Trent Valley Internal Drainage Board
Water Management Consortium

BIODIVERSITY ACTION PLAN

June 2013

This Biodiversity Action Plan has been prepared by the Trent Valley Internal Drainage Board in accordance with the commitment in the Implementation Plan of the DEFRA Internal Drainage Board Review for IDBs to produce their own Biodiversity Action Plans by April, 2010.

It also demonstrates the Board's commitment to fulfilling its duty as a public body under the Natural Environment and Rural Communities Act 2006 to conserve biodiversity.

Many of the Board's activities have benefits for biodiversity, not least its water level management and ditch maintenance work. It is hoped that this Biodiversity Action Plan will help the Board to maximise the biodiversity benefits from its activities and demonstrate its contribution to the Government's UK Biodiversity Action Plan targets.

The Board has adopted the Biodiversity Action Plan as one of its policies and is committed to its implementation. It will review the plan periodically and update it as appropriate.

..... Date 26-09-13

Mr. W. Staunton
Chairman of the Board

This Biodiversity Action Plan is a public statement by the Board of its biodiversity objectives and the methods by which it intends to achieve them.

We would welcome appropriate involvement in the delivery of the Plan from interested organisations, companies, and individuals.

You can contact us about this Biodiversity Action Plan by writing to the following address:

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Further information is available on the Board's website: www.naidb.co.uk/

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1 IDB BIODIVERSITY – AN INTRODUCTION

1.1 Introduction

Trent Valley Internal Drainage Board was constituted in April 2012 when: Fairham Brook, Kingston Brook, Laneham and Newark Area Internal Drainage Boards amalgamated. Of the four constituent Boards only 3 had existing IDB BAPs and these had some variations. The Board's Conservation Advisory Group agreed to develop a new Biodiversity Action Plan to encompass the whole district, and encompass the operational experience of BAP delivery.

Trent Valley Internal Drainage Board has conducted a biodiversity audit of its district and identified those habitats and species that would benefit from particular management or actions by the IDB. Using this information, which is presented in later sections, the IDB's Biodiversity Action Plan has been developed. The Plan identifies objectives for the conservation and enhancement of biodiversity within the drainage district, and goes on to describe targets and actions that will hopefully deliver these objectives. The intention is to integrate, as appropriate, biodiversity into the Board's activities, such as annual maintenance programmes and capital works projects.

The action plan will help to safeguard the biodiversity of the drainage district now and for future generations. In particular, it is hoped that implementing the plan will contribute to the achievement of local and national targets for UK BAP priority species and habitats. Species and habitats which are not listed in the UK BAP but may be locally significant for a variety of reasons have also been considered.

The Plan is an evolving document that will be reviewed and updated on a regular basis. It covers the entire drainage district of the IDB, as shown in Figure 1.

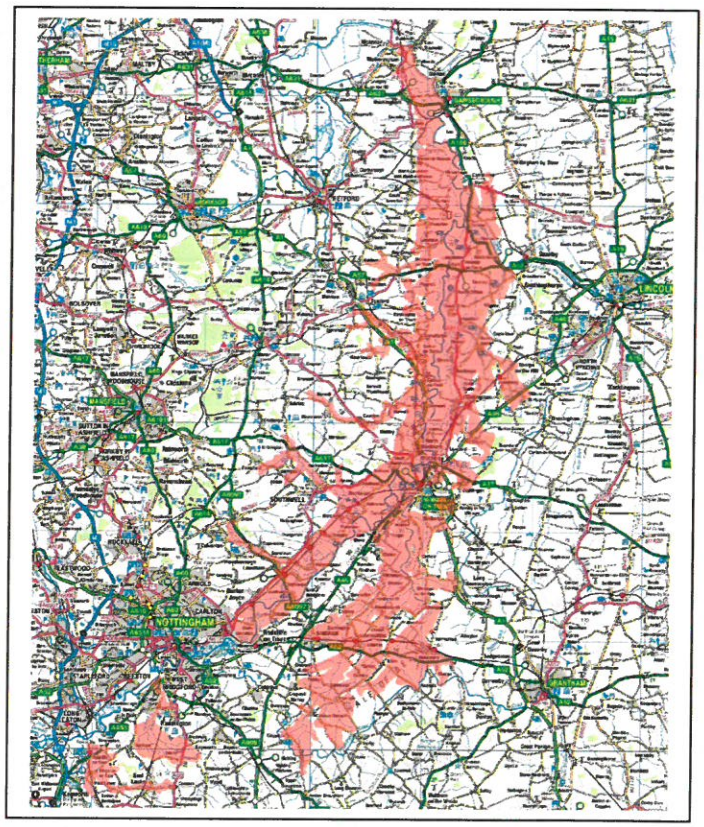

Figure 1. Internal Drainage Board district

1.2 What is Biodiversity?

The Convention on Biodiversity agreed at the Earth Summit in Rio de Janeiro in 1992 defined biodiversity as:

"The variability among living organisms from all sources, including terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems."

Biodiversity can be defined simply as "the variety of life" and encompasses the whole spectrum of living organisms, including plants, birds, mammals, and insects. It includes both common and rare species, as well as the genetic diversity within species. Biodiversity also refers to the habitats and ecosystems that support these species.

1.3 The Importance of Conserving Biodiversity

Biodiversity is a vital resource and it is essential to acknowledge its importance to our lives along with the range of benefits that it produces:

- Supply of ecosystem services – water, nutrients, climate change mitigation, pollination
- Life resources – food, medicine, energy and raw materials
- Improved health and well-being
- Landscape and cultural distinctiveness
- Direct economic benefits from biodiversity resources and 'added value' through local economic activity and tourism
- Educational, recreational and amenity resources

1.4 The Biodiversity Action Planning Framework

This IDB Biodiversity Action Plan is part of a much larger biodiversity framework that encompasses international, national and local levels of biodiversity action planning and conservation.

1.5 Biodiversity – The International Context

The international commitment to halt the worldwide loss of habitats and species and their genetic resources was agreed in 1992 at United Nations Conference on the Environment and Development, commonly know as the Rio Earth Summit. Over 150 countries, including the United Kingdom, signed the Convention on Biological Diversity, pledging to contribute to the conservation of biodiversity at the global level. These states made a commitment to draw up national strategies to address the losses to global biodiversity and to resolve how economic development could go hand in hand with the maintenance of biodiversity.

The Rio Convention includes a global commitment to achieve by 2010 a significant reduction of the current rate of biodiversity loss at the global, regional and national level (www.cbd.int/convention/convention.shtml). In October 2010, over 190 countries signed a global agreement in Nagoya, Japan to take urgent and effective action to halt the alarming global declines in biodiversity (Convention on Biological Diversity, COP Decision X/2, Strategic Plan for Biodiversity 2011-2020 (2010)).

1.6 Biodiversity – The National Context

The UK Biodiversity Action Plan (UK BAP) is the UK commitment to Article 6A of the Rio Convention on Biological Diversity. It describes the UK's priority species and habitats, and seeks to benefit 65 priority habitats and 1,150 species in total. It identifies other key areas for action such as the building of partnerships for conserving biodiversity and gathering vital biodiversity data.

The most recent England biodiversity strategy, "Biodiversity 2020: A strategy for England's wildlife and ecosystem services" was published by Defra on 19th August 2011. This strategy will guide conservation efforts in England over the next decade, including setting an ambition to halt overall loss of England's biodiversity by 2020 and in the longer term to move progressively from a position of net biodiversity loss to net gain.

The Strategy has a Priority Action for Water Management to: "Align measures to protect the water environment with action for biodiversity, including through the river basin planning approach under the EU Water Framework Directive" (www.defra.gov.uk/publications/files/pb13583-biodiversity-strategy-2020-111111.pdf).

1.7 Local Biodiversity Action Plans

For the UK Biodiversity Action Plan to be implemented successfully it requires some means of ensuring that the national strategy is translated into effective action at the local level. The UK targets for the management, enhancement, restoration, and creation of habitats and species populations have therefore been translated into targets in Local Biodiversity Action Plans (LBAPs), which tend to operate at the county level.

1.8 Internal Drainage Boards and Biodiversity

The Natural Environment and Rural Communities Act 2006 places a duty on IDBs to conserve biodiversity. As a public body, every IDB must have regard in exercising its functions, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity.

The Act states that conserving biodiversity includes restoring or enhancing a population or habitat. In so doing, an IDB should have regard to the list published by the Secretary of State of living organisms and types of habitat that are of principal importance for the purpose of conserving biodiversity. In effect, this list is comprises the Biodiversity Action Plan priority species and habitats for England.

In 2007, the Government's IDB Review Implementation Plan established a commitment that IDBs should produce their own Biodiversity Action Plans.

This IDB Biodiversity Action Plan has been produced to help fulfil these requirements and seeks to set out targets and actions that complement the UK Biodiversity Action Plan and Local Biodiversity Action Plans.

1.9 The Aims of the IDB Biodiversity Action Plan

The aims of this IDB BAP are:

- To ensure that habitat and species targets from the UK Biodiversity Action Plan and the local LBAP are translated into effective action within the drainage district.
- To identify targets for other habitats and species of local importance within the drainage district.
- To develop effective local partnerships to ensure that programs for biodiversity conservation are maintained in the long term.
- To raise awareness within the IDB and locally of the need for biodiversity conservation, and to provide guidance to landowners, occupiers and their representatives on biodiversity and inland water management.
- To ensure that opportunities for conservation and enhancement of biodiversity are fully considered throughout the IDB's operations, and
- To monitor and report on progress in biodiversity conservation.

2 THE IDB BAP PROCESS

2.1 The Biodiversity Audit

To produce this IDB Biodiversity Action Plan, information on the habitats and species present in the catchment was first obtained. This "Biodiversity Audit" involved the collation of existing data held by the IDB and by other biodiversity partners.

2.2 Evaluating and Prioritising Habitats and Species

The Biodiversity Audit identified those priority habitats and species in the UK Biodiversity Action Plan and the Local Biodiversity Action Plan that can be found in the drainage district. Additional non-BAP habitats and species deemed to be important within the drainage district were also identified.

Further habitats and species, together with additional targets and actions, may be added in the future, as knowledge is improved and delivery of the IDB BAP is reviewed.

A range of criteria was then used to select those species and habitats that are of particular importance to the IDB – that is to say, those habitats and species that could benefit from IDB actions. The criteria used included their national and local status, the opportunities for effective IDB action and the resources available.

2.3 Setting Objectives, Targets and Indicators

For each habitat and species identified as being important to the IDB, conservation objectives and targets have been drawn up and set out in the Plan. The objectives express the IDB's broad aims for benefiting a particular habitat or species. The related targets have been set to focus IDB programmes of action and to identify outcomes that can be monitored to measure achievement. For each target an indicator has been set – a measurable feature of the target that, when monitored over time, allows delivery to be assessed.

In order for this BAP to be as effective as possible the targets and actions have been devised to be SMART (Specific, Measurable, Achievable, Relevant and Time-limited). The targets are ambitious, but are also considered to be proportionate and practicable given the resources available.

Procedural targets and actions have also been considered. These are targets that the Board will use to measure the way in which it considers and incorporates biodiversity across the whole range of its operations. These may involve changes to administrative, management and operating procedures.

2.4 Implementation

Once targets have been set for habitats and species, it is important that the actions to deliver the Biodiversity Action Plan are described. The Plan sets out how the Board intends to implement the actions in the plan, often in partnership with other organisations or individuals.

2.5 Monitoring

Achievement of the Plan targets will be measured by a programme of monitoring which the Board will undertake, in some instances with assistance from its partners, and the methods to be used are described in the Plan.

2.6 Reporting and Reviewing Progress

It is important to review the implementation of the BAP, assess changes in the status of habitats and species and the overall feasibility of objectives and targets. In addition, it is

vital that the successful achievement of targets is recorded and the gains for biodiversity registered in the public domain.

The Plan sets out the methods the IDB will be using to review the delivery of targets and to communicate progress to partner organisations and the public.

3 THE BIODIVERSITY AUDIT

3.1 Introduction

The following Sections 4, 5 and 6 summarise the results of the Biodiversity Audit, undertaken since 2008. Section 4 provides information about the drainage district and a list of the nature conservation sites that occur within or bordering its boundaries. Sections 5 and 6 list respectively the habitats and species occurring within the district that are of potential importance to the IDB.

3.2 Local Biodiversity Action Plans

The following Local Biodiversity Action Plans cover the IDB's drainage district:

- Leicester, Leicestershire and Rutland Biodiversity Action Plan 2010 – 2015 (www.lrwt.org.uk/wildlife/biodiversity-action-plan).
- Nature Strategy for Greater Lincolnshire published in 2011 as the Lincolnshire Biodiversity Action Plan 3rd edition (www.glnp.org.uk/).
- Nottinghamshire Local Biodiversity Action Plan, first published in 1998 (www.nottsbag.org.uk/)

3.3 IDB Biodiversity Audit Boundary

The Biodiversity Audit covers the entire district of Trent Valley Internal Drainage Board, as shown in Figure 1. Where data has been obtained that shows a record of a species in a 1km square or 10km square which the district wholly or partially covers, this has been included in the area of the audit.

3.4 Sources of Data - Habitats

Information on habitats of relevance occurring within the drainage district was obtained from the following sources:

- Surveys undertaken by Environmental Consultants, submitted to the Board in support of Byelaws and Section 23 applications under the Land Drainage Act 1991.
- Surveys undertaken by the Lincolnshire Biodiversity Partnership on Local Wildlife Sites.
- Surveys data on Sites of Importance for Nature Conservation produced by Nottinghamshire Biological and Geological Record Centre.
- Data from the: Leicestershire and Rutland, Lincolnshire and Nottinghamshire Biodiversity Action Plans.
- The IDB BAPs produced by: Fairham Brook, Laneham and Newark Area Internal Drainage Boards.

3.5 Sources of Data - Species

Information on species of relevance occurring within the drainage district was obtained from the following sources:

- Surveys and records of the district conducted by the Board's staff.
- Surveys undertaken by Environmental Consultants, submitted to the Board in support of Byelaws and Section 23 applications under the Land Drainage Act 1991.
- Data from the: Leicestershire and Rutland, Lincolnshire and Nottinghamshire Biodiversity Action Plans.
- The IDB BAPs produced by: Fairham Brook, Laneham and Newark Area Internal Drainage Boards.

4 NATURE CONSERVATION SITES

4.1 The Drainage District

The drainage district covers an area of 44.2km^2 and contains 723km of Board-maintained watercourses. The largest part of the district extends from Misterton to Newark on both sides of the River Trent. South of Newark the district extends along the Trent Valley in a south-westerly direction to Nottingham, while other parts of the district encompass the valleys of the Rivers Smite and Devon. South of Nottingham are two smaller detached parts of the district, comprising the former Fairham Brook and Kingston Brook IDBs' districts, as shown in Figure 1.

4.2 Geology

The River Trent flows along the western extent of a band of undifferentiated triassic rocks characterised by mudstone, siltstone and sandstone. To the east is a geology of the lias group characterised by mudstone, siltstone, limestone and sandstone.

Superficial deposits comprise river terrace deposits of sand and gravel and alluvium deposits of clay, silt and sand with some Till at the south-westerly extent sand (British Geological Survey's GeoIndex, 2013). Most of the District is grade 3[1] on the Agricultural Land Classification system, smaller areas of grades 1,2 & 4 are present.

4.3 Landscape

4.3.1 Landscape Designations

There are no National Parks or Areas of Outstanding Natural Beauty (AONBs) within the Trent Valley Internal Drainage Board district.

4.3.2 Landscape Character

Natural England has divided the whole of England into a number of National Character Areas (NCA)[2] based on characteristic landforms, wildlife and land use. They are descriptive but not confined by traditional administrative boundaries. For each NCA, Natural England has prepared a profile that characterises the wildlife and natural features and identifies the influences that act upon those features and sets objectives for nature conservation.

The majority of the Board's district is with the Trent and Belvoir Vales[3] National Character Area, the key characteristics are:

- Gently undulating landform, with shallow ridges dropping down gently to broad river valleys.
- Open, arable or mixed farmed landscape, strongly rural in feel, with trimmed hedges and few hedgerow trees; woodlands only locally significant.
- Frequent nucleated villages with red brick houses, roofed with pantiles, and spired churches prominent in long views.
- Large market towns with historic centres and substantial churches visible from afar, notably Newark, Grantham, Southwell, Lincoln.

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[1] Between 1989 and 1999 individual sites were surveyed in more detail by MAFF, this subdivided grade 3 land sub divided into 3a & 3B, this work is limited in extent and not available did not extend to the Fairham Brook area . A small area of grade 2 land

[2] Natural England is revising its National Character Area profiles, these are due to be published by April 2014.

[3] Old profile, to be revised.

- Subtle variations within the area from the remote and pastoral landscape of the Vale of Belvoir, to the more undulating and wooded farmland north-east of Nottingham and the open arable lands to the north and east.
- Urban development closely confined to major centres, in particular the outskirts of Nottingham.
- Elsewhere the open, undeveloped and rural character strongly influenced locally by power stations, pylons and sand and gravel extraction on the Trent floodplain.

The Board's district encompasses small areas of these National Character Areas:

Northern Lincolnshire Edge with Coversands[4]	**Sherwood**	**Leicestershire and Nottinghamshire Wolds**	**Trent Valley Washlands**[5]
Small area where the Board's district abuts the River Trent north of Gainsborough.	*A single watercourse south of Oxton.*	*Southern part of the Fairham Brook district.*	*Western extent of Kingston Brook district.*

See Appendix One, Additional National Character Areas.

4.3.3 Sites and Monuments Records

The following data is maintained on the Board's Geographical Information System using data supplied by English Heritage.

Site Name	**NGR**	**Site Name**	**NGR**
Crococalana Roman town	SK 836 585	Rectangular barrows at North Muskham	SK 804 60672
Segelocum Roman town	SK 822 828	Standing cross 300m north of Trent Farm	SK 796 59377
Torksey Castle	SK 836 787	Civil War redoubt 580m ENE of sugar refinery	SK 799 55418
Settlement 3/4 mile (1198m) W of Cromwell Village	SK 786 614	Civil War fieldwork on Crankley Point	SK 800 56112
Civil War gun battery and covered way immediately south east of Wiverton Hall	SK 714 363	Kilvington medieval settlement and part of an open field system, 400m south west of Staunton Hall	SK 802 43086
Civil War gun battery and covered way immediately south east of Wiverton Hall	SK 714 362	The medieval bishop's palace and deer park, Stow Park	SK 857 78765
Settlement site at Morton	SK 723 510	Henge 850m south east of Foss Road Farm	SK 702 40351
Standing cross 140m north of The Old Hall	SK 801 590	Dog Island moat near Gainsborough	SK 813 89488
Gun platform 440m south east of Muskham Bridge	SK 789 558	Civil War sconce 650m north west of Devon Bridge	SK 786 538

[4] Old profile, to be revised.
[5] Old profile, to be revised.

Site Name	NGR	Site Name	NGR
Roman site on Red Hill	SK 497 302	Medieval village including monastic college, chapel, moat, fishponds, dovecote and open field system 200m south of Manor Farm	SK 762 453
Mound S of Sand Lane	SK 830 650	Medieval village including monastic college, chapel, moat, fishponds, dovecote and open field system 200m south of Manor Farm	SK 764 454
Roman camp 750m east of Church Cottages	SK 810 591	Civil War redoubt on Crankley Point	SK 800 560
Site of Ad Pontem, Stoke by Newark	SK 759 504	Civil War gun battery 50m south west of St Peters and St Paul's Church	SK 661 423
Site of Ad Pontem, Stoke by Newark	SK 760 504	Ringwork at Kingshaugh Farm	SK 764 734
Roman fort and camp	SK 824 737	Civil War Sconce 150m west of Muskham Bridge	SK 786 562
Site of pit alignments	SK 791 579	Site of medieval town	SK 836 783
Crococalana Roman town	SK 838 583	Little Carlton medieval village and part of the meadow field system	SK 776 572
Cross in St Peter and St Paul's churchyard	SK 848 756	Two moats and five fishponds at Top Green	SK 767 452
Site discovered by aerial photography NNE of village	SK 802 624	Old Hall moat and two fishponds	SK 775 616
Settlement site at Morton	SK 724 507	Hawton moated site, fishpond, Civil War redoubt and ridge and furrow	SK 785 512
Moated site 750m north west of Dairy Farm	SK 786 545	Moated grange with fishpond at Muston	SK 826 380
Averham moat and enclosure	SK 765 543	Moat, two fishponds, fishstews and pond bay, west of Balderton Lane	SK 831 540
Newark Castle	SK 796 540	Moated site and fishponds 225m north of Wiverton Hall	SK 712 365
Medieval settlement and open field system immediately south east of Low Farm	SK 798 853	Rolleston manor: three moats, eight fishponds with sluices, ridge and furrow and a leat	SK 742 527
Segelocum Roman town	SK 823 824	Henge 120m south of Lodge Farm	SK 678 445
Civil War redoubt 550m south east of Valley Farm	SK 794 547	Timber circle 430m north east of Stoke Fields Farm	SK 767 487

Site Name	NGR	Site Name	NGR
Fleming's Bridge	SK 807 390	Shifted medieval village earthworks and moat at Easthorpe	SK 811 386
Roman site on Red Hill	SK 494 304	Minor Romano-British villa, moat and associated medieval manorial and village earthworks, including six fishponds	SK 718 421
Civil War redoubt 680m north west of Dairy Farm	SK 786 544	Moat, two fishponds, boundary bank and ditch and two leats	SK 742 396
Langford medieval village, including moat and open field system, 450m north west of Elmtree Farm	SK 821 584	Little Carlton medieval village and part of the meadow field system	SK 778 576
Iron Age settlement	SK 798 577	Fleet Plantation moated site	SK 815 785
Site discovered by aerial photography NNE of village	SK 802 625	Moat, three fishponds, enclosures, hollow way and part of a road at Hall Yard	SK 770 680
Remains of a preceptory, fishponds and post-medieval gardens at Eagle Hall	SK 864 656	Cranmer's Mound: motte castle, prospect mound, moated fishponds, enclosure, hollow way and ridge and furrow	SK 744 401
Bingham medieval settlement, immediately west of Carnarvon School	SK 713 398	Willoughby deserted medieval village, post-medieval moated manor, church, six fishponds, ridge and furrow and hollow way	SK 787 630
Succession of rectilinear enclosures SW of Shelford Manor	SK 668 430		

4.3.4 Tree Preservation Orders

Tree Preservation Orders (TPOs) are made under the Town and Country Planning Act 1990 and the Town and Country Planning (Trees) Regulations 1999. TPOs are administrated by District Councils to protect specific trees or a particular woodland from deliberate damage and destruction.

Tree Preservation Orders are, if available electronically maintained on the Board's Geographical Information System. Trees are regularity trimmed during the Board's maintenance activities, these works are designed to preserve flows, trees are not removed during this work.

For capital schemes, the Board produces Environment Impact Assessments[6], and investigates any applicable Tree Preservation Orders.

[6] The Environmental Impact Assessment (Land Drainage Improvement Works) Regulations 1999 (as amended).

4.4 Statutory Nature Conservation Sites

4.4.1 International Sites

There are no sites of international nature conservation importance within and immediately adjacent to the Trent Valley IDB's district.

4.4.2 National Sites

The following nationally-designated conservation sites are found within the district:

Table 2. National Designations

Site name	Designation	Features Relevant to IDB
Barnstone Railway Cutting SK 741 356	SSSI	Calcareous grassland, not adjacent to any Board maintained watercourses.
Besthorpe Meadows SK818641	SSSI	Wet Grassland alongside a Board maintained watercourse (Collingham Fleet). A Water Level Management Plan is under development, the Board are a consultee.
Besthorpe Warren SK828654	SSSI	Dry acid grassland vegetation, not adjacent to any Board maintained watercourses.
Eakring & Maplebeck Meadows SK702621	SSSI	Wet Grassland alongside a Board maintained watercourse (Carlton/Caunton Beck Pt. 2). A Water Level Management Plan is under development, the Board are a consultee.
Muston Meadows SK824365	SSSI	Neutral clay grassland, not adjacent to any Board maintained watercourses.
Orston Plaster Pits SK762401	SSSI	Neutral and calcareous grassland with eutrophic open water, not adjacent to any Board maintained watercourses.
Spalford Warren SK832680	SSSI	Grassheath dominated by wavy hair-grass, not adjacent to any Board maintained watercourses.

4.4.3 Local Nature Reserves

The following Local Nature Reserves, which are designated by local authorities under Section 21 of the National Parks and Access to the Countryside Act 1949, are found within the district:

Table 3. Local Designations

Site name	Designation	Features Relevant to IDB
Besthorpe	Local Nature Reserve	See SSSI and Nottinghamshire Wildlife Trust Reserve
Bingham Linear Park	Local Nature Reserve	Bisected by Board maintained watercourse including River Smite Pt. 2.
Devon Park Pastures	Local Nature Reserve	No adjacent Board maintained watercourses.
Eakring Meadows	Local Nature Reserve	See SSSI and Nottinghamshire Wildlife Trust Reserve
Farndon Ponds	Local Nature Reserve	No adjacent Board maintained watercourses.
Farndon Willow Holt	Local Nature Reserve	Nottinghamshire Wildlife Trust Reserve
Netherfield Lagoons	Local Nature Reserve	No adjacent Board maintained watercourses
Southwell Trail	Local Nature Reserve	Bisected by Board maintained Halam Beck
Spalford Warren	Local Nature Reserve	Nottinghamshire Wildlife Trust Reserve

The following Nature Reserves are managed by the Wildlife Trusts. Some are designated as Local Nature Reserves and/SSSI, they may also have non-statutory designations such as Sites of Importance for Nature Conservation or Local Wildlife Sites, the sites are:

Site name	Designation	Features Relevant to IDB
Besthorpe	Nottinghamshire Wildlife Trust Reserve.	Includes Besthorpe Meadows SSSI.
Brierleys Meadow	Nottinghamshire Wildlife Trust Reserve.	Wet Grassland. Board maintained Collingham Fleet on eastern boundary.
Eakring Meadows	Nottinghamshire Wildlife Trust Reserve.	Includes Eakring & Maplebeck Meadows SSSI
Farndon Willow Holt & Water Meadows	Nottinghamshire Wildlife Trust Reserve.	Flood meadow and wildflower-rich grassland. The Board maintained Fever Drain encompasses part of the meadow.
Girton Grassland	Nottinghamshire Wildlife Trust Reserve.	Damp species-rich grassland. No adjacent Board maintained watercourses.

Site name	Designation	Features Relevant to IDB
Hunt's Meadow	Nottinghamshire Wildlife Trust Reserve.	Meadow. Board maintained Carlton/Caunton Beck Pt. 2 on southern boundary.
Lowdham Plantation	Nottinghamshire Wildlife Trust Reserve.	Woodland. Board maintained Bypass Feeder on north eater boundary
North Muskham Lake	Nottinghamshire Wildlife Trust Reserve.	Past gravel pit. No adjacent Board maintained watercourses.
Osmanthorpe	Nottinghamshire Wildlife Trust Reserve.	Woodland/old orchard. Board maintained Edingley Beck on eastern boundary.
Penny Pasture Common	Nottinghamshire Wildlife Trust Reserve.	Western part of Eakring Meadows.
Spalford Warren	Nottinghamshire Wildlife Trust Reserve.	Spalford Warren SSSI.
Staunton Quarry	Nottinghamshire Wildlife Trust Reserve.	Ponds and calcareous grassland. Board maintained Moor Drain to south
Tunman Wood	Managed by Lincolnshire Wildlife Trust on behalf of Witham Valley Country Park.	Ancient woodland. Board maintained Morton Boundary Drain adjoins the wood.

4.5 Non-statutory Local Sites

A number of sites have been identified locally as being important for biodiversity and/or geodiversity, these designations do not have statutory status, they are "protected" by planning policies. Local Authorities are obligated under legislation and Government guidance to reporting on the number of these sites in positive management for Single Data List Indicator 160.00.

In Nottinghamshire and Leicestershire these sites are designated as Sites of Importance for Nature Conservation (SINC). Date on these sites is available on the web via http://info.nottinghamcity.gov.uk/insightmapping/#, the data can't be provided as a shape file and integrated with the Board's Geographical Information System without a service level agreement with the Nottinghamshire Biological and Geological Record Centre.

In Lincolnshire these site are called Local Wildlife Sites and or Local Geological Sites, these designations will succeed Sites of Nature Conservation Importance and/or Regionally Important Geological and Geomorphological Sites. Data on these sites is maintained on the Board's Geographical Information System as Lindsey Marsh Drainage Board and the Isle of Axholme and North Nottinghamshire Water Level Management Boards have service level agreements with the Greater Lincolnshire Nature Partnership.

In line with DEFRA's guidance these sites are recommended for review every five to ten years[7], with over 1200 sites in Nottinghamshire this means that the number of sites is subject to change.

The Board routinely undertakes Environmental Impact Assessment[8] for new works and will use data on Local Wildlife Sites and Local Geological Sites for this process.

[7] Local Sites Guidance on their Identification, Selection and Management, DEFRA, 2006.

[8] The Environmental Impact Assessment (Land Drainage Improvement Works) Regulations 1999 (as Amended)

5 HABITAT AUDIT

5.1 Habitat Audit Summary

This habitat audit summary lists the broad habitat types and UK BAP priority habitats that occur within the IDB district as identified by the information gathering exercise. Also listed are habitats deemed to be of local importance and/or featured in the county Local Biodiversity Action Plan that occur in the IDB district. Habitats that are of potential importance for the IDB, where water level management or other IDB activities may be of benefit, are identified. Finally, brief notes are included on the potential for the IDB to maintain, restore or expand its important habitats.

The following were included in the previous Habitat Audits for the Laneham, Newark and Fairham Brook IDB BAPs.

Table 5. Habitat Audit Summary

Broad Habitat Types **Existing IDB BAPs**	**UK BAP Priority Habitat**	**Nottinghamshire** **Local Biodiversity Action Plan Habitat**	**Lincolnshire** **Local Biodiversity Action Plan Habitat**	**Location of Habitat of Importance for IDB**	**IDB Potential for Maintaining, Restoring or Expanding Habitat**
Rivers Stream & Ditches (Drains And Ditches)	Rivers and Streams	Ditches	Rivers, canals and drains	Across district	High
Farmland also called Farmland Habitats	Arable Field Margins	Farmland: Arable farmland, arable field margins and improved grassland	Farmland and grassland	Across district	Delivered via Procedural Action Plan
Gravel Pits	Mesotrophic Lakes/ Eutrophic Standing Waters	Eutrophic And Mesotrophic Standing Waters	Ponds lakes and reservoirs	Across district	All existing BAP actions are completed or delivered via the procedural action plan
Coastal And Floodplain Grazing Marsh (Grazing Marsh)	Coastal and Floodplain Grazing Marsh	Lowland Wet Grassland	Grazing marsh	Across district	Medium

Broad Habitat Types Existing IDB BAPs	UK BAP Priority Habitat	Nottinghamshire Local Biodiversity Action Plan Habitat	Lincolnshire Local Biodiversity Action Plan Habitat	Location of Habitat of Importance for IDB	IDB Potential for Maintaining, Restoring or Expanding Habitat
Hedgerows	Hedgerows	Hedgerows: Including ancient and/or species-rich hedgerows	Hedgerows and hedgerow trees	Across district	Delivered via Procedural Action Plan
Reedbeds	Reedbeds	Reedbed	Reedbeds and bittern	Across district	Medium

5.2 Habitats of Importance for the IDB

The following section provides more information on the status and location of the habitats within the drainage district that are of importance for the IDB and may benefit from water level management or other IDB activities.

5.2.1 Rivers Stream & Ditches

Description: Rivers are natural streams of usually freshwater that flow toward the sea, many are now constrained by manmade banks. Drains are manmade water courses created for flood defence purposes along the route of ancient streams, or straighter drains created during drainage of the fens and marshes. Technically ditches are no included in the November 2011 habitat definition.

National status and local county status: Nationally data is not available; the Board maintained water courses present a substantial local resource.

Status and locations within drainage district: The Board maintains 723km across its district, that is bisected by the Environment Agency maintained main rivers.

Potential improvements: The Board is not responsible for water quality but undertakes its work to maintain and enhance the habitat while ensuring adequate conveyance and capacity for flood risk management. Species like filamentous algae indicate eutrophic conditions and can obstruct water vole burrows during the weed cutting programme. The Board can identify were this species occurs and work with partners to investigate solutions.

5.2.2 Coastal and Floodplain Grazing Marsh

Description: Grazing marsh is defined as periodically inundated pasture, or meadow with ditches which maintain the water levels, containing standing brackish or fresh water. The ditches are especially rich in plants and invertebrates.

National status and local county status: It is estimated that there are about 300,000 ha of grazing marsh in the UK.

Status and locations within drainage district: The estimated Lincolnshire resource is 4,000 ha, several new sites have been created via the Higher Level Stewardship Scheme recent years, the Nottinghamshire resource is unknown.

Potential improvements: The Board will continue working with these partnerships to enable the creation of grazing marsh on current and future washlands and flood storage areas where possible.

5.2.3 Reedbeds

Description: Reedbeds are wetlands dominated by stands of the common reed, where the water table is at or above ground level for most of the year. They tend to incorporate areas of open water and ditches and small areas of wet grassland and carr woodland may be associated with them. Reedbeds are included in Defra's Outcome Measure framework flood and coastal erosion risk management:

- 4A Hectares of water-dependent habitat created or improved to help meet the objectives of the Water Framework Directive/4A as a "UK Biodiversity Action Plan habitat" if over 0.1 hectare in extent.

National status and local county status: There are about 5000 ha of reedbeds in the UK, but of the 900 or so sites contributing to this total, only about 50 are greater than 20 ha, and these make a large contribution to the total area. Work to ascertain the local extent is underway.

Status and locations within drainage district: Reedbeds occur on the statutorily protected sites listed in 4.4. Many of the Board maintained drains are fringed with reed, which may be enhanced by creating berms.

Potential improvements: The Board will continue to create berms during reforming programmes. The creation of reedbeds will be considered when washlands and flood storage areas are created.

6 SPECIES AUDIT

6.1 Species Audit Summary

This species audit summary lists the BAP priority species that occur within the IDB district as identified by the information gathering exercise. Also listed are species deemed to be of local importance and/or identified in the county Local Biodiversity Action Plan that occur in the IDB district. Species that are of potential importance for the IDB, where water level management or other IDB activities may be of benefit, are identified. Finally, brief notes are included on the potential for the IDB to maintain or increase the population or range of species of importance.

The following were included in the previous Species Audits for the Laneham, Newark and Fairham Brook IDB BAPS

Table 6. Species Audit Summary

Common Name	Group	Order	Scientific Name	UK BAP Priority Species	Nottinghamshire Local Biodiversity Action Plan Species	Lincolnshire Local Biodiversity Action Plan Species	Location of Species of Importance for IDB	IDB Potential for Maintaining or Increasing Species Population or Range
Barn Owl	Birds	Strigiformes	*Tyto alba*	No	Yes	Farmland Birds	Across district	Medium
Bats	Chiroptera	Chiroptera	Chiroptera	Yes	Bats	Bats	Across district	Delivered via Procedural Action Plan
Dragonflies And Damselflies	Insect	Odonata	*Odonata*	Yes – some species	No	No	Across district	Delivered via Procedural Action Plan
European Eel	Fish	Anguilliformes	*Anguilla anguilla*	Yes	No	Fresh Water Fish	Across district	Delivered via Procedural Action Plan
Kingfisher	Birds	Bird	*Alcedo atthis*	No	No	No	Across district	Delivered via Procedural Action Plan
Otter	Terrestrial mammals	Carnivora	*Lutra lutra*	Yes	Yes	No	Across district	Delivered via Procedural Action Plan
Reed Bunting	Birds	Passeriformes	*Emberiza schoeniclus*	Yes	No	Farmland Birds	Across district	Delivered via Procedural Action Plan

Common Name	Group	Order	Scientific Name	UK BAP Priority Species	Nottinghamshire Local Biodiversity Action Plan Species	Lincolnshire Local Biodiversity Action Plan Species	Location of Species of Importance for IDB	IDB Potential for Maintaining or Increasing Species Population or Range
Veteran Trees	Vascular Plant	Vascular plant	*According to species*	Yes	Parkland and wood pasture	Wood pasture and parkland	Across district	Delivered via Procedural Action Plan
Water Vole	Terrestrial mammals	Rodentia	*Arvicola amphibius*	Yes	Yes	Yes	Across district	High
White-Clawed Crayfish	Invertebrate	Decapoda	*Austropotamobius pallipes*	Yes	Yes	Yes	River Greet in Southall in 1984 River Trent at Kelham near Newark in 1986 Dover Beck in 2011	Delivered via Procedural Action Plan

6.2 Species of Importance for the IDB

The following section provides more information on the status and location of the species within the drainage district that are of importance for the IDB and may benefit from water level management or other IDB activities.

6.2.1 Barn Owl

Description: White/buff coloured owl, an iconic bird hunting at dawn and dusk.

National status and local status: Barn owls have declined nationally over the last 50 years with a 70% decline between 1932 and 1985.

Status and locations within drainage district: Populations are believed to be recovering. Nationally IDB have been a significant provider of barn Owl nest boxes with the highest population often in IDB districts.

Potential improvements: Maintaining and enhancing the network of nest boxes across the district and maintaining grassland habitat suitable for quarry species.

6.2.2 Water Vole

Description: The largest British Vole, typically up to 20cm long, with dark fur and a "round" body a short, fat face and a fur covered tail. Water voles in the UK feed predominately on aquatic vegetation and burrow into the banks of watercourses.

National status and local status: The water vole is estimated to have suffered a 90% fall in numbers in less than 20 years, some evidence of an increase in numbers based partly on IDB work.

Status and locations within drainage district: The Board's monitoring has yet to determine population trends, currently the distribution is fragmented across the Board's District.

Potential improvements: The Board has and are reviewing their maintenance works to maintain Water Vole habitat and support the population. American Mink may be the biggest threat to the Water Vole.

7 HABITAT AND SPECIES ACTION PLANS

7.1 Habitat and Species Action Plans

The following sections contain action plans for each of the habitats and species that have been prioritised for action by the IDB. The plans set out the objectives, targets and actions that the IDB believes are appropriate for each. These plans will be reviewed and updated periodically.

8 HABITAT ACTION PLANS

8.1 Rivers, Canals and Drains Action Plan

National UK BAP Targets

Rivers, Canals and Drains are a priority habitat for the UK Biodiversity Action Plan.

Local Biodiversity Action Plan Targets

Ditches are include in the Nottinghamshire Biodiversity Action Plan, Rivers, Canals and Drains are included in the Lincolnshire Biodiversity Action Plan.

Local Status

The total resource is unknown, it will include many watercourses managed by riparian owners.

Status within the Drainage District

The Board maintains 723km of watercourse within the drainage district. The Board maintained watercourses include:

- Artificial watercourses, developed for drainage - originally designed and constructed solely for the function of conveying surplus water run-off and managing water levels.
- Natural occurring river and streams managed for drainage

The Board's role includes maintenance of the system and improvements such as creating new drains and structures.

IDB Objectives and Targets

Target Reference	Target	Action Reference	IDB Actions	Partners	Date	Indicators	Reporting
1	Review and develop the cutting programme in accordance with the Drainage Channel Biodiversity Manual Maintain & Improve Condition	1.1	Management plans produced for watercourses when rare/vulnerable flora present.	Wildlife Trusts	On-going via monitoring	No of plans produced.	As adopted
		1.2	All working practises developed to be compliant with water vole presence.	Wildlife Trusts	2014	Channel length (m)	2009

		1.3	EIAs produced for "improvements works".	Statutory and non-statutory consultees.	Annual	No of schemes assessed.	Annual

Associated Species

All wetland flora and fauna, particularly Water Voles.

8.2 Coastal and Floodplain Grazing Marsh Action Plan

National UK BAP Targets

Coastal and Floodplain Grazing Marsh are a priority habitat for the UK Biodiversity Action Plan.

Local Biodiversity Action Plan Targets

Coastal and Floodplain Grazing Marsh are included in the Lincolnshire and Nottinghamshire Biodiversity Action Plans.

Local Status

The extent in Nottinghamshire is not known, the estimated Lincolnshire Resource is approx. 4,000 hectares, of varying and unknown quality.

Status within the Drainage District

Not known.

IDB Objectives and Targets

Target Reference	Target	Action Reference	IDB Actions	Partners	Date	Indicators	Reporting
2	Create Habitat	2.1	Consider the creation of grazing marsh on washland and flood storage areas in all capital schemes.	Wildlife Trusts	Annual	No of schemes assessed.	Annual

Associated Species

Water Voles, Reed and Sedge Warblers and Waterfowl, Nesting Waders including Avocet, Lapwing, and Grass Snakes.

8.3 Reedbeds Action Plan

National UK BAP Targets

Local Biodiversity Action Plan Targets

Reedbeds are included in the Lincolnshire Biodiversity Action Plan.

Local Status

Reedbeds are included in the Lincolnshire and Nottinghamshire Biodiversity Action Plans.

Status within the Drainage District

The extent in Nottinghamshire and Lincolnshire is not known.

IDB Objectives and Targets

Target Reference	Target	Action Reference	IDB Actions	Partners	Date	Indicators	Reporting
3	Create Habitat	3.1	Consider the creation of reedbeds in all capital schemes. (Note often created by the creation of berms).	Wildlife Trusts Landowners	Annual	No of schemes assessed.	Annual

Associated Species

Water voles, Reed and Sedge Warblers and Waterfowl, larger areas may be used by Bearded Tits, Bitterns and Marsh Harriers.

9 SPECIES ACTION PLANS

9.1 Barn Owl

Legal Protection Status

The Barn Owl is listed in the Wildlife & Countryside Act 1981; Schedule 1 - Birds that cannot be intentionally or recklessly disturbed when nesting and Schedule 9, Birds that cannot be released into the wild without a license.

National UK BAP Targets

The Barn Owl is not a priority species in the UK BAP. The Wildlife Conservation Partnership has a National Conservation (Action) Plan for the Barn Owl.

Local Biodiversity Action Plan Targets

The Barn Owl has a species Action Plan in Nottinghamshire and is included in a grouped Species Action Plan for Farmland Birds in the Lincolnshire BAP..

Local Status

Barn Owls declined nationally over the last 50 years with a 70% decline between 1932 and 1985. Today it is estimated that about 80% of the country's Barn Owls nest in artificial nest boxes developed by the Wildlife Conservation Partnership over 21 years ago.

Status within the Drainage District

Barn Owl populations are known to be recovering in Lincolnshire but may still be declining in Nottinghamshire.

Objectives and Targets

Target Reference	Target	Action Reference	IDB Actions	Partners	Date	Indicators	Reporting
4	Maintain and enhance Barn Owl population	4.1	Erect Barn Owl boxes at all suitable sites.	Wildlife Conservation Partnership	Annual	No of boxes installed	Annual

		4.2	Monitor the use of Barn Owl boxes once erected.	Wildlife Conservation Partnership	Annual	No of chicks fledged and no boxes occupied.	Annual

9.2 Water Vole

Legal Protection Status

The Water Vole receives legal protection under the Wildlife and Countryside Act 1981. Originally this was for of section 9(4); places which are used for shelter or protection. In April 2008, the Water Vole received full protection under section 9 and it is now an offence to intentionally kill, take, injure or possess Water Voles.

National UK BAP Targets

Water Vole are a Priority Species in the UK BAP.

Local Biodiversity Action Plan Targets

The Water Vole has a species Action Plan in Nottinghamshire and Lincolnshire BAPs.

Local Status

The status in Nottinghamshire is not known, the Lincolnshire Biodiversity Action Plan's targets consider that Water Voles population appears to be increasing.

Status within the Drainage District

Scattered records.

Objectives and Targets

Target Reference	Target	Action Reference	IDB Actions	Partners	Date	Indicators	Reporting
5	Maintain and enhance Water Vole population.	5.1	IDB staff trained on identification and recording for water vole and invasive/protected species.	Wildlife Trust	Annual	No trainings days delivered. No of records received.	Annual

		5.2	Appraisals undertaken for all improvement works. EIAs produced for "improvements works"..	Statutory and non-statutory consultees	Annual	No of schemes assessed.	Annual

10 PROCEDURAL ACTION PLAN

Introduction

A number of procedural targets and actions have been established within this Procedural Action Plan. These are intended to integrate biodiversity considerations into IDB practices and procedures.

Objectives and Targets

Target Reference	Target	Action Reference	IDB Actions	Partners	Date	Indicators	Reporting
6	Maintain extent of habitat in the Board's district. (Note the Board requires the Environmental Considerations on all applications to be provided and provides an advice notes on Environmental Considerations).	6.1	Require replacement habitat creation for Byelaw and Section 23 consents that reduce habitat.	LPA	Annual	No of schemes assessed.	Annual
		6.2	Ensure protection of drains/ditches within new developments and encourage appropriate management to enhance wildlife value	LPA	Annual	No of schemes assessed.	Annual
7	Surveillance of BAP, protected and invasive species. Particularly: Badger, Eels and Water Vole. Mink, Creeping Water Primrose, Himalayan balsam, Japanese Knotweed, Giant Hogweed.	7.1	Annual recording programme during cutting season.	Wildlife Trusts	Annual	No of records.	Annual
		7.2	Biodiversity training for operational staff, see Water Vole.	Wildlife Trusts	Annual	No of Training days	Annual
		7.3	Board's data supplied to Local Records Centres annually.	LRCs	Annual	No records sent.	Annual
		7.4	Continued development of data on Board's GIS system.	LRC	Annual	Current data available;	Annual
		7.5	Partnership working on projects for control.		Annual	No schemes	Annual

8	Increase extent of habitat in the Board's district.	8.1	The Board will continue working with On Trent/Trent Rivers Trust and similar landscape partnerships that seek funding and provide advice to landowners		Annual	No partnerships engaged with.	Annual

11 IMPLEMENTATION

11.1 Implementation

The Biodiversity Action Plan will be adopted by the Board on 27th June 2013.

The Biodiversity Action Plan provides a series of targets for improving the Board's delivery of Biodiversity. Many of the measures are already in operation with recording originally initiated in 2005 and subsequently since working with Lindsey Marsh Drainage Board in having access to a full time Environmental Officer. The Boards Environmental Officer is a Chartered Environmentalist and a full member of the Institute of Ecology and Environmental Management. The Board has appointed name needed as its Biodiversity Champion.

Applicants wishing to alter watercourses (under Byelaws and Section 23 of the Land Drainage Act 1991) are requested to supply "The Environmental Impact of the proposals". These are assessed by the Board's Environmental Officer.

Trent Valley Internal Drainage Board's Biodiversity Action Plan will be published on the Board's web site and a copy will be displayed in reception.

12 MONITORING

12.1 Monitoring

The Board will monitor progress for each of the targets in this Biodiversity Action Plan, as detailed in the Habitat and Species Action Plans.

The Board is a member of the Greater Lincolnshire Nature Partnership and attends meetings of the Nottinghamshire Biodiversity Action Group. Data will be exchanged with the Lincolnshire Environmental Records Centre and Nottinghamshire Biological and Geological Record Centre who, after verification of the records, will place them on the National Biodiversity Network www.nbn.org.uk/ which is available to all.

13 REVIEWING AND REPORTING PROGRESS

13.1 Reviewing and Reporting Progress

A report on the operation of Trent Valley Internal Drainage Board's Biodiversity Action Plan will be produced annually to the Board and published on the Board's web site and supplied to the Lincolnshire Biodiversity Partnership and Nottinghamshire Biodiversity Action Group. The Board is a member of the Lincolnshire BAP Rivers and Wetlands Habitat Group that coordinates action and reviews that section of the Lincolnshire BAP Action Plan.

The Board's partners in delivering this Biodiversity Action Plan include:

Association of Drainage Authorities (ADA)

British Trust for Ornithology (BTO)

Environment Agency (EA)

Greater Lincolnshire Nature Partnership (GLNP)

Lincolnshire Environmental Records Centre (LERC)

Lincolnshire Wildlife Trust (LWT)

Natural England (NE)

Nottinghamshire Biodiversity Action Group (NBAG)

Nottinghamshire Wildlife Trust (NWT)

Wildlife Conservation Partnership (WCP)

The Board will enter targets and report delivery on the Biodiversity Action Reporting System, the UK's national biodiversity information system that supports the planning, monitoring and reporting requirements of national and local organisations' Biodiversity Actions Plans www.ukbap-reporting.org.uk.Describe how the BAP will be implemented

14 APPENDIX ONE, ADDITIONAL NATIONAL CHARACTER AREAS

Northern Lincolnshire Edge with Coversands[9]	**Sherwood**	**Leicestershire and Nottinghamshire Wolds**	**Trent Valley Washlands**[10]
Small area where the Board's district abuts the River Trent north of Gainsborough.	*A single watercourse south of Oxton.*	*Southern part of the Fairham Brook district.*	*Western extent of Kingston Brook district.*
Large-scale 'upland' arable escarpment broadly divided into north and south by river Witham at Lincoln. Area broadens to south. Prominent scarp slope of Lincoln 'Cliff' marks western edge of area. Open landscape with rectilinear fields and few boundaries. Where enclosure still present, a mixture of limestone walls, discontinuous hedges and shelter belts. Sparse settlement on top of escarpment. Spring-line villages to west at foot of 'cliff' and small parklands to east towards the clay vale.	A gently rolling landform of low rounded sandstone hills, which principally coincide with an outcrop of the Permo-Triassic Sherwood Sandstone Group. The sandstone gives rise to well drained, acidic, sandy soils. Magnesian limestone and marl are exposed to the west of the area and underlie the sandstone, forming the base of a major aquifer. Woodland is a distinctive feature of the area with a mosaic of broadleaved, mixed and coniferous woodlands, including ancient oak wood pasture and parkland, and pine plantations.	A range of rolling hills, with elevated plateaux, narrow river valleys and distinctive scarp slopes. Jurassic mudstones (towards the west), limestone, sandstone and ironstone overlain by glacial till throughout much of the area produce moderately fertile soil. Woodland cover is generally sparse, except for some wooded scarps and in the Wreake Valley and adjacent to Rutland Water. Elsewhere, spinneys, fox coverts, hedgerows, hedgerow trees and streamside trees provide moderate cover.	Flat broad valleys, contained by gentle side slopes, with wide rivers slowly flowing between alluvial terraces. Constant presence of urban development, mostly on valley sides, in places sprawling across the valley and transport corridors following the valley route. Contrasts of secluded pastoral areas, with good hedgerow structure, and open arable with low hedges. Strong influence of riparian vegetation, where rivers are defined by lines of willow pollards and poplars.

[9] Old profile, to be revised.
[10] Old profile, to be revised.

Northern Lincolnshire Edge with Coversands[9]	**Sherwood**	**Leicestershire and Nottinghamshire Wolds**	**Trent Valley Washlands**[10]
Active and redundant airfields. More complex landscape of the northern section includes a double scarp, urbanisation and dereliction in Scunthorpe area and the Coversands area of heath, blown sand habitats and conifer woods. Roman roads and ancient track ways such as Ermine Street or High Dyke follow north-south routes with one significant east-west route - Salter's Road. Green lanes occur in the southern area.	Wooded horizons frame extensive areas of open arable farmland with large, geometric fields contained by low, often treeless, hawthorn hedges. Commercial agriculture, especially in the north of the character area, is focused on root crops, although pig and poultry units are also characteristic. The free draining geology and acidic soils support many areas of unenclosed lowland heathland and acid grassland often associated with the wood pasture areas, but also found on marginal agricultural land, on rail and roadsides and on restored colliery sites. Narrow river corridors, associated with marshy flats and flood meadows, drain the area and dry valleys are characteristic because of the permeable geology.	Agricultural land use dominates with arable farming on the plateaux tops and pasture on steep sloping valley sides. Agricultural land use has diminished semi-natural habitat although important habitats do remain, including species rich neutral grasslands, wet meadows, parkland, reservoirs, rivers and streams. The centrally elevated Wolds form a watershed between the rivers Wreake, Soar and Trent, draining streams downwards in a radial pattern to each of these rivers, which together with Rutland Water, provide significant biodiversity and recreation assets. The establishment of Rutland Water reservoir has created a major wetland of international importance for water birds that combines open water, lagoons, islands, mudflats, reedswamp, marsh, old meadows, pastures, scrub and mature woodland.	Open character punctuated by massive cooling towers of power stations and strongly influenced by pylons, sand and gravel extraction, and roads.

Northern Lincolnshire Edge with Coversands[9]	Sherwood	Leicestershire and Nottinghamshire Wolds	Trent Valley Washlands[10]
	A dispersed settlement pattern of small villages and farmsteads is common in the agricultural areas, with larger settlements surrounding the perimeter of the area. Characteristic building materials are local red sandstone, and red brick and pantiles. Large country houses, their associated parklands and, in some cases, their narrow engineered lakes, are a distinctive feature of this character area.	Evidence of many deserted and shrunken settlements, as well as extensive areas of ridge and furrow separate small villages and farms linked by country lanes with wide verges. Red brick buildings with pantile roofs are widespread and most abundant clustered around churches, which are constructed from ironstone and limestone contributing to the local vernacular. Urban influences include overhead lines, mineral extraction sites, airfields and the busy A46 and A60 although these do not weaken the rural character.	