



Local Wildlife Sites Review North Kesteven Surveys 2010 **Report for North Kesteven District Council.**

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Executive Summary

- The Ecology Consultancy was commissioned by North Kesteven District Council to carry out a review of 74 existing and candidate Sites of Nature Conservation Importance (SNCIs) during 2010. The survey was intended to inform the emerging Local Development Framework for North Kesteven.
- One site was removed from this list because it had previously been surveyed as part of the 2008 review. A second area has been approved for business use and as such none of this land, which covered parts of three sites, was surveyed although the remaining sections of each site were surveyed where possible. Beckingham Ranges which was surveyed during the 2008-2009 review was revisited during 2010 and a further site; Ruskington Pits was added to the list, thus, providing a list of 75 sites to be surveyed.
- A Phase 1 habitat survey was carried out on each site for which access permission was given. Information was gathered to a standard format, as defined by the Lincolnshire Biodiversity Partnership (2008) in its guidance for the selection of Local Wildlife Sites for the historic county of Lincolnshire. The information gathered was then used to evaluate each site against the Local Wildlife Site selection criteria, and recommendations made as to which sites should be considered by the Local Wildlife Sites Panel for designation
- In total 54 sites were surveyed and a recommendation made. Seven of these sites were only partially accessible; as such assessment and recommendations for these sites apply only to the area surveyed. Access was denied to 21 sites.
- 23 sites (43.39% of those assessed) were evaluated as meeting one or more of the Local Wildlife Site selection criteria. Of these: seven qualified under woodland criteria (WD2, WD5 & WD6); three under neutral grassland (NG1); two under calcareous grassland (CG1); three under standing water (Sta2); one under swamp, marsh and fen (Sw2); and seven under habitat mosaics (Mos1, Mos2 & Mos4).
- It is recommended that these 23 sites are given consideration by the Local Wildlife Sites Panel for designation as Local Wildlife Sites and subsequently incorporated into the Local Development Framework for North Kesteven.
- It is recommended that additional survey is carried out on a further five sites before making a final assessment as to whether or not they merit designation as Local Wildlife Sites. These are sites that are considered to hold the potential to qualify either in future years, once the vegetation has had time to develop or where species present at other times of year may have been overlooked.

1. Introduction

The Ecology Consultancy was commissioned by North Kesteven District Council to carry out a review of a number of existing and candidate Sites of Nature Conservation Importance (SNCIs) during 2010. The purpose of the review was to inform the emerging Local Development Framework for North Kesteven by assessing the sites against the recently produced guidelines for the selection of Local Wildlife Sites (LWS) in Lincolnshire (Lincolnshire Biodiversity Partnership 2008). These have been prepared by the Biodiversity Partnership in response to guidance produced by DEFRA on Local Sites – Guidance on their Identification, Selection and Management (DEFRA 2006). The aim of this guidance and the selection criteria for Lincolnshire is to make the selection of Local Wildlife Sites more consistent and robust by basing it on up-to-date survey information and defined criteria.

The review included a total of 75 sites; 73 from the 2010 list of medium priority sites provided by North Kesteven District Council, plus one site from the 2008 priority list for which additional information was required in order to inform the LWS panels' decision and an additional site recommended for survey by the Environment Agency. The review took the form of a Phase 1 habitat survey of each site for which access was granted, followed by an evaluation of the features present and comparison of these with the LWS selection criteria. This report presents the results of the review, including an overview of the findings as well as individual site descriptions and species lists. It makes recommendations with respect to sites that merit designation as LWS, including any suggested boundary modifications. As well as forming part of the evidence base for the Local Development Framework, the information contained in the report will be utilised by the Local Wildlife Sites Panel of the Lincolnshire Biodiversity Partnership to assess sites for designation as Local Wildlife Sites and will be incorporated into the biodiversity database for Lincolnshire maintained by the Lincolnshire Environmental Records Centre.

It should be noted that inclusion of a site in the survey or a recommendation for its designation as a Local Wildlife Site does not confer any right of public access to the land. The landowners' permission is required to visit all sites that are not open to the public.

2. The Project Brief & Methodology

The full project brief for the study is reproduced in Appendix 1. In 2008 this originally called for a review of some 251 existing and candidate wildlife sites in North Kesteven. This list was subsequently divided according to priority based on the requirements of the emerging LDF and many of these sites were then surveyed 2008 and 2009 resulting in a list of 74 sites prioritised for survey during 2010. One of these sites initially listed for survey in 2010, Oak Holt Blankney, was subsequently removed from the list having already been surveyed as part of the 2008 review. One site, Beckingham Ranges was considered to require further survey following the 2008-2009 reviews due to its large size and the time restrictions of previous surveys; as such this site was also surveyed during 2010. An additional site was highlighted by the Environment Agency as being of potential wildlife interest and was also included in the 2010 survey. This gave a total of 75 sites to be surveyed during 2010.

The process of designating sites as Local Wildlife Sites in Lincolnshire is intended to be a four stage process. Of these, the first three stages are within the scope of this project. The first stage required direct field surveys of each site to describe the habitats present and to generate an inventory of vascular plant species present along with incidental records of other plants, fungi and animals. Second, each site was then evaluated against the criteria for the selection of Local Wildlife Sites and sites that satisfy one or more criteria were identified. Third, for each site a portfolio of documentation was prepared for submission to the Wildlife Sites Review Group, including a site record with an account of the habitats and other noteworthy features, a species list, a map of the site and an overall evaluation. A GIS layer showing the boundaries of all sites surveyed and any suggested boundary modifications was also produced as part of this work package.

All of the information gathered is to be submitted to the Local Wildlife Sites Panel of the Lincolnshire Biodiversity Partnership and to North Kesteven District Council. The Local Wildlife Sites Panel will use this information to assess each site against the selection criteria for Local Wildlife Sites and will then make a recommendation as to whether or not they should be designated as a non-statutory Local Wildlife Site (LWS). Landowners/managers will be informed of the Local Wildlife Sites Panel's recommendation and, should the site be recommended for designation as a LWS, given the opportunity to make observations on the application of the selection criteria by the Lincolnshire Biodiversity Partnership Steering Group.

A copy of all of the survey information gathered will be lodged with the Lincolnshire Environmental Records Centre (LERC), for incorporation into their database. In addition,

each landowner/manager will receive a copy of the survey information pertaining to their land.

The field surveys were undertaken following standard Phase 1 habitat survey methodology (JNCC 2010) and the protocols outlined in the guidelines for the selection of Local Wildlife Sites (Lincolnshire Biodiversity Partnership 2008). A structured walk was carried out through each site, with the habitats and other features being recorded on a standard LERC recording card (see Appendix 2). A list of vascular plant species identifiable at the time of the survey was also compiled, using the Botanical Society of the British Isles (BSBI) recording card for North Lincolnshire (see Appendix 2). Incidental records of bryophytes (mosses and liverworts), fungi, invertebrates, fish, amphibians, reptiles, birds and mammals were made where appropriate; however, detailed surveys of these groups were beyond the scope the project. It should be noted that for some habitats the selection criteria include the quality of the assemblages of fish or invertebrates, as determined by their community conservation score. This was not typically assessed within the scope of the surveyed described here; however a recent survey of invertebrate interest had been carried out at three of the sites and the data was incorporated into the assessment where relevant (Chadd 2009). Other freshwater and swamp, marsh and fen habitats that were not assessed in such a way may have failed to qualify on the basis of their value for vascular plants but could still be of potential significance for fish and invertebrates. The status of these sites may be reviewed as further information is gathered and made available to the Wildlife Sites Panel from other sources, e.g. the Environment Agency.

National Indicator 197 'Improved Local Biodiversity' is one of the indicators used by local authorities to report their performance under the Local Government Performance Framework. It seeks to measure the proportion of Local Wildlife Sites where positive conservation management has been or is being implemented (DEFRA 2008). Evidence of such positive management is considered to be a proxy for positive biodiversity outcome and is one of the ways in which local authorities can show that they are taking biodiversity into consideration and help meet their biodiversity duty under Section 40 of the Natural Environment and Rural Communities Act 2006.

To assist with the information gathering process, a section on NI 197 has been incorporated into the standard LERC recording card (see Appendix 2). This records whether there is a management plan for the site, if conservation advice is being followed, or whether the site is entered into the Government's Woodland Grant Scheme or Environmental Stewardship (Higher Level Stewardship (HLS), Entry Level Stewardship (ELS) and Organic Entry Level Stewardship (OEL)). These are considered to indicate

positive conservation management, though it should be noted that inclusion under a farm-scale initiative such as Environmental Stewardship does not necessarily mean that active conservation management is being undertaken on all features/habitats covered by the designation. Information on these aspects was gathered mainly through Magic (Multi-agency Geographical Information for the Countryside www.magic.gov.uk/), which shows those areas of the countryside covered by Woodland Grant and Environmental Stewardship agreements.

3. The Local Wildlife Sites Selection Criteria

Guidelines for the identification and selection of Local Wildlife Sites in Lincolnshire have been produced by the Local Wildlife Sites Panel of the Lincolnshire Biodiversity Partnership (Lincolnshire Biodiversity Partnership, 2008). These guidelines have formed the basis for the evaluation of the sites in the current study and the key aspects relevant to habitats present in North Kesteven are summarised here.

A series of criteria have been developed for nine broad habitat types to enable the identification of sites that are of sufficient quality for designation as Local Wildlife Sites. These are based variously on habitat continuity, area, numbers of indicator species (plant index score) or other notable features

The criteria evaluating the botanical quality of a site are based on a total plant index value for the site or individual habitat areas, calculated as the sum of the scores for each indicator species at a site. In most instances each indicator species has a score of '1', thus the index score is effectively the number of indicator species. The small number of exceptions include:

- Neutral and calcareous grassland – The restharrow *Ononis* and eyebrights *Euphrasia*, where each genus is assigned a score of '1' irrespective of the number of species.
- Acid peatland – The bog moss genus *Sphagnum*, where the genus is assigned a score of '1' irrespective of the number of species.
- Fresh water – Water starworts *Callitriche* where the genus is assigned a score of '1' irrespective of the number of species and the stoneworts *Characeae*, where each species is assigned a score of '1' but only a maximum score of '3' can be achieved.

The broad habitat types recognised by the selection criteria are:

- Woodland and parkland
- Grassland (neutral and calcareous)
- Heathland and acid grassland
- Acid peatland
- Purple moor grass and rush pasture
- Fresh water
- Swamp, marsh and fen
- Coastal and estuarine habitats
- Mosaics

The selection criteria for coastal and estuarine habitats are not relevant to the inland district of North Kesteven and no examples of purple moor grass and rush pasture were found during the current survey.

Woodland and parkland

The guidelines contain six sets of criteria for woodland habitats, which include ancient woodland or ancient woodland sites, parkland or wood pasture, wet woodland and sites of value for their woodland flora. Two of the criteria sets relate to listings within the Ancient Woodland Inventory collated by Natural England and available at <http://www.magic.gov.uk/>. The botanical criteria primarily refer to a suite of woodland plants of value based on lists prepared by Peterken (2000); eighty species are listed in the guidelines, with six of the rarest indicators proposed by Peterken replaced by ferns, the presence of which increases the conservation value of woodlands in Lincolnshire. For the identification of wet woodland reference should be made to both the list of woodland indicators and the list of swamp, marsh and fen indicators. The identification of parkland or wood pasture is based on the presence of a veteran tree within a 1 hectare (ha.) site. These trees can provide valuable microhabitats such as dead wood and holes and have potential for supporting fungi, epiphytic ferns, bryophytes and lichens.

The criteria for woodland sites are:

- WD1: All semi-natural ancient woodland listed in Natural England's Ancient Woodland Inventory.
- WD1a: All plantations on ancient woodland sites listed in Natural England's Ancient Woodland Inventory.
- WD2: Woodland with characteristics of semi-natural ancient woodland that does not appear in the Ancient Woodland Inventory with a minimum species index score of 10.
- WD3: Woodland not covered by other criteria with a minimum species index score of 10.
- WD4: Wet woodland with a minimum species index score of 6 using the list of woodland indicator species and a minimum species index score of 6 using the list of swamp, marsh and fen indicator species.
- WD5 Parkland or wood pasture at least 1 ha. in extent that supports at least one veteran tree.
- WD6 Traditional orchard with 5 or more standard fruit and/or nut trees with crown edges no more than 20 m apart.

Grassland (Neutral and Calcareous)

Two types of grassland habitat are covered by these criteria: neutral grassland and calcareous grassland. Each habitat is defined by both a suite of indicator species and a minimum size. There is some overlap in the listing of indicator species for the two types of grassland, which both contain 56 species or species groups.

The criteria for neutral grassland are:

- NG1: Semi-natural neutral grassland at least 0.1 ha. in extent, or linear areas at least 50 m long, with a minimum species index score of 8 from the list of neutral grassland indicators.

The criteria for calcareous grassland are:

- CG1: Semi-natural neutral grassland at least 0.1 ha. in extent, or linear areas at least 50 m long, with a minimum species index score of 8 from the list of calcareous grassland indicators.

Heathland and acid grassland

Two sets of criteria for heathland and acid grassland habitats are included in the guidelines, based either on the total cover of characteristic heather species or the number of indicator species within a minimum total area. The list of indicator plants includes 57 species.

The criteria for heathland/acid grassland are:

- HE1: Heathland at least 0.1 ha. in extent, or linear areas at least 50 m long, that contains at least 10% heather/bell heather/cross-leaved heath.
- HE2: Other heathland and acid grassland at least 0.1 ha. in extent, or linear areas at least 50 m long, with a minimum species index score of 8

Acid peatland

Two sets of acid peatland criteria are recognised; the characteristic peatland habitat, and any adjacent areas important to maintaining the hydrological conditions of the peatland areas. The identification of peatland is based on the presence of indicator species, with the list including 37 species, while the identification of any important adjacent habitat is based on a judgement of its likely importance to water flows, levels and quality.

The peatland related criteria are:

- AP1: Acid peatland with a minimum species index score of 5.
- AP2: Buffer land where sympathetic management of water levels and water quality is essential for the ecological integrity of adjacent acid peatland.

Purple moor grass and rush pasture

A single type of purple moor grass and rush pasture habitat type is described, based on the numbers of indicator species present, with the list including 37 indicator species.

The criteria for purple moor grass and rush pasture are:

- PMG1: Purple moor grass and rush pasture with a minimum species index score of 8.

Fresh water

The fresh water habitat category includes eight different types divided between springs and flushes and similar areas, rivers and similar areas, blow wells with water upwelling under artesian pressure, and standing waters. The criteria include both botanical features based on the presence of plant indicator species, important assemblages of fish or invertebrates identified by the Community Conservation Index score (CCI) or, in the case of blow wells, all sites meeting the physical definition are included. The Community Conservation Index score is based on an independent classification scheme where species are assigned scores according to their ecological 'quality'. The plant indicator list is applicable to both flowing and standing waters and includes 68 main taxa, with water starworts *Callitriche* species and water-cress *Rorippa* species scoring a maximum of 1 point and stoneworts *Characeae* a maximum of 3 points. Where the fish or invertebrate CCI and the plant indicator index is not sufficient for qualification when considered in isolation their consideration together may be sufficient to satisfy the criteria.

The criteria for flowing waters are as follows:

- Flo1: Springs, flushes, headwaters and winterbournes of high importance for their communities of fish or invertebrate – Community Conservation Index (CCI) of 15 or above.
- Flo2: Rivers, streams, canals, drains and ditches of high importance for their communities of fish or invertebrates – CCI of 15 or above.
- Flo3: Rivers, streams, canals, drains and ditches with a minimum species index score of 10.
- Flo4: Flowing water with a CCI of 10-14, and a minimum index score of 6.
- Flo5: All blow wells.

The criteria for standing waters are as follows:

- Sta1: Standing water of high importance for their communities of fish or invertebrates – Community Conservation Index (CCI) of 15 or above.

- Sta2: Standing water with a minimum species index score of 8.
- Sta3: Standing water with a CCI of 10-14, and a minimum species index score of 5.

Swamp, marsh and fen

Criteria for swamp, marsh or fen are recognised, variously based on size, species dominance, the plant indicator score, and the presence of important invertebrate assemblages defined by the CCI. The list of plant indicator species includes 61 species. Where the fish or invertebrate CCI and the plant indicator index is not sufficient for qualification when considered in isolation their consideration together may be sufficient to satisfy the criteria.

The criteria are:

- Sw1: Wet reedbeds at least 0.5 ha in extent, where the vegetated element comprises at least 90% common reed.
- Sw2: Other swamp, marsh, or fen at least 0.5 ha in extent, with a minimum species index score of 8.
- Sw3: Other swamp, marsh or fen of high importance for their communities of invertebrates – Community Conservation Index (CCI) of 15 or above.
- Sw4: Other swamp, marsh or fen with a CCI of 10-14, and a minimum species index score of 5.

Mosaics

The habitat mosaic category is most relevant where a collection of adjacent habitats fail to satisfy their respective individual criteria but when considered as a single unit they are of importance for their flora and/or fauna.

The mosaic criteria are:

- Mos1: Areas of least 1.0 ha. that support a combination of two or more individual habitats, each with an index score that is no more than three points below the qualifying threshold.
- Mos2: Areas of at least 0.1 ha. that add to the wildlife value of adjacent land qualifying for LWS designation on habitat grounds.
- Mos3: Linear features no more than 500 m long connecting sites of LWS status.
- Mos4: Areas of at least 1.0 ha that support at least one individual habitat with an index score below the qualifying threshold, with a suite of additional features.

A summary list of habitats and their Local Wildlife Site qualifying criteria is presented in Table 1 below.

Table 1: Summary of habitats and their qualifying features

Habitat	Criterion	Summary description	Qualifying feature
Woodland and parkland	WD1	Semi-natural ancient woodland	Listing in Ancient Woodland Inventory
	WD1a	Plantations on ancient woodland sites	Listing in Ancient Woodland Inventory
	WD2	Semi-natural ancient woodland	Not included in Ancient Woodland Inventory but with characteristics of semi-natural ancient woodland and species index score of 10
	WD3	Other woodland	Minimum species index score of 10
	WD4	Wet woodland	Minimum species index score of 6 for woodland plants and species index score of 6 for swamp, marsh and fen plants
	WD5	Parkland or wood pasture	At least 1 ha in extent with a veteran tree
	WD6	Traditional orchard	5 or more standard fruit and/or nut trees with crown edges no more than 20 m apart
Grassland	NG1	Neutral grassland	At least 0.1 ha in extent or 50 m long for linear habitats with a minimum species index score of 8
	CG1	Calcareous grassland	At least 0.1 ha in extent or 50 m long for linear habitats with a minimum species index score of 8
Heathland and acid grassland	HE1	Heathland	At least 0.1 ha in extent or 50 m long for linear habitats with at least 10% cover by heathers
	HE2	Other heathland or acid grassland	At least 0.1 ha or 50 m long for linear habitats with a minimum species index score of 8
Acid peatland	AP1	Acid peatland	Minimum species index score of 5

Habitat	Criterion	Summary description	Qualifying feature
	AP2	Buffer land	Importance to adjacent peatland for protection of hydrological conditions
Purple moor grass and rush pasture	PMG1	Purple moor grass and rush pasture	Minimum species index score of 8
Fresh water	Flo1	Springs, flushes, and headwaters and winterbournes	Fish or invertebrate community conservation score of 15 or above
	Flo2	Rivers, streams, canals, and ditches of high importance for fish or invertebrates	Fish or invertebrate community conservation score of 15 or above
	Flo3	Rivers, streams, canals, and ditches of high importance for plants	Minimum species index score of 10
	Flo4	Flowing water with importance for both plant and fish or invertebrates	Fish or invertebrate assemblages with a community conservation score of 10-14 and minimum plant species index score of 6
	Flo5	Blow wells	All groundwater uprisings under artesian pressure
	Sta1	Standing water of high importance for fish or invertebrates	Fish or invertebrate community conservation score of 15 or above
	Sta2	Standing water of high importance for plants	Minimum plant species index score of 8
	Sta3	Standing water of high importance for plants and fish or invertebrates	Fish or invertebrate assemblages with a community conservation score of 10-14 and minimum plant species index score of 5
Swamp, marsh or fen	Sw1	Wet reedbeds	At least 0.5 ha in extent with at least 90% common reed

Habitat	Criterion	Summary description	Qualifying feature
	Sw2	Swamp, marsh or fen of importance for plants	At least 0.5 ha in extent with a minimum plant species index score of 8
	Sw3	Swamp, marsh or fen of importance to invertebrates	Invertebrate community conservation score of 15 or above
	Sw4	Standing water of high importance for plants and fish or invertebrates	Fish or invertebrate assemblages with a community conservation score of 10-14 and minimum plant species index score of 5
Mosaics	Mos1	Mosaics	At least 0.1 ha in extent with 2 or more habitats with an index score no more than 3 below individual qualifying thresholds
	Mos2	Mosaics	At least 0.1 ha in extent that add value to adjacent land meeting qualifying for LWS designation on habitat criteria
	Mos3	Mosaics	Linear features less than 500 m long connecting sites of LWS status
	Mos4	Mosaics	At least 1.0 ha in extent supporting at least one habitat below the relevant index score threshold but with a suite of additional features

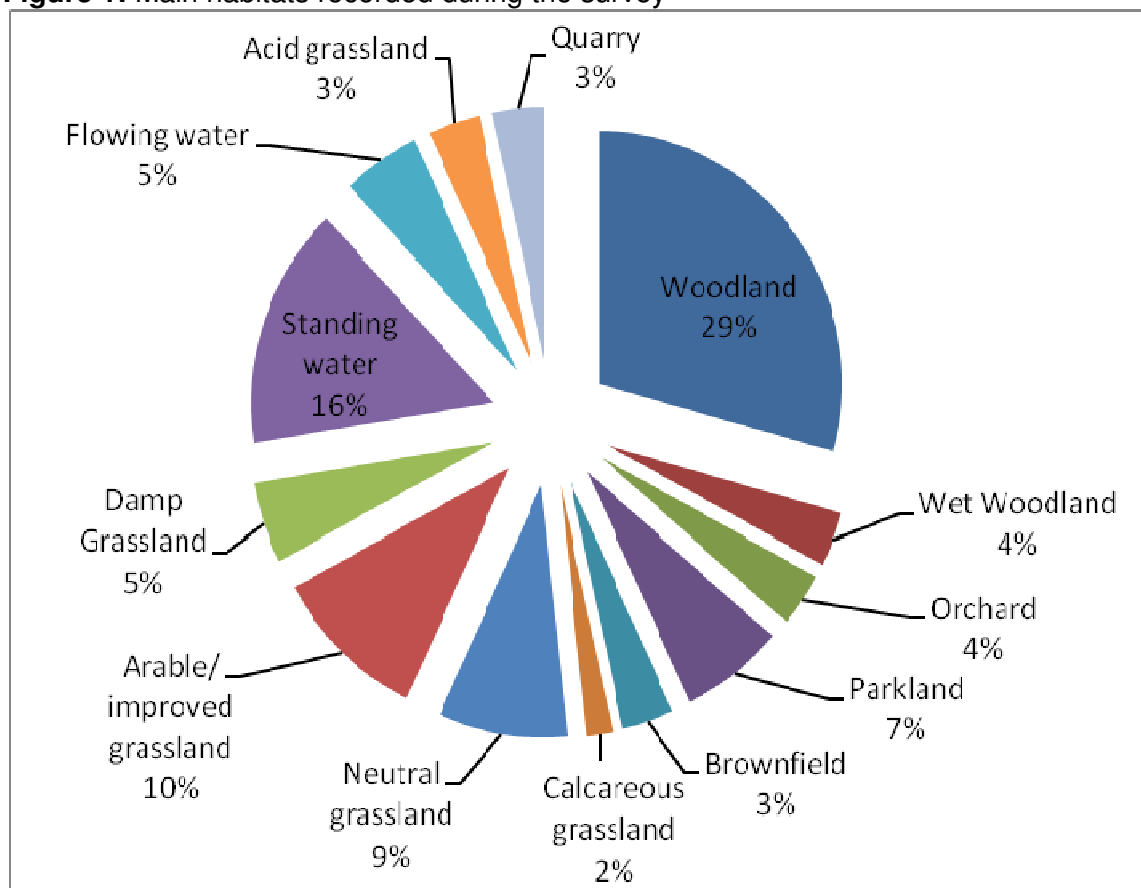
4. Results

Of the 75 sites scheduled for survey in 2010, 47 were surveyed in full and further seven sites were only partially surveyed (see Table 4). Of the seven sites that were only partially surveyed it was felt that six were surveyed in sufficient detail to allow an assessment to be made and one; Compartment 25, Whisby Pits Complex, was excluded from the analysis all together as the only accessible area included no natural habitats. It was not possible to survey the remaining 21 sites due to access being denied and as such they are not considered in the following analysis. Thus a total of 53 sites were surveyed during the 2010 season.

The full results of the survey are presented in Appendix 4 which includes a site record sheet, plant species list, site summary and boundary map for each of the sites surveyed. Some of the larger sites were split into two or more sub-units and in these cases each sub-unit surveyed has its own record sheet and plant species list.

The breakdown of main habitat types across the 54 sites surveyed is shown in Figure 1 (Note: Five of the sites had two main habitat types and each type is listed separately in the graph below).

Figure 1: Main habitats recorded during the survey



In addition to the main habitat(s), most sites also supported one or more subsidiary habitat (e.g. ponds or grassy rides within a woodland, or scrub and ruderal habitats within a predominantly grassland site). These were identified where appropriate on the record sheet.

Of the woodland sites, none were listed in Natural England's Ancient Woodland Inventory; however two sites were considered to contain ancient woodland (i.e. woodland that has existed since at least 1600 AD) as they included habitats with ancient woodland characteristics. Sycamore *Acer pseudoplatanus*, cherry laurel *Prunus laurocerasus* and snowberry *Symphoricarpos albus* were identified as potential problem species in a number of the secondary woodlands and rhododendron *Rhododendron ponticum* was invasive in some of the more acid sites (e.g. Butt Lane Pit). Some sites under the stewardship of certain conservation organisations are in an unfavourable and declining condition (e.g. High Wood, North Rauceby which suffers from mismanagement; a management plan has been designed for this site but is apparently not followed).

Of the grassland habitats, neutral grassland was the most widespread. Calcareous grassland was also frequently encountered, though often as an additional habitat. The quality of grasslands varied greatly, with many having been agriculturally improved to some extent over the intervening years since the previous surveys used for their designation as SNCIs. As such the conservation value of these sites is lower than it might have previously been (e.g. South Hykeham Meadows, most of which are now under arable cultivation and improved pasture with areas of unimproved grassland greatly reduced). Overgrazing was also apparent in some cases (e.g. Blankney Dyke Hayfield), whereas on other sites cutting/grazing and scrub removal are urgently needed to preserve fragments of grassland habitat (e.g. North Hykeham Hay Meadow). Well managed grassland sites were rather rare and where they occurred it was usually by accident rather than by design (e.g. at Dorrington Churchyard where a good grassland flora survives despite the disturbance and year round grass cutting), with few sites being managed specifically for conservation.

Some of the grassland sites, although they appear to have lost interest since previous surveys, could be restored with significant changes to their management regimes. For example Duke's Covert is merely an overgrown stand of scrub on what was once a calcareous grassland site. Some very good calcareous grassland flora remains on its edge adjacent to the Copper Hill Site of Special Scientific Interest (SSSI); clearance and maintenance as unimproved grassland would be highly beneficial. Other grassland sites are in a good but declining condition and could be maintained as wildlife assets with minimal input, but will otherwise soon be lost. North Hykeham Hayfield, for example, is

probably one of the best remaining neutral grassland sites in the region but is at risk of losing much of its interest through lack of management and the subsequent invasion of scrub since the cessation of its use as a hay field. All concerned parties should make efforts to support landowners in enhancing those sites which require enhancement work.

Heathland and acid grassland are rare habitats in North Kesteven, being found only as subsidiary habitats within other habitat types in the current survey. Some of the woodlands supported significant heath elements and scattered heather *Calluna vulgaris*, but rarely of sufficient extent to be classified as true heathland. Of particular note was Cinder Plot, which is largely coniferous plantation on an old heathland site: as well as an area of ancient woodland it retains some heathland/acid grassland interest along its rides and in clearings, although the best area of regenerating heathland had been planted with young conifers shortly before being surveyed. The nearby Gilbert's Plot also has some interest in this respect and sites in the Whisby Pits Complex contain elements of acid grassland habitats. These sites have great potential for the restoration of heathland/acid grassland, requiring only felling and low-intensity grazing to restore a significant natural asset. No acid peatland habitats were encountered.

Freshwater habitats occurred in various forms, from large open water bodies on former gravel extraction sites to narrow drains and the magnificent Metherringham Delph, which has a rich remnant fen flora. Several old borrow pits were surveyed which present a full spectrum of wildlife value (from the stagnant Branston Booths Pits at the lower end to Ewerby Pond and its charming fen remnants at the better end). Beckingham Ranges supports a good diversity of aquatic plant species but could be greatly improved in this respect by restoring the ditches which cross its areas of floodplain grazing marsh. The majority of waterbodies surveyed are of conservation interest, though few are actively managed for nature conservation. Many are managed primarily for fishing.

Swamp, marsh and fen habitats occurred occasionally as main habitats but were also common as subsidiary habitats in conjunction with, for example, freshwater, neutral grassland or woodland. Wherever they occurred they added to the overall conservation value of the site.

Site access to carry out surveys was refused for an unexpectedly high proportion of sites this year which meant that 21 sites could not be surveyed at all. A further seven sites could only be partially surveyed for example where several landowners were involved and not all of them could be contacted or would grant access. Of the 21 sites for which access was refused nine are woodlands, six are parkland sites, four are grassland, one is standing water and the final one is now the site of a housing development with small

areas of woodland and grassland retained. Reasons for refusal varied; however overall, owners of the parkland sites were uncomfortable with having the land contiguous with their private dwellings surveyed and potentially designated as they felt it was an intrusion upon their privacy. Other reasons for landowners refusing access to the site focused on the perceived costs to the tax payer, inconvenience and lack of benefit to themselves, concerns over the use of the data (e.g. the availability of data to the public and fears that it may be used to enforce management regimes) and the feeling that the surveys were unnecessary as owners would still need to pay for ecology surveys should they wish to develop any of the land in the future.

Although none of the sites for which access was refused were surveyed, aerial photography provides an indication of which sites are still present. Areas of intact parkland can be readily identified from aerial photography and as the LWS guidelines for parkland are based on area and the presence of veteran trees, it is likely that all of the parkland sites that were not surveyed would qualify under the parkland criterion and could be designated as such if access were permitted in the future. Several of these parkland sites also support other features of interest such as extensive areas of ridge-and-furrow grassland. It is likely that the intact woodland sites have changed little since the initial surveys were carried out and as such any that were previously of interest are also likely to have qualified as LWS if survey was permitted. The condition of the four refused grassland sites and the single refused aquatic site is likely to be more variable however as their status cannot be so readily assessed without a site visit. Information regarding the previous wildlife interest of the Rauceby Hospital site was not available; however the new housing estate built on the site within the last few years has destroyed much of the grassland habitat and means that the site would be unlikely to qualify as a LWS.

Constraints

In most cases, the survey was confined to a single visit. The plant lists should therefore not be treated as comprehensive, but rather as a representative list of species evident at the time of survey. Timing of the survey will be a particular constraint for species that flower early in the season and then disappear (e.g. some woodland ground flora species).

Obtaining access permission for some sites proved to be a lengthy process and as a result some sites could not be surveyed until October or November. This is outside the normal survey season and this should be borne in mind when assessing the results for these sites. Furthermore, a high number of landowners refused permission to access the sites in order to carry out surveys which meant that 21 sites could not be surveyed at all

and a further seven sites could only be partially surveyed. It is therefore not possible to assess these sites against the LWS criteria.

Surveys of some of the grassland sites were constrained by hay cuts having recently taken place or the sward being closely grazed.

Terrain and vegetation proved a constraint in a few cases, particularly on one site, much of which was bordered by waterways and a railway line and was therefore partially constrained by Network Rail requirements for a safe system of working. As such part of the site had to be viewed from adjacent land.

Noteworthy species

A number of other noteworthy species were recorded during the survey and these are listed in Table 2 below. Of these, the most significant are the records of purple milk-vetch *Astragalus danicus*, a plant that is listed as Endangered in the latest vascular plant red data list for Great Britain (Cheffings & Farrell 2005) and field woundwort *Stachys arvensis* which is listed as Near Threatened. Violet thorn-apple *Datura stramonium* var *chalybaea* is an uncommon and recent coloniser. All other species listed here are listed by JNCC as Least Concern.

Table 2: Noteworthy plant species

Common name	Scientific name	Site	Grid reference
Field Woundwort	<i>Stachys arvensis</i>	Blankney Carr Dyke Hayfield	TF 116 617
Flowering Rush	<i>Butomus umbellatus</i>	Metherringham Delph Beckingham Ranges	TF 108 622 SK 879 557
Great Water Dock	<i>Rumex hydrolapathum</i>	Metherringham Delph	TF 108 622
Golden Dock	<i>Rumex maritimus</i>	Bardney Settling Ponds	TF 115 680
Heather	<i>Calluna vulgaris</i>	Cinder Plot Gilbert's Plot	SK 913 686 SK 915 699
Violet Thorn-apple	<i>Datura stramonium</i> var. <i>chalybaea</i>	Blankney Carr Dyke Hayfield	TF 116 617
Pepper Saxifrage	<i>Silau silaus</i>	North Hykeham Hayfield Beckingham Ranges	SK 953 650 SK 875 554
Ox-eye Daisy (possible local var.)	<i>Leucanthemum vulgare</i>	North Hykeham Hayfield	SK 953 650
Small Pondweed	<i>Potamogeton pusillus</i>	Beckingham Ranges	SK 876 547
Purple Milk-vetch	<i>Astragalus danicus</i>	Dukes Covert	SK 979 424
Fungus	<i>Lactarius semisanguifluus</i>	Rauceby Park	TF 026 457
Fungus	<i>Suillus collinitus</i>	Rauceby Park	TF 026 457

Invasive non-native species

Two invasive non-native plant species were recorded during these surveys, each in discrete areas on sites: New Zealand pigmyweed *Crassula helmsii* was found in a small pond on Canwick Golf Course and Japanese knotweed *Fallopia japonica* was recorded as small stands at Leadenham Park, Gilbert's plot and Whisby Domestic Refuse Tip.

National Indicator 197

Of the 54 sites assessed, a total of 19 sites (35.85%) or parts thereof met one or more NI 197 indicator, as detailed in Table 3.

Table 3: Sites satisfying NI 197

Site Name	NI 197 Indicator					
	Management Plan	Advice being followed	Woodland Grant Scheme	HLS	ELS	OEL
Beckingham Ranges					x	
Killbuck Plantation					x	
Duke's Covert				x		
Mr Neville's Pits West, Whisby Pits Complex				x		
Compartment 14, Whisby Pits Complex				x		
Cinder Plot				x		
Old Decoy					x	
Buck Springs				x		
Gilbert's Plot				x		
Aunsby Pasture					x	
Greylees Pits						x
Rauceby Park					x	
Manor House Paddock					x	
High Wood, North Rauceby	x					
Blankney Dyke					x	
The Sprites Fish Nursery					x	
Carr Dyke Bank North-West				x		
Carr Dyke Bank South-East				x		
Blankney Park					x	

5. Recommendations

Of the total of 75 sites scheduled for survey during 2010, 21 could not be assessed due to access refusals. (see Table 4). It is therefore recommended that consideration of these sites is deferred until such a time as the landowner's permission can be obtained and a full survey can be carried out.

Table 4: Sites that could not be assessed

Grid Square	Grid reference	Site Name
SK85	SK862597	High Spring Wood
SK85	SK865597	Low Spring Wood
SK86	SK887604	Norton Low Wood
SK86	SK861607	Hill Holt Pasture
SK96	SK940646	South Hykeham Meadows 1
SK96	SK971607	Coleby Hall
SK96	SK967618	Harmston Park
SK96	SK942646	South Hykeham Meadows 3
TF03	TF019399	Culverthorpe Lake
TF03	TF025384	Dembleby Thorns
TF04	TF021401	Culverthorpe Park
TF04	TF061401	Aswarby Park
TF04	TF083423	Field off Mareham Lane
TF04	TF085424	Burton Plantation (North)
TF04	TF038438	Rauceby Hospital
TF05	TF079563	Willow Spinney
TF05	TF063535	Bloxholm Hall Woods
TF14	TF114453	Asgarby Park
TF14	TF101493	Leasingham Wood
TF15	TF105579	Thorpe Tilney Woods
TF15	TF103546	Digby Wood

A further six sites were only partially surveyed; however assessment of these site was made on the basis of the area surveyed and modifications to the site boundaries have been made to reflect this. In addition to this a seventh site, Compartment 25, Whisby Pits Complex, was also surveyed in part; however only a very small area of this site, (mainly comprising buildings and hardstanding) was surveyed and the majority of the remaining land is allocated for construction. As such no assessment of this site was possible. Comments are included in Table 5 indicating why a full survey could not be completed

and whether or not it is considered necessary to carry out additional surveys of those areas of the site that were inaccessible.

Table 5: Sites that could not be surveyed in full

Grid Square	Site Name	Comment
SK86	North Scarle Gravel Pits	A small section in the south-western corner of the site is under separate ownership and the owner could not be contacted.
SK96	Domestic Refuse Tip, Whisby Pits Complex (comp 29)	23.5ha. of site is allocated for business use. It is recommended that the boundary is amended to exclude this area. An area to the south of the site which is under the same ownership was also surveyed and it is recommended that the boundaries are amended to reflect ownership.
SK96	Whisby Garden Centre & Grassland, Whisby Pits Complex (Compartment 24)	0.76 ha of site is allocated for business use and access was refused.
SK96	Compartment 25, Whisby Pits Complex	Part of the site to the east of the road is allocated for business use and access was refused. The remainder of the site (c. 4.6ha) is under the same ownership as Compartment 24 and was therefore included in the survey of this site.
SK96	South Hykeham Meadows 2	The site is owned by two landowners one of whom refused access. It is recommended that the boundaries of South Hykeham Meadows, 2 and 3 are amended to reflect ownership boundaries.
SK96	River Witham	This site is very large and few owners could be located. It is recommended that the site is divided into separate lengths according to land ownership and that all areas not yet assessed are subject to further survey.
SK97	Fosdyke Fen	This site was primarily surveyed from adjacent land; however the main interest was apparently within the accessible area and as such it is not considered necessary for any further surveys to be carried out here.

Of the 54 sites that were assessed in 2010, a total of 23 (43.39%) were evaluated as satisfying the requirements for Local Wildlife Sites on one or more criteria, including main and additional habitats. These sites are therefore recommended for designation as Local Wildlife Sites. This includes the site recommended for further surveys following the 2008-2009 surveys (Beckingham Ranges) for which additional detail about the species distribution across the site was required as well as the site recommended for survey by the Environment Agency (Ruskington Pit).

A list of the sites recommended for designation as Local Wildlife Sites and the main habitat criteria under which they qualify appears in Table 6 below.

Table 6: Sites recommended for designation as Local Wildlife Sites

Grid Square	Site Name	Habitat Qualification
SK85	Beckingham Ranges	NG1, CG1, HE2, Flo2, Sw2
SK86	Butt Lane Pit	Mos1
SK94	Duke's Covert	CG1, NG1
SK96	River Witham	Mos1
SK96	Domestic Refuse Tip, Whisby Pits Complex (comp 29)	Mos1
SK96	Mr Nevile's Pits West, Whisby Pits Complex	Mos4
SK96	North Hykeham Hayfield	NG1
SK96	Compartment 14, Whisby Pits Complex	NG1, HE2, Sw2
SK96	Cinder Plot	WD2, Mos1
SK96	South Hykeham Meadows 2	WD6
SK97	Old Decoy	Sw2, Mos1
SK97	Canwick Park Golf Course	Sta2, Sw2
TF04	Rauceby Park	WD5
TF04	Manor House Paddock	WD6
TF05	Dorrington Churchyard	CG1, NG1
TF06	Metheringham Barff Woodland	WD2
TF06	Blankney Park	WD5
TF06	Nocton Old Orchard	WD6
TF14	Ewerby Pond	Mos1
TF15	The Sprites Fish Nursery	Mos1, Sta3
TF15	Ruskington Pit	Sta2
TF16	Bardney Settling Ponds	Mos4
TF16	Metheringham Delph	Sta2

By main qualifying habitat, these break down as follows (Table 7):

Table 7: Main qualifying habitat

Broad habitat	Habitat qualification	No. of sites qualifying *	% of all sites assessed (53)
Woodland	WD2	2	3.77
Parkland	WD5	2	3.77
Orchard	WD6	3	5.66
Neutral grassland	NG1	3 (2)	5.66
Calcareous grassland	CG1	2 (1)	3.77
Heathland/ Acid Grassland	HE2	0 (2)	0
Flowing water	Flo3	0 (1)	0
Standing water	Sta2/3	3 (1)	5.66
Swamp, marsh & fen	Sw2	1 (3)	1.89
Mosaic	Mos1/2/4	7 (2)	13.21
Total		23	43.4

* Numbers in brackets indicate the number of sites with additional habitats qualifying under the criteria

Of the 23 sites qualifying as LWS, 9 (39.13%) satisfy more than one criterion due to the presence of additional habitat types within the site. A list of all of the sites, indicating the criteria under which they qualify and giving the indicator species totals for each, appears in Appendix 3.

A total of 31 sites did not meet any of the Local Wildlife Sites criteria on the basis of the results of the current survey (Table 8). Of these, it is considered that three sites – one grassland and two woodland - might qualify if additional surveys were carried out at a more appropriate time of year and a fourth site, currently an active quarry, may qualify in the future once quarrying has ceased. A fifth site met the botanical criteria but was not sufficiently large to qualify, as such it may be beneficial to assess more of the surrounding habitat at an appropriate time of year and consider extending the site to include adjacent land thereby allowing it to qualify. These five sites are listed in Table 9 and it is recommended that additional survey visits are made to each of these sites before making a final assessment as to whether or not they merit designation as Local Wildlife Sites.

Table 8: Sites which do not meet LWS criteria on the basis of the current survey

Grid square	Site name
SK86	Thurlby (NK) Road Verge
SK86	North Scarle Gravel Pits
SK86	Killbuck Plantation
SK95	Leadenham Park
SK95	Leadenham Quarry
SK96	South Hykeham Meadows 8
SK96	South Hykeham Meadows 9
SK96	Whisby Garden Centre and Grassland, Whisby Pits Complex (comp 24)
SK96	Harmston Quarry
SK96	Compartment 25, Whisby Pits Complex
SK97	Fosdyke Fen
SK97	Gilbert's Plot
SK97	Buck Springs
TF03	Aunsby Pasture
TF03	Willow Holt & Hillside Plantation
TF04	Greylees Pits
TF04	High Wood, North Rauceby
TF05	Cranwell Pine Plantation
TF05	Digby Gorse
TF05	Dorrington Osiers
TF06	Blankney Dyke
TF06	Branston Booth Pits
TF06	Beech Avenue and Becks Wood
TF06	Barff Holt
TF06	Fox Covert, Metherringham
TF15	Pumping Station, Thorpe Tilney Dales
TF15	Chapel Hill Osier Bed
TF16	Blankney Car Dyke Hayfield
TF16	Carr Dyke Bank North-West
TF16	Carr Dyke Bank South-East
TF16	Woods Close

Table 9: Sites which merit additional survey prior to a final decision being made

Grid square	Site name	Survey interest
SK96	Harmston Quarry	May qualify once quarrying of the site has ceased.
TF06	Blankney Dyke	Currently too small to qualify. May be possible to extend the site boundaries to allow this site to meet the criteria.
TF16	Blankney Car Dyke Hayfield	Would merit survey earlier in the year to assess the spring flora.
TF16	Carr Dyke Bank North-West	Would merit survey earlier in the year to assess the spring flora.
TF16	Carr Dyke Bank South-East	Would merit survey earlier in the year to assess the spring flora.

Several sites were deemed to merit additional survey despite qualifying under the LWS criteria (Table 10), i.e. they are likely to be of significant additional interest. Some of these were surveyed at a sub-optimal time for recording the site's flora due to access restrictions. Others were surveyed at optimal times for the sites flora but were deemed to be of particular value to other biological groups (i.e. birds, invertebrates or fungi). It is therefore suggested that, where possible, further surveys are carried out on these sites to more fully determine their wildlife value.

Table 10: Sites satisfying LWS criteria but which may merit additional survey

Grid square	Site name	Survey interest
SK85	Beckingham Ranges	Fungi, Invertebrates
SK96	Cinder Plot	Invertebrates, Spring flora
SK96	North Hykeham Hayfield	Spring / summer flora
TF05	Dorrington Churchyard	Fungi
TF16	Metheringham Delph	Invertebrates
TF06	Metheringham Barff Woodland	Spring flora

Of the 23 sites which are recommended for designation as Local Wildlife Sites, four were considered to require boundary modifications. This was to exclude land which no longer merited inclusion, either because it was built on or had otherwise lost its ecological value. The sites where boundary changes are recommended are listed in Table 11 and the relevant modifications shown on the site plans in Appendix 4.

Table 11: Candidate Local Wildlife Sites requiring boundary modifications

Grid square	Site name	Proposed modification
SK85	Beckingham Ranges	Boundary modification to exclude areas of the site that are not within the MOD ranges.
SK86	Butt Lane Pit	Boundary extended to include adjacent woodland.
SK96	Domestic Refuse Tip, Whisby Pits Complex (comp 29)	Boundary modification to exclude areas that fall within the proposed Teal Park Development and extension to include areas under the same ownership formerly surveyed separately.
SK96	South Hykeham Meadows 2	Boundary modification to exclude the eastern section of the site.

6. Conclusion

An ecological survey of 53 medium priority sites in North Kesteven has been carried out the results used to identify those that potentially qualify for designation as Local Wildlife Sites.

An additional 21 sites were not surveyed during 2010 due to access permission being denied and a further site, Compartment 25, Whisby Pits Complex, was not surveyed in sufficient detail to enable an assessment of its wildlife value to be made.

The following broad habitats, as defined in the Local Wildlife Site selection guidelines (Lincolnshire Biodiversity Partnership 2008) were recorded during the survey:

- Woodland
- Parkland
- Orchard
- Neutral grassland
- Calcareous grassland
- Freshwater
- Damp grassland & fen
- Arable/improved grassland
- Brownfield/destroyed

Of the sites 53 sites assessed some 23 sites (43.39%) were evaluated as meeting one or more of the Local Wildlife Site selection criteria. Of these: seven qualified under woodland criteria (WD2, WD5, WD6); three under neutral grassland (NG1); two under calcareous grassland (CG1); three under standing water (Sta2); one under swamp, marsh and fen (Sw2); and seven under habitat mosaics (Mos1, Mos2, Mos4).

It is recommended that these 23 sites be given consideration by the Local Wildlife Sites Panel for designation as Local Wildlife Sites and subsequent incorporation into the Local Development Framework for North Kesteven. It is recommended that further survey work is carried out on an additional five sites before making a final assessment as to whether or not they merit designation as Local Wildlife Sites.

7. References

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Lincolnshire Biodiversity Partnership (2008) *Local Wildlife Sites: Guidelines for the Identification & Selection in the Historic County of Lincolnshire*. Lincolnshire Biodiversity Partnership, Horncastle.

Joint Nature Conservation Committee (2010) *Handbook for Phase 1 Habitat Survey: A Technique for Environmental Audit*. Joint Nature Conservation Committee, Peterborough.

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Appendix 1: Project Brief

NORTH KESTEVEN
LOCAL WILDLIFE SITES REVIEW
PROJECT BRIEF



11 March 2008

North Kesteven District Council
District Council Offices
Kesteven Street
Sleaford
Lincolnshire
NG34 7EF

Project Brief

North Kesteven Local Wildlife Sites Review

Background

1. North Kesteven District Council is in the early stages of preparing a Local Development Framework (LDF) for the District. It is important that the policies in the LDF are drawn up on a sound basis to truly represent the unique needs and characteristics of the District. To do this, the Council needs robust evidence on which to base its policies and proposals and to monitor the effect of the LDF over time. The Government's Planning Policy Statement 12 (Local Development Frameworks) (PPS12) reinforces the need for a robust evidence base.
2. Planning Policy Statement 9 (Biodiversity and Geological Conservation) (PPS9) and its companion guide are the primary national policy documents for biodiversity and planning. One of the key principles of PPS9 is that development plans should be based upon up-to-date information about the environmental characteristics of their area.
3. Locally, the Lincolnshire Biodiversity Action Plan (BAP) is a key document. The Lincolnshire BAP includes Action Plans and two of the key actions in respect of Local Wildlife sites are to resurvey all existing Sites of Nature Conservation Importance (SNCIs) to assess them against Local Wildlife Site criteria by 2010; and to identify and survey potential new Local Wildlife Sites by 2015. This is also a Local Area Agreement (LAA) target.
4. At a national level, DEFRA has produced "Local Sites: Guidance on their Identification, Protection and Management" in 2006 and in July 2006 "Local Wildlife Sites: Guidelines for their Identification and Selection in the Historic County of Lincolnshire", was published by the Wildlife Sites Review Group (a sub-group of the Lincolnshire BAP Partnership).

The Project Brief

5. North Kesteven is one of seven districts in Lincolnshire and is a predominantly rural area in the centre of the County. It covers an area of 92,000 hectares or 356 square miles, of which 90% is classified as agricultural land.

6. In the North Kesteven Local Plan, there are 44 sites designated as County Wildlife Sites, (essentially the same as SNCIs), of which two are Local Nature Reserves. Also within the Local Plan are seven sites designated as Sites of Special Scientific Interest (SSSIs). These sites have been incorporated into the adopted North Kesteven Local Plan 2007.
7. The Lincolnshire Wildlife Trust has produced a list of existing and candidate wildlife sites within the district. In total, there are 258 existing and candidate wildlife sites identified by the Lincolnshire Wildlife Trust within North Kesteven. Excluding SSSIs, there are a total of 251 sites to be surveyed. A full list of all sites can be found in Appendix A, including Regionally Important Geological and Geomorphological sites (RIGS) and Protected Road Verges (PRV).
8. The Council is seeking a review of all wildlife sites identified in Appendix A with the exception of SSSIs. The survey is expected to provide the underlying baseline evidence of the type, range, scarcity and fragility of habitats in North Kesteven and is to include the review of existing and candidate wildlife sites.
9. The consultants will be required to lead and undertake a review of the status and integrity of those designated and candidate wildlife sites in North Kesteven that are not protected at a higher level. The consultants should:
 - Carry out a “Phase 1” habitat survey of these sites and their immediate environs. Using the selection criteria set out in “Local Wildlife Sites: Guidelines for their Identification and Selection in the Historic County of Lincolnshire” 2006, (see link in paragraph 4 above), the consultant should assess any boundary changes needed, and identify and provide evidence for those sites which continue to be of sufficient wildlife value to be designated as Local Wildlife Sites.
 - To this end, the consultants shall provide, for each site, a schedule with accompanying updated or amended site plan, setting out the species, habitats or features judged to be of interest to provide the data required by the Wildlife Sites Review Group. The Lincolnshire Guide contains a methodology that the consultants would be expected to follow. However, the consultants are expected to provide a detailed methodology of how this will be carried out as part of the tender submission.

- Data should be provided in a suitable format for the Lincolnshire Environmental Records Centre and the format should be agreed with the Manager of the Records Centre.
10. The consultant will be responsible for identifying and obtaining the consent of landowners/occupiers to access the sites for survey purposes and for informing the landowners/occupiers of the outcome of the surveys.

Interim and Final Report

11. Given the length of time the study is likely to take, the Council wishes the consultant to quote separately for the cost of producing an interim report after the first year of the study. The interim report should follow the format of the main report, the requirements of which are outlined below. This to enable the Council to review the progress of the work undertaken in the first year, that is by the end of 2008.
12. The consultant will be responsible for preparing a final report and appendices, setting out all the field data and other data collected by the study and the recommendation regarding the status and future designation of each site, existing and candidate. The evidence contained in the report will need to be clear, transparent and robust enough to survive the LDF Public Examination process. It is therefore important that the survey results, in terms of descriptions and species lists, should be accompanied by coloured plans on an ordnance survey base with notes for each site. Each site assessment should conclude with a clear recommendation to the Council as to whether the site should be designated as a Local Wildlife Site for the emerging North Kesteven LDF.
13. The final report shall be accompanied by an Ordnance Survey based plan in digital mapping format compatible with the GIS systems of the Council (Map Info) and the Lincolnshire Environmental Records Centre.
14. The final end date is the date by which a finished report, appendices and digital maps must be provided to the Council in electronic format (PDF/Map Info) and two bound paper copies. However, it will be necessary for an electronic draft of the Report/Appendices to have been provided to the Council at least three working weeks prior to the proposed end date, in order for the Council's officers to consider the draft and provide any further information and feedback to the consultant prior to one week before the proposed end date.

15. The field data and other relevant data, in both paper and digital format, will need to be made available to North Kesteven District Council, Lincolnshire County Council and the Lincolnshire Environmental Records Centre.
16. The final report should be delivered to the Council by 30th November 2009. This enables the information to be used for the ongoing work on the Local Development Framework and in determining applications for planning permission.

Examination

17. The Council requires the consultant to lead and undertake the biodiversity study as a whole, which must be prepared with a view to it providing a sound basis for the consideration of the Local Development Framework at Examination. At this stage the Council does not envisage asking the consultant to appear at any Examination, but the possibility of this must be taken into account in preparing the report and appendices. If attendance at the examination should be required, the fee will be negotiated at a daily/hourly rate.

Submission to the Wildlife Sites Review Group

18. The Council requires that the consultant will provide sufficient evidence to the Wildlife Sites Review Group to support its recommendations to either promote sites as Local Wildlife Sites or to remove their designated or candidate status. At this stage, it is not anticipated that the consultant will be required to attend the Wildlife Sites Review Group to present evidence but the possibility of this must be taken into account in preparing the report and appendices. If attendance at the above meeting should be required, the fee will be negotiated at a daily/hourly rate.

The Tender

19. The charges set out in the tender must include the consultant's time involved in collating existing information; collecting landowners details and consents, visiting the sites and carrying out survey work; drawing up the schedules for the sites; supplying this information to the landowners/occupiers of the sites; preparing the final report and appendices and submitting an electronic copy and two paper copies of the final report and appendices to North Kesteven District Council, and the Lincolnshire County Council and the Lincolnshire Environmental Records Centre (this includes the printing cost for the paper copies of the final Report and appendices). The charges must also include administration and other incidental costs.

20. The consultant must have a method of quality control to ensure that the work undertaken and the output produced meet the client's requirements and meet statutory and good practice guidance so as to ensure that any LDF policies produced as a result of the survey are sound. Tenders will need to give a brief outline of how quality control will be addressed by the consultant.
21. If at any stage, the Council were to consider that the consultant were not meeting the Council's requirements then the matter must be the subject of a meeting between the Council and the consultant in order to seek to resolve the matter. If the matter could not be resolved to the agreement of both parties, or if the problem were to re-occur then the Council would be entitled to terminate the commission.
22. The consultant must ensure that they do not have any other contracts where there would be a conflict of interest. In addition, the appointed consultants must safeguard the confidentiality of any data supplied for the purposes of the study.
23. The tender should include any cost increase likely in the second year of the study.
24. The Council must receive tenders no later than midday on the 2nd April 2008.

Appendix 2: Recording Forms

Site Survey Form

Site name	Grid reference	Lincolnshire Environmental Records Centre
Site sub-division	Date	
Recorder(s)	Time on site	
	hrs mins	

Habitats (M = main, A = additional)

Ancient Woodland – mature / regrowth	
Semi-natural Woodland – mature / young	
Wet Woodland	
Native plantation – on ancient / new	
Non-native Plantation – on ancient / new	
Parkland / Wood-pasture / Orchard	
Scrub – scattered / dense	
Species-rich Hedgerows – ancient / new	
Conservation-managed Arable Field Margins	
Neutral Grassland – unimp. / semi-imp.	
Calcareous Grassland – unimp. / semi-imp.	
Acid Grassland – unimp. / semi-imp.	
Purple Moor Grass and Rush Pasture	
Heathland	

Acid Peatland	
Bracken	
River / Canal / Drain / Ditch	
Spring / Flush	
Blow Well / Chalk Stream	
Pond / Lake / Reservoir	
Reedbed	
Marsh / Fen	
Grazing Marsh – coastal / inland	
Sand Dune / Saline Lagoon	
Saltmarsh / Mudflat	
Brownfield Mosaic / Ruderal	
Imp. Grassland / Coarse Grassland	
Arable / Active Quarry or Pit	

Constraints

Early survey	
Late survey	
Short visit	
Weather	
Vegetation cut	
Terrain / Vegetation	
Public use / Dogs	
Livestock / Game	
NI 197	
Management Plan	
Advice being followed	
EWGS / WGS	
HLS / ELS / OELS	

Site description (inc. fauna; rare/notable/most frequent spp (with grid refs.); etc – note if supplementary sheets attached)

Additional features

Veteran / pollarded trees	
Planted specimen trees	
Scattered non-planted trees	
Standing / fallen dead wood	
Sap runs on / holes in trees	
Abundant nectar sources	
Structural diversity	

Tussocky vegetation	
Anthills	
Bare ground	
Rock outcrops	
Steep slopes	
South-facing slopes	
Ridge and furrow	

Earthworks / hummocky ground	
Areas with frequent / prolonged flooding	
Seasonally wet / damp areas	
Dry ditches – shallow / deep	
Species-poor / patchy hedgerows	
Open access / ROW / permissive path	
Educational potential	

Management

Appropriate management	
Inappropriate management	
Scrub encroachment	
Scrub removal	
Coppicing / selective felling	
Re-planting – native / non-native	
Ride mowing	
Non-intervention	

No grazing	
Grazing by cattle	
Grazing by sheep	
Grazing by horses	
Grazing by rabbits	
Other grazing	
Poaching	
Controlled burning	

Silage / hay	
Mowing and non-removal	
Frequent short mowing	
Fertiliser / pesticide / herbicide use	
Excessive drainage	
Off-road vehicle damage	
Fly tipping / pollution / fires	
Invasive species	

BSBI Recording Form

Grid Reference										The Name of the Locality										Route Map																													
Tetrad																																																	
Vice County										Habitat																																							
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Appendix 3: Summary of Results

North Kesteven Candidate Local Wildlife Sites 2010

SNCI Site of Nature Conservation Importance
CWS County Wildlife Site
LWT Local Wildlife Trust Reserve

Site name	Grid reference	Area	Qualifying threshold	10 WD2/3	6+8 WD4	Parkland WD5	Orchard WD6	8	8	8	5 AP1	10 Flo3	8 Sw2	Mosaic Most 1-4	Additional features	Management (appropriate / inappropriate)
Beckingham Ranges	SK678554		SNCI, CWS	3	3+18			30	14	8	2	21	18		Veteran / pollarded trees, Standing / fallen dead wood, Structural diversity, Tussocky vegetation, Anthills, South-facing slopes, Ridge and furrow, Earthworks / hummocky ground, Areas with frequent / prolonged flooding, Seasonally wet / damp areas, Dry ditches – shallow, Scrub removal, Grazing by cattle, Grazing by horses.	✓
High Spring Wood	SK662597	2.58	SNCI					Access Refused								
Low Spring Wood	SK665597	1.57	SNCI					Access Refused								
SK66 North Scarle Gravel Pits	SK647686	32.18	SNCI		0+4			1	0	5	0	4	3		Grazing by rabbits, pollution	
Hill Holt Pasture	SK661607	2.11	none					Access Refused								
Butt Lane Pit	SK681608	2.16	SNCI	8	8+4			4		3		7	4	1	Planted specimen trees, Seasonally wet / damp areas, Dry ditches – shallow, Invasive species	
Thurbby (NK) Road Verge	SK681611 - SK684612	1.25	SNCI	3	3+0			4	2				1		Tussocky vegetation, Seasonally wet / damp areas, Dry ditches – shallow, Mowing and non-removal? Vehicle damage	
Norton Low Wood	SK687604	23.04	SNCI	3				Access Refused								
Kilbuck Plantation	SK691605	0.86	SNCI												Veteran trees, Standing / fallen dead wood, Seasonally wet / damp areas, Non-intervention, Invasive species	
Duke's Cowett	SK679424	1.76	LWT Reserve	2	2+0			12	22	1			1		Standing / fallen dead wood, Abundant nectar sources, Open access / ROW / permissive path, Scrub encroachment, No grazing	
Leadenham Park	SK6948517	29.42	none	1	1+2	✓		2	1			2	2	1	Planted specimen trees, Ridge and furrow, Grazing by horses, Invasive species	
Leadenham Quarry	SK663524	20.42	SNCI	3	3+0			3	5	2					Rock outcrops, Steep slopes, South-facing slopes	
River Witham	SK661520 - SK659665	0.00	none	0	0+5	0	0	5	1	0	0	4	5	1	Steep slopes	
Mr Neville's Pits West, Whisby Pits Complex	SK605666	7.28	none	2	2+0			2	1				1		Standing / fallen dead wood, Abundant nectar sources, Structural diversity, Steep slopes, South-facing slopes, Areas with frequent / prolonged flooding, Seasonally wet / damp areas, Scrub encroachment	
Compartment 14, Whisby Pits Complex	SK611671	3.59	LWT Reserve	3	3+4			11	6	9		4	4	8	Seasonally wet / damp areas, Invasive species	
Cinder Pit	SK613686	73.89	SNCI	16	16+3			7	2	7	2	3	3	1	Veteran / pollarded trees, Seasonally wet / damp areas, Dry ditches – deep, Re-planting – native / non-native, Excessive drainage	
Whisby Garden Centre and Grassland, Whisby Pits Complex (comp 24)	SK620675	14.02	none		0+3			6	3			3	3	2	Veteran / pollarded trees, Abundant nectar sources, Grazing by rabbits, Other grazing (goats), Frequent short mowing	

Site name	Grid reference	Quality/ing threshold			10 WD2/3	8+6 WD4	Parkland WD5	Orchard WD6	Access Refused				Additional features				Management (appropriate / inappropriate)
		Area	Status	Sub-site					NG1	CG1	HE2	AP1	10 Fb3	8 Sw2	8 Sw2	Maxab Mos1-4	
Compartment 25, Whisby Pits Complex	SK322676	12.06	part LWT						Site not surveyed								
Domestic Refuse Tip, Whisby Pits Complex (comp 23)	SK330676	64.14	none		2	2+7			7	5	5		7	7	3	1	Planted specimen trees. Abundant nectar sources, Structural diversity, Bare ground, Steep slopes, South-facing slopes, Dry ditches – shallow, Scrub encroachment, Grazing by rabbits, pollution, Invasive species.
South Hykeham Meadows 1	SK340646	2.61	SNCI						Access Refused								
South Hykeham Meadows 2	SK341646	1.80	SNCI		4	4+0			4	1					2		Dry ditches – shallow, Grazing by horses
South Hykeham Meadows 3	SK342646	1.52	SNCI						Access Refused								
South Hykeham Meadows 8	SK349642	0.55	SNCI						Site Destroyed								
South Hykeham Meadows 9	SK350642	0.91	SNCI						Site Destroyed								
North Hykeham Hayfield	SK353650	1.91	SNCI		1	1+0			11	2	5	1			3		Tussocky vegetation, Seasonally wet / damp areas, Scrub encroachment, No grazing
Harmston Park	SK357618	23.63	none						Access Refused								
Coleby Hall	SK371607	4.20	SNCI						Access Refused								
Harmston Quarry	SK390618	9.36	SNCI						2	7		1	4	4	1		Bare ground, Rock outcrops, Steep slopes, South-facing slopes, Earthworks / hummocky ground
Buck Springs	SK302706	1.52	SNCI		1	1+4			2	1			4	4	3		Seasonally wet / damp areas, Scrub encroachment
Gilbert's Plot	SK315699	18.40	SNCI		4	4+1			1	1	4	2	1	1	2		Standing / fallen dead wood, Seasonally wet / damp areas, Invasive species
Fossdyke Fen	SK337731	4.23	SNCI			0+7							7	7	1		Herbicide use, Fly tipping / pollution
Old Decay	SK341716	3.76	SNCI		5	5+7			7	1	5	2	7	7	8	1	Tussocky vegetation, Seasonally wet / damp areas
Canwick Park Golf Course	SK358700	0.00	none		2	2+13	✓		3	2	3		13	13	8		Veteran / pollarded trees, Planted specimen trees, Steep slopes, Earthworks / hummocky ground, Frequent short mowing
Culverthorpe Lake	TF019399	8.91	SNCI						Access Refused								
Dembieby Thorns	TF025384	14.76	SNCI						Access Refused								
Aunsby Pasture	TF040392	2.55	SNCI		1	1+3			1	2			3	3	1		Ridge and furrow, Seasonally wet / damp areas, hedgerows, Grazing by sheep
Willow Holt & Hillside Plantation	TF094376	12.32	SNCI		0	0+2	0	0	0	1	0	0	1	1	2		Seasonally wet / damp areas
High Wood, North Raucaby	TF010463	13.22	SNCI; WT Reserve		5	5+0											Standing / fallen dead wood, Ridge and furrow, Coppicing / selective felling? Re-planting – native / non-native, Invasive species
Culverthorpe Park	TF021401	15.53	none						Access Refused								
Raucaby Park	TF026457	33.23			1	1+0	✓		4		2				2		Veteran / pollarded trees, Ridge and furrow, Seasonally wet / damp areas, Grazing by sheep
Manor House Paddock	TF027454	0.12	SNCI		4	4+0			2	1							Planted specimen trees, Abundant nectar sources, Anthills, Open access, No grazing, Mowing and non-removal? Invasive species
Raucaby Hospital	TF038438	5.04	none						Access Refused								
Greyfles Pits	TF041448	1.93	SNCI						1		1						Bare ground, Earthworks / hummocky ground
Aswarby Park	TF061401	110.70	SNCI						Access Refused								
Field off Mareham Lane	TF083423	3.37	none						Access Refused								

Appendix 4: Individual Site Record Sheets

(See separate document: 2010 Appendix4.doc)