
Ancient and Species Rich Hedgerows	Defra	DMBC, FWAG, YWT, NE, DNS, IDBs, BTCV
Arable Field Margins	Defra	FWAG, DMBC, NE, YWT, DNS, RSPB, LEAF
Crags, Caves and Tunnels		DGSP, DMBC, YW, BW, DGBG, DNS, NE, Rail operators, Quarry operators, ARCUS
Greenways		DMBC, SY Police, DNS, FWAG, NE, YWT, RA
Limestone Grassland	Natural England	DMBC, YWT, DGSP, FWAG, NE, HA, SY Police, BTCV, DNS, LEAF
Limestone Woodland	Forestry Commission	DMBC, NE, YWT, FWAG, FC, DGSP, DNS, LEAF, BTCV, SY Police
Lowland Heathland /Acid Grassland Mosaic	Natural England	DMBC, NE, FWAG, YWT, HA, SY Police, EA, YW, IDBs, BTCV, DNS, LEAF, YNU
Lowland Heathy Oak Woodland	Forestry Commission	DMBC, FWAG, FC, NE, YWT, SY Police, DNS, LEAF, BTCV, YNU
Lowland Raised Mire	Natural England, Faber Maunsell	DMBC, DNS, YWT, EA, IDBs, NE, THMCF, YNU
Marshes and Swamps, Lakes and Ponds, Ditches and Drains	Natural England, Faber Maunsell, Environment Agency	DMBC, DNS, YWT, EA, IDBs, NE, FWAG, Ponds Conservation Trust, LEAF, RSPB, BW, THMCF
Minor Streams, Springs, Fens, Flushes, Mires and Fenny Fields	Natural England, Faber Maunsell	DMBC, EA, IDBs, NE, BW, FWAG, LEAF, YWT, DNS, THMCF, DGSP

Table 5 – Habitat Action Plan Lead Partners (continued)

Doncaster's Habitat Action Plans	UK BAP Lead Partner/s	Doncaster's Lead Partners
Neutral and Wet Grassland	Natural England	DMBC, EA, BW, FWAG, NE, YWT, HA, SY Police, BTCV, DNS, YNU, LEAF
Parkland, Wood Pasture and Veteran Trees	Natural England	DMBC, DNS, NE, YWT
Post Industrial and Brownfield Land		DMBC, DNS, NE, YNU
Reedbeds	Natural England, Faber Maunsell	DMBC, YWT, EA, NE, IDBs, FWAG, RSPB, DNS, BTCV, LEAF, YNU
Rivers, Canals, Oxbows, Major Streams and Subsidence Flashes	Natural England, Faber Maunsell, Environment Agency	DMBC, EA, BW, IDBs, YWT, DNS, NE, SY Police, BTCV, DGSP
Urban Greenspace		DMBC, DNS, YWT, NE
Wet Woodlands	Forestry Commission	DMBC, EA, NE, YWT, FWAG, FC, IDBs, DGSP, DNS, LEAF, BTCV

A full list of acronyms and abbreviations is available in the 'Further Information' document of the LBAP.

Species Action Plans

7.31 The production of Species Action Plans (SAPs) has already begun, based upon 'A Species Audit of Doncaster Borough'. Draft SAPs have been compiled for the following species, which will shortly be published on the LBAP web pages;

Petty Whin	(<i>Genista anglica</i>)
Wild Service Tree	(<i>Sorbus torminalis</i>)
Scarce Vapourer moth	(<i>Orgyia recens</i>)
True fox sedge	(<i>Carex vulpina</i>)

8 Common Issues affecting local Biodiversity

Agricultural intensification

- 8.1 Large areas of land are under agricultural use, therefore changes in agricultural practices have a major influence on both habitats and species. Since the Second World War, trends towards predominantly arable agriculture, loss of hedgerows, habitat fragmentation, land drainage, improvement of grassland and widespread use of pesticides, herbicides and fertilisers have all reduced the biodiversity of farmland.



Groundwater and surface water abstraction

- 8.2 In recent years the availability of water has been a major issue. Increased abstraction from aquifers causes reduced water levels in many wetlands, particularly to the east of the borough. Increased urban development, requiring additional water supplies, puts mounting pressure on the water resource.

Water pollution

- 8.3 Agriculture, industry and residential areas all produce pollutants which can affect the quality of wetlands, open water bodies and flowing waters. Nutrient enrichment, or eutrophication, stimulates the growth of aquatic algae to the detriment of other wetland and aquatic plants. Bacterial growth also reduces the amount of oxygen available to fish and other aquatic animals.

Development pressure

- 8.4 There are ongoing pressures for expansion of the urban areas to economic and social needs. Within towns there is pressure to build on open areas, such as school fields, allotments, open spaces and on urban fringes, leading to a loss of urban wildlife habitats and fragmentation. Infilling within and between rural settlements is also a threat to habitats such as unimproved pastures, wetlands and scrub. Conversion of old farm buildings to residential uses can result in the loss of roosting habitats for both bats and for birds such as the barn owl.

Recreational pressure

8.5 There is mounting recreation pressure on resources such as the River Don, canals, and other water bodies and an increasing popularity of motorised water sports on inland lakes. Un-controlled motorbike scrambling can cause damage to sensitive habitats and is particularly prevalent and detrimental within the Don Gorge. Recreational pressures associated with the Open Access land of the Humberhead Peatlands, will need to be sensitively balanced and managed and this will in part be achieved through the developing Access Strategy.

Mineral extraction

8.6 The biodiversity of the Doncaster borough suffered during the era of coal mining, and peat extraction threatens the existence of lowland raised mires to the east of Doncaster (although noting that much of this land has now been transferred to Natural England). Other forms of ongoing and future commercial mineral extraction (such as Sand and Gravel, and Limestone, Quarries) can threaten a variety of habitats, particularly due to its scale. In the past, the reclamation of quarries and colliery spoil heaps was often focused on the creation of recreational land and/or the restoration of agricultural land (usually involving landfilling). Increasingly, however, reclamation schemes for these sites provide significant opportunities for habitat creation, particularly in areas that have become dominated by intensive arable agriculture in recent times. It is essential that the LBAP ensures that such reclamation schemes maximise the opportunities to provide additional habitats and encourage the return of a range of species.

Air quality

8.7 Increasing development and urbanisation inevitably lead to increasing amounts of fossil fuel consumption and hence greater emissions into the air. These arise from the direct use of fuel in homes and factories, during the production of materials used in constructing and furnishing our homes, and in the manufacture and transport of the products which we use and consume every day. The emissions of carbon dioxide and other greenhouse gases from the burning of fossil fuels are thought to be responsible for changes in the world's climate. Changes in average temperatures, rainfall and sunshine will alter the biodiversity of Doncaster and the UK as a whole.

Transport

8.8 Transport is an increasingly important issue in today's society. Commuting by car from rural settlements to work in towns and cities is increasing, and the amount of freight carried by road has never been higher. This leads to increasing pressure to build new roads and improve existing ones. Whilst vehicles directly contribute to air, noise, and water pollution; road improvements and new roads have direct effects on habitats by causing disturbance to, or loss of, roadside verges, hedgerows, trees, ditches and farmland. Air transport is now also a key influencing factor in the Doncaster borough. The future development and expansion of Doncaster Sheffield Robin Hood Airport at the former RAF Finningley Airbase will have an increasingly important impact on the biodiversity of the region. The presence of the Airport may influence aspects of habitat management and creation work proposed in the southeastern part of the Borough.



Woodland management

8.9 The decline of markets for woodland products has led to the abandonment of traditional woodland management such as coppicing and pollarding. Replanting with non-native tree species, particularly conifers, has a detrimental effect on the ground flora by preventing sunlight reaching the woodland floor. Similarly a cessation of traditional rotational coppicing management allows dense undergrowth to shade out herbaceous species including spring flowers. Newly developed Woodland Management Plans will draw upon these traditional silvicultural techniques; areas of coppice with standards have already been started in several woods. Longer term management will see Ancient Woodlands restored to their native composition through the removal of the non-native components, and by actively encouraging natural regeneration. This will benefit the ground flora and will help stimulate the migration of existing flora throughout the woods.

Energy production

8.10 Historically, Doncaster has been an important area for energy production. Coal-fired power stations were once located at Mexbrough, Doncaster and Thorpe Marsh. All of these have now been de-commissioned; however, there is now permission for a Clean Coal energy generation plant at the Former Hatfield Colliery site. The change of emphasis to renewable energy sources, such as wind power has resulted in the submission of proposals for extensive wind farms on the flatlands around the Humberhead Peatlands. The use of fast-growing trees such as willow varieties and eucalyptus as a source of bio fuel has been implemented in the past and is currently being explored in light of new 'renewables' initiatives and incentives. The crop is grown to produce a wood chip fuel, which can be used to either feed power stations or be burnt in wood chip boilers, producing heat for individual buildings or blocks of houses or offices. Large areas are required to grow the bio fuel crops, which may have implications for the use of Brownfield or urban fringe sites.

Climate change

8.11 A changing climate may alter the nature of the woodland that is able to survive. Warmer summer conditions may mean that some tree species can set more seed whilst others could fail to propagate and eventually die out. Spring and winter droughts may lead to drought stress in other species. The creation of new woodland ecosystems can act as carbon sinks by locking carbon dioxide from the atmosphere in to the trees and the woodland soil. The ability of those species and plant communities existing at the limit of their climatic range, to prevail locally, will be a key concern. The general range and distribution of species may change, in response to the change in climatic conditions.



9 Getting Involved

Generic Actions

9.1 Whilst the individual Action Plans within the LBAP propose detailed targets, objectives and actions, the following 'Generic Actions' (Table 6) aim to embed biodiversity principals and good practice in a non-specific fashion, applicable to all.

Table 6

Generic Action	Action Code	Rationale	Action Code
Adopt sustainability principals across all statutory and partner functions.	GEN/1	To promote, protect and enhance the existing biodiversity resource by ensuring that sustainability considerations are integrated across all partner functions.	All
Include biodiversity targets and principals within the organisational policies and strategic documents of all partners.	GEN/2	To promote, protect and enhance biodiversity, and raise awareness of issues and opportunities for conservation through our day-to-day activities, projects and plans.	All
Incorporate biodiversity targets and conservation measures into land management practices and protocols.	GEN/3	To protect and enhance the biodiversity resource within partner influence and control, through day-to-day activities, whether statutory duties, land management practices or organisational functions.	All
Undertake and maintain an audit of biodiversity resources and ensure appropriate levels and measures of protection are afforded.	GEN/4	To protect, enhance and monitor the existing biodiversity resource through appropriate management, statutory protection and routine review, according to best practice and published guidelines e.g. for site designation.	All
Adopt operational/ strategic protocols for biodiversity survey, expert consultation and monitoring, and adhere to best practice.	GEN/5	To conserve and monitor the existing biodiversity resource through the adoption of protocols which identify instances when survey is required to inform appropriate biodiversity protection and enhancement. To monitor and review conservation activity and raise awareness of local biodiversity.	All

Generic Action	Action Code	Rationale	Action Code
Work in partnership to facilitate the enforcement of wildlife legislation and address issues threatening biodiversity.	GEN/6	To protect and enhance the existing biodiversity resource. To raise awareness of biodiversity, demonstrate intolerance of its abuse, and promote wider participation and appreciation of the natural environment, whilst adhering to 'Countyside' codes of conduct	All
Pursue opportunities for data enhancement, management, promotion and sharing for the purpose of conservation.	GEN/7	To promote, protect and enhance biodiversity and facilitate routine monitoring, reporting and review of conservation activities and biodiversity status.	All
Develop protocols on the management of invasive and/or disease causing species.	GEN/8	To protect genetic biodiversity through the control and where possible eradication of threats such as non-native species.	All
Explore all avenues and opportunities for biodiversity conservation (financial/ practical/ delivery).	GEN/9	To promote, protect and enhance the existing biodiversity resource at every opportunity, through appropriate and available means and mechanisms.	All
Investigate and promote opportunities with all partners to conserve local genetic biodiversity.	GEN/10	To promote, protect and enhance the genetic biodiversity resource and local provenance and distinction, through the use of local seed and plant material	All
Promote greater co-ordination between partner conservation activities.	GEN/11	To facilitate the promotion, protection and enhancement of the biodiversity resource, and maximize opportunities for project planning, target delivery and monitoring.	All
Provide guidance, publicity and advice on biodiversity conservation.	GEN/12	To promote, protect and enhance the existing biodiversity resource, through combined knowledge, means and expertise, and raise awareness of issues and campaigns.	All

Generic Action	Action Code	Rationale	Action Code
Promote environmental initiatives and facilitate the uptake of funding, guidance and support.	GEN/13	To promote, protect and enhance biodiversity, by taking full advantage of existing and new environmental initiatives, and sources of funding and support, whether national, regional or local.	All
Promote and support environmental education, participation, and stewardship within the local community	GEN/14	To promote, protect and enhance biodiversity, and encourage greater appreciation of the natural environment through participation in conservation activities and campaigns, whether national, regional or local.	All
Promote and support the delivery of biodiversity conservation within the business community, and with private landowners.	GEN/15	To protect and enhance biodiversity, encourage greater appreciation of the natural environment as an asset, and promote participation in environmental standards.	All



Play Your Part!

- 9.2 Everyone can play a part in conserving biodiversity, and contributing on a personal level will help to meet and address the bigger targets and issues that present us.
- 9.3 Some of the most important contributions to be made are in the hands of Doncaster's communities, and people are encouraged to;
- Use the LBAP to learn about local nature conservation sites and natural areas.
 - Record and share wildlife observations with the Museum's Biological Record's Centre or local natural history group.
 - Take advantage of and enjoy the environmental activities provided by the Local Authority or other natural history and local interest groups, which are almost always free of charge!
 - Keep abreast of environmental initiatives, through the LBAP web pages and other bulletins and contribute wherever possible.
 - Examine the individual Action Plans and Generic Actions and contribute wherever possible.
 - Report environmental incidents and/ or abuse to the appropriate body.
 - Give and seek support to help deliver local biodiversity projects.
 - Enjoy local, accessible, nature conservation sites and support their aims.
 - Report and celebrate conservation efforts.
 - Conserve, enhance and enjoy your personal wildspace!





Doncaster Biodiversity Action Partnership
Doncaster Council, Environmental Planning, 2nd Floor, Danum House,
St Sepulchre Gate, Doncaster, DN1 1UB.

Telephone: 01302 862896
Email: bio.diversity@doncaster.gov.uk

www.doncaster.gov.uk/biodiversity

Photography throughout this suite of documents was reproduced with kind permission of
L Hill, P Seccombe, T Prosser, H Kirk, Natural England.



Supported by
The National Lottery[®]
through the Big Lottery Fund



**Doncaster
Biodiversity
Action Partnership**