

**LAND EAST & WEST OF SNELL'S NOOK LANE, LOUGHBOROUGH**

**CHARNWOOD BOROUGH COUNCIL**

**EXTENDED PHASE I VEGETATION & HABITAT SURVEY**

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## **Overview & Summary Data**

The report accounts for an extended phase I vegetation and habitat survey on land to the east and west of Snell's Nook Lane, Loughborough. The report details the context, methodology and results of the survey work carried out.

Although most of the study area is under intensive agricultural management, it comprises a range of valuable habitats, several of which are classified as habitats of principal importance. Two ancient semi-natural woodland sites have been designated as Local Wildlife Sites. The survey identified additional sites which meet the criteria for designation as Local Wildlife Sites, in particular some mature trees, hedgerows and watercourses.

There is good connectivity between the habitats within the study area and the report identified the main wildlife corridors present.

A separate companion report containing sensitive information on species has been compiled but will remain confidential.

## **Survey Background**

Charnwood Borough Council undertook an Extended Phase I Survey of the land to the east and west of Snell's Nook Lane, Loughborough. This survey forms part of the evidence-base for the Local Development Framework and will be used to inform the decisions about the future development of the Borough. This survey complements the suite of surveys carried out by White Young Green Environmental (WYGE) for the seven Potential Areas for Growth which were reported in August 2008 in '*Charnwood Borough Council: Phase I Vegetation and Habitat Surveys (Stage I)*'.

The survey area covers the land which has been identified for a potential science and employment park through the Local Development Framework and which was subject to public consultation in the Core Strategy Further Consultation Report (October 2008). Boundaries of the area surveyed are shown on Map I. The total area surveyed measured 125.60 ha.

## **Methodology**

### Desk-base Study

A preliminary desk-base study of the survey area and surrounding land within a 1 km radius of the survey site was undertaken. Records held by Charnwood Borough Council were searched and further ecological information was supplied by Leicestershire & Rutland Environmental Resources Centre.

The desk-base study covered information on statutory Sites of Special Scientific Interest, non-statutory Local Wildlife Sites, as well as County/District/Parish ecological sites. County/District/Parish sites were notified under the previous

classification of ecological sites operating in Leicestershire, a system which has now been replaced by the Local Wildlife Sites. The information on statutory and non-statutory ecological sites is shown on Map 2.

The desk-base study also checked for records of protected and notable species, including Section 41 of the NERC Act 2006 species of principal importance and priority species listed in the Local Biodiversity Action Plan.

Species records and information supplied by Leicestershire & Rutland Environmental Resources Centre have not been integrated into this report due to their sensitive nature, but are shown in a separate species report which will remain confidential.

### Extended Phase I Survey

The survey was carried out according to the methodology described in JNCC Handbook for Phase I Habitat Survey. This follows a standardised system for classifying and mapping wildlife habitats. A Phase I habitat survey provides a relatively rapid record of the semi-natural vegetation and wildlife habitats. It equally allows the identification of habitats worthy of more in-depth surveys, for instance to support the notifications of Local Wildlife Sites.

In addition, the Extended Phase I Survey recorded field evidence of protected and notable species of flora and fauna and habitats suitable for such species. The survey also identified significant habitat features which may function as wildlife corridors or stepping stones within the wider landscape. Features were target-noted to indicate their accurate location when additional information on habitats and species of interest was recorded.

The Extended Phase I Survey was carried out by Charnwood Borough Council principally from 14 to 29 October 2009. Although this generally represents a sub-optimal time for survey work, as herbaceous species may be under-recorded, most habitats can still be assessed throughout the year with a high level of confidence, and it is not considered that the timing has influenced the results of the survey.

The location of the habitats described within the General Habitat Description section of the report has been described as accurately as possible and a grid reference has been provided for further clarity. A series of numbered target notes accompany the report and are shown on the maps accompanying the report. The information is shown on Maps 3a and 3b.

### Mature Tree Survey

In conjunction with the Phase I Habitat Survey, a survey to identify mature trees within the survey area was undertaken. The mature tree survey followed the methodology adopted by Leicestershire County Council for the Mature / Veteran Tree Survey. The survey is based on the recording of a range of physical characters for each tree investigated, such as the species, its exact location to an 8 figure grid reference number, height, girth at 1.3 m above ground. In case of pollarded trees

the girth was recorded as close to 1.3 m above ground as possible; for coppiced trees the girth was recorded at ground level. Further features relating to the condition of the tree and its likelihood to support associated fauna were recorded.

Each tree was given a unique reference number (e.g. T1, T2, etc.) and a photographic record of the tree was made. The mature tree survey was undertaken by Charnwood Borough Council from 28 October to 13 November 2009.

The location and reference number of each tree surveyed can be seen on Map 4a of the report.

### Hedgerow Survey

A hedgerow assessment survey was undertaken as part of the Extended Phase I survey. Woody species within the whole length of each hedgerow were recorded with an estimate of percentage cover, as well as the number of mature trees present. Additional habitat features of ecological value, such as the presence of ditches, dead wood and field margins were recorded.

Where the hedgerow was assessed during the survey as a potential Important Hedgerow / Local Wildlife Site, a quick assessment of an individual 30 m section sample was carried out. For consistency and to prevent any surveyor's bias, the 30 m section was measured 30 m away from either the south or east end of the hedgerow, depending on the general alignment of the hedgerow. Where the hedgerow measured less than 60 m in length, the 30 m section was selected on either side of the middle point of the hedge.

Each hedgerow surveyed was given a unique reference number (e.g. H1, H2, etc.) and plotted on Map 5 of the report.

### Protected Species Survey

As the information about protected species is sensitive, it has not been included in the main report but is accounted for in a separate report which will remain confidential.

## **Evaluation**

### Mature Tree Evaluation

The trees which were visually assessed as mature were measured and subsequently evaluated according to the criteria detailed in the Guidelines for the Selection of Local Wildlife Sites in Leicester, Leicestershire & Rutland. Tree with a girth of 3.77 m at 1.3 m above ground level (or 3.0 m for ash *Fraxinus excelsior* and elm species *Ulmus* spp.) were identified as candidate Local Wildlife Sites; see Map 4b.

Trees were concurrently assessed for their potential to support protected species from a list of key characteristic features.

## Hedgerow Evaluation

Native hedgerows are deemed to consist predominantly of at least one woody UK native species (i.e. 80% or more cover). Species-rich hedgerows may be taken as those which contain 5 or more native woody species on average in a 30 metre length. To qualify as an important Hedgerow (as defined by the Hedgerow Regulations 1997) / Local Wildlife Site under the primary criteria, hedges must be at least 1.3 m high and continuous and have either:

- 6 locally native trees or shrubs per 30 m averaged out over the length of the hedge or
- 5 locally native trees or shrubs per 30 m average plus two associated habitat features such as ditch, stream, bank, standard trees or pollards at average of 2 per 100m of at least 15 cm in girth, dead wood/old layers along at least 10% of the hedge or a parallel hedge within 15 m.

Criteria used to determine whether a hedge was deemed important and may qualify as a LWS were applied to each 30 m section surveyed. The 30 m sample gave an indication as to which hedgerows should be fully surveyed in future to support notifications as LWS or Hedgerow Retention Notices should consent for removal be sought.

## **General Habitat Description**

### Semi-natural Woodland

*Burleigh Wood* (8.50 ha) (TN1), to the west of Compton Close, at SK508177, is a block of ancient semi-natural woodland with a rich woodland ground flora. It is listed in Natural England's Inventory of Ancient Woodland. The age of the woodland is confirmed by its botanical richness. The canopy consists of a mixture of pedunculate oak *Quercus robur* and ash, with occasional silver birch *Betula pendula* and sessile oak *Quercus petraea* and rare sycamore *Acer pseudoplatanus*. The understorey consists mainly of coppiced hazel *Corylus avellana*, hawthorn *Crataegus monogyna*, field maple *Acer campestre*, holly *Ilex aquifolium* and elder *Sambucus nigra*. The ground flora contains several species indicative of ancient woodland in Leicestershire. This includes abundant bluebell *Hyacinthoides non-scripta*, frequent dog's mercury *Mercurialis perennis*, large patches of wood sorrel *Oxalis acetosella* and occasional wood anemone *Anemone nemorosa*, pendulous sedge *Carex pendula*, wood sedge *Carex sylvatica*, opposite-leaved golden saxifrage *Chrysosplenium oppositifolium*, yellow archangel *Lamium galeobdolon*, yellow pimpernel *Lysimachia nemorum*, sanicle *Sanicula europaea*, wood melick *Melica uniflora* and wood millet *Milium effusum*. The wood comprises a network of ditches and some small ponds, some of which are temporary. A larger pond is described below in the Wetland – Standing Water section. The site borders a housing area and is heavily used by the public along a permissive footpath.

*Holywell Wood* (6.70 ha) (TN2), to the west of the Research Centre, at SK506183, consists of a block of ancient woodland, containing both planted and semi-natural

areas, with a rich ancient woodland ground flora. The site also contains a small area of wet alder *Alnus glutinosa* woodland. The wood is listed in Natural England's Inventory of Ancient Woodland. The site was clear-felled, possibly during World War II, and the northern and eastern parts were re-planted with ash, with natural regeneration of alder in the wetter areas. The rest of the wood regenerated naturally and now has a canopy of abundant silver birch, with occasional pedunculate oak. An area of sycamore along the eastern edge of the wood has been brought under control over the last 20 years and is now much reduced. The understorey consists mainly of hazel, hawthorn, dogwood *Cornus sanguinea* and field maple. The age of the woodland is confirmed by the diversity of the ground flora, which contains several species indicative of ancient woodland in Leicestershire. These include abundant bluebell and dog's mercury, with large patches of wood anemone and occasional pendulous sedge, wood sedge, yellow archangel, giant woodrush *Luzula sylvatica*, wood sorrel and wood millet. The wetter alder woodland also contains species such as opposite-leaved golden saxifrage, meadowsweet *Filipendula ulmaria*, soft rush *Juncus effusus* and yellow pimpernel.

Wet woodland near Longcliffe Golf Course (1.17 ha) (TN3), to the west of Snell's Nook Lane, at SK503175, is adjacent to the southern boundary of the study area. The site comprises linear semi-natural wet woodland along the course of a former canal. There is a large seasonal pond in the centre of the site, with a rich aquatic flora. A species-poor hedge forms the northern boundary. The habitat has formed on both banks of the former canal. It is dominated by mature crack willow *Salix fragilis*, with abundant sycamore which was probably self-set from nearby trees. Pedunculate oak is occasional and include two large veteran trees. Silver birch is rare. The shrub layer is dominated by mature hawthorn, with occasional holly, blackthorn *Prunus spinosa*, dog rose *Rosa canina* and elder. Common gorse *Ulex europaeus*, wild gooseberry *Ribes uva-crispa* and sapling yews *Taxus baccata* are rare constituents. Bramble *Rubus fruticosus*, stinging nettle *Urtica dioica* and broad-leaved dock *Rumex obtusifolius* are the dominant ground flora species, with frequent false brome *Brachypodium sylvaticum*, wood meadow-grass *Poa nemoralis* and red campion *Silene dioica*. Occasional species include ivy *Hedera helix*, wood avens *Geum urbanum*, ground ivy *Glechoma hederacea*, bush vetch *Vicia sepium*, male fern *Dryopteris filix-mas* and nipplewort *Lapsana communis*. There is a large patch of Japanese knotweed *Fallopia japonica* on the edge of the woodland along Snell's Nook Lane, approximately 2 metres in height and covering an area approximately 5 square metres. Dead wood was occasional, especially at the eastern end of the site where dead willow *Salix sp.* branches extend over a large patch of bare mud. (Figures relating to the woodland have not been incorporated within the overall statistics of the report as the woodland is adjacent to the survey area).

A small block of secondary semi-natural woodland (0.74 ha) (TN4) is located at the corner of Ashby Road and Snell's Nook Lane at grid reference SK502184. The woodland consists of even-aged stand of mature trees, dominated by sycamore with occasional ash. One large horse chestnut *Aesculus hippocastanum*, which showed signs of heavy infestation from the leaf-miner larvae of *Cameraria ohridella* in 2010, stands at the south-west corner of the woodland. The understorey is sparse, with occasional ash, elder, hawthorn and goat willow *Salix caprea* saplings and rare dog rose. The ground flora is poor. It is dominated by extensive stands of nettle in



shady areas. Where openings in the canopy occur, the ground flora is mainly dominated by dense bramble, cleavers *Galium aparine* and false oat-grass *Arrhenatherum elatius* with occasional herb-robert *Geranium robertianum*, ground ivy, hedge woundwort *Stachys sylvatica*, creeping buttercup *Ranunculus repens*, nipplewort and wood avens. There are extensive areas of bare ground where the land has been remodelled to accommodate an unofficial BMX track, which is heavily used. In places, mounds of earth have been piled against tree trunks and this is likely to affect the trees in the long term. The ground is generally heavily trampled and some of the trees show signs of damage.

A thin belt of semi-natural woodland (0.57 ha) (TN5), at SK491181, runs alongside Shortcliffe Brook at the bottom of the embankment to the east of the M1 motorway. The woodland consists of mature trees and shrubs. Dominant trees species are alder and willow, including crack willow, and there are frequent sycamore and occasional silver birch. The understorey is dominated by hawthorn, with dog rose and elder being occasional constituents. A small amount of gorse is present. The ground flora is mostly overshadowed by the dense canopy of the sycamore and is dominated by stinging nettle.

A thin belt of semi natural woodland (0.34 ha) (TN6), at SK505175, stands on the embankment running parallel to the public footpath linking Nanpantan Road and Snell's Nook Lane. A mix of native and non-native species is present and the vegetation is dominated by tall hawthorn, with frequent elder and occasional dog rose, hazel, rowan and ash saplings and rare holly and blackthorn. Canopy trees include ash, pedunculate oak and sycamore. The ground flora is dominated by bramble, with frequent stinging nettle, ground ivy, hogweed, creeping thistle, herb-robert, wood avens and cow parsley. Bracken occurs in patches. The bottom of the embankment comprises an area of wet ground with dense ivy, and occasional stinging nettle, creeping buttercup and male fern.

#### Plantation Broad-leaved Woodland

*Horseshoe Link Wood* (1.00 ha) (TN7), at SK506179, is a recent plantation woodland which was created in the early 1990s to link up the ancient woodland sites of Burleigh Wood and Holywell Wood. The wood was only planted up with stock grown from seeds collected in Burleigh and Holywell Woods, and involved the pupils from the local primary school with the seed collection, raising of stock and planting. Species which have done particularly well are pedunculate oak and crab apple *Malus sylvestris*, with mixed success for other species such as hawthorn and field maple. The wood is very dense and rather impenetrable in places, but elsewhere where trees have failed and cattle have managed to get in, glades have been created. The ground flora is species-poor as the land was previously used for arable production and consists mainly of rough grass species such as false oat-grass, Yorkshire fog *Holcus lanatus* and cock's-foot *Dactylis glomerata*. The wood has not received any management and in places the trees are in close competition. The trees are too immature to offer the range of features which could be used by roosting bats; however the density of the wood is likely to offer good cover to nesting birds. The wood provides a strong connection between the two ancient woodlands.

A patchy belt of young broad-leaved plantation woodland (approximately 0.68 ha) (TN8), at SK493183, runs alongside part of the southern roadside verge of Ashby Road. The ground slopes down from the edge of the road to the adjacent field boundaries with a ditch running at the bottom of the bank. Mixed species have been planted or are self set from nearby trees and include hawthorn, sycamore, with occasional field maple, hornbeam *Carpinus betulus*, crab apple, pedunculate oak, dog rose, ash, elder and elm *Ulmus sp.* suckers. The ground flora is species poor and is dominated by extensive patches of bramble and nettle, with frequent ivy, cow parsley *Anthriscus sylvestris*, and vigorous grass species such as false oat-grass and Yorkshire fog.

### Plantation Mixed Woodland

*Snell's Nook Wood* (1.08 ha) (TN9), at SK499183, stretches from Ashy Road to Longcliffe Golf Course and consists of a linear plantation of mixed woodland with a species-poor ground flora. The wood is composed mainly of mature trees with occasional saplings. Mature ash was dominant with occasional hybrid common lime *Tilia x europaea*, pedunculate oak, wych elm *Ulmus glabra* and Scots pine *Pinus sylvestris*. The shrub layer was composed of dog rose, hawthorn and elder with a few sapling holly bushes. The ground flora was rather patchily distributed, dominated by mats of ivy and stands of stinging nettle. Bramble was abundant throughout the wood, with frequent cow parsley. Other ground flora species were also typical of secondary woodland and included red campion, herb-robert, hedge garlic and wood avens. There were a few ruderal species at the northern end of the wood, adjacent to the road. These included spear thistle *Cirsium vulgare*, cock's-foot and cleavers. Dead wood was occasional throughout, dominated by mature wych elm, with sucker re-growth around the roostsock.

*Hurst Farm Linear Wood* (0.37 ha) (TN10), at SK494182, extends from Ashby Road to Hurst Farm along the farm access track. It is dominated by mature trees with few saplings. Pedunculate oak is the dominant species with frequent beech *Fagus sylvatica* and occasional Scots pine. The shrub layer forms approximately 25% of the wood and is dominated by hawthorn with occasional elder, dog rose and holly. The latter includes mature specimens as well as saplings. The ground flora is dominated by dense stands of bramble with abundant stinging nettle and frequent bracken *Pteridium aquilinum*, the latter two species being locally dominant. Other ground flora species are restricted to the wood edges, where wild raspberry *Rubus idaeus*, rough meadow-grass *Poa trivialis*, ground ivy and red fescue *Festuca rubra* were occasionally recorded. There are also several ruderal species growing alongside the middle track, including rosebay willowherb *Chamerion angustifolium*, cow parsley, false oat-grass, cock's-foot and broad-leaved dock. Dead wood is occasional throughout the wood, mainly dead beech branches.

### Orchard

A small orchard (0.32 ha) (TN11), at SK50251840, is located to the south of Ashby Road, and is bounded by arable fields on the east, south and west boundaries. The orchard consists of densely planted mature fruit trees including different varieties of

apple *Malus domestica* and plum *Prunus domestica* ssp. trees. The orchard appears unmanaged and neglected with the fruit being left uncollected. The ground flora is rank and species-poor, dominated by coarse vegetation including grass species such as false oat-grass and Yorkshire fog.

### Dense Scrub

A belt of dense to scattered scrub (approximately 0.64 ha) (TN12), at SK491182, is present on the edge of the study area along a steep bank to the east of the M1 motorway. A small watercourse, Shortcliffe Brook, runs at the bottom of the bank and is bordered by mature trees (see below under running water).

### Semi-improved Grassland

Semi-improved grassland is principally located in the vicinity of Holywell Farm and comprises species-poor grassland assemblage. The fields are managed as mixed grazing with cattle and sheep. The total area of semi-improved grassland represents 4.63 ha.

### Improved Grassland

Improved grassland is principally located in the vicinity of Hurst Farm, and comprises improved grassland which has been reseeded and is grazed by dairy cattle. The fields are species-poor and comprise vigorous grass cultivars. The total area of improved grassland within the study area represents 43.15 ha.

### Amenity Grassland

The only area of amenity grassland within the survey area is the lawn in the garden of Holywell Cottage, off the track leading from Ashy Road to Holywell Farm. Although the Cottage is not occupied, the lawn is regularly maintained.

### Wetland – Running Water

*Burleigh Brook* runs across the study area flowing from west to east, from SK49431788 to SK50861841. The section of brook within the study area measures 1,654 m from its issues to the south of Hurst Farm to the eastern boundary of Holywell Wood, from hence it flows eastwards. The section of brook within the survey area is lined with mature trees and shrubs and forms one of the principal wildlife corridors across the area. The brook is about 3 m wide from the top of banks, whilst the water channel is less than 1 m across. Either side are steep earth banks over 1 m in height. To the east of Snell's Nook Lane the brook mostly flows along a meandering route whilst to the west of the Lane the course of the brook is straighter to follow modified field boundaries. The mature trees and shrubs lining the water course cast some dense shade on the watercourse except for the section which principally consists of trimmed shrubs (H4d). The bank side herbaceous vegetation is tall and dense, often overhanging the water. Species present include the non-native invasive Indian balsam *impatiens glandulifera*.

A 420 m section of *Shortcliffe Brook*, a small watercourse, runs at the bottom of the M1 motorway embankment along the western study area boundary to the east of the fields grazed as cattle pasture, from SK49131790 to SK49231829. The brook has been modified and straightened. It issues from the Charnwood Forest landscape area further south, and after flowing within the survey area passes through a culvert under Ashby Road. The watercourse comprises stretches with a rocky substrate, whilst other sections have accumulated silt deposit, possibly through bank erosion from trampling cattle. Little aquatic vegetation is present as the watercourse is heavily shaded by overhanging trees and shrubs; more open stretches are dominated by fool's water-cress.

The Earl's Dyke is an ancient boundary dyke running across the survey area from Burleigh Wood to Burleigh Brook, from SK50251821 to SK50581764. Sections of the dyke reach a substantial size, up to 2 m in height. The dyke is concealed and overshadowed by the associated hedgerow and seems to support little aquatic vegetation, although it appears to be wet throughout the year.

Burleigh Wood comprises a network of ditches with seasonal and fluctuating water levels, including profound ditches with associated banks along parts of the wood's boundaries marking the extent of an old deer park. The ditches have very much silted up in places. As a result of overshadowing by trees and shrubs, little aquatic vegetation is present.

An open ditch (TN13) runs across at right angle from Snell's Nook Lane to the Earl's Dyke, at SK50321787. The ditch is about 0.75 m deep, and much silted up with little water. The ditch is clogged up by tall grass species including false oat-grass and Yorkshire fog, whilst a less abundant herbaceous constituent is dominated by brooklime *Veronica beccabunga* and creeping buttercup, with rare greater bird's-foot trefoil *Lotus pedunculatus* and common sorrel *Rumex acetosa*.

### Wetland – Standing Water

The north-east corner of Burleigh Wood comprises a network of small ponds, most of which are temporary and dry out in the summer. A larger pond (TN14) at approximately SK50771755, with fluctuating water levels tends to remain wet throughout the year. The pond is heavily shaded by trees and receives a fair amount of leaf detritus. The aquatic vegetation consists of an extensive area dominated by branched bur-reed *Sparganium erectum*. Marginal vegetation includes gipsywort *Lycopus europaeus*, skullcap *Scutellaria galericulata*, soft rush *Juncus effuses* and common marsh-bedstraw *Galium palustre*.

There is a large shallow pond in the centre of the Wet Woodland to the north of Nanpantan Golf Club, (TN15) at SK502175. This has formerly been more extensive but has gradually reduced in extent due to the silting up of the canal. The water is about 0.80 m in depth but is likely fluctuating, with shallow, heavily vegetated earth banks. Redshank *Polygonum persicaria*, fool's watercress *Apium nodiflorum* and branched bur-reed are the dominant species, with occasional bitter-sweet *Solanum dulcamara*. Water horsetail *Equisetum fluviatile* and water forget-me-not *Myosotis*

*scorpioides* are rare constituents. Submerged species are represented by common water-starwort *Callitriche stagnalis* and fennel pondweed *Potamogeton pectinatus*. Ivy-leaved duckweed *Lemna trisulca* is the only floating species recorded. The centre of the pond is un-shaded but the canopy is in the process of closing over from the edges.

### Cultivated Land & Field Margins

A large proportion of the study area is under intensive arable production, particularly with regards to the land to the east of Snell's Nook Lane farmed from Holywell Farm. Field margins mostly vary from 0.50 m to about 2.00 m in width. The vegetation is dominated by coarse grass species, such as false oat-grass, cock's-foot and Yorkshire fog, with occasional to abundant bramble, nettle, dock and cleavers. Occasional species comprise creeping buttercup, scentless mayweed *Tripleurospermum inodorum*, hogweed *Heracleum sphondylium* and common field speedwell *Veronica persica*. Typical field margin arable plant species are occasionally encountered and include scarlet pimpernel *Anagallis arvensis*, parsley-piert *Aphanes arvensis*, field pansy *Viola arvensis* and redshank.

Some of the field margins adjacent to Burleigh Brook have retained some herbaceous species more typical of species-rich semi-improved grassland, see TN16 at SK502181 and Hedgerow Field Survey sheets. Species encountered include meadowsweet, meadow vetchling *Lathyrus pratensis*, lady's bedstraw *Galium verum*, meadow buttercup *Ranunculus acris*, black knapweed *Centaurea nigra* and greater burnet-saxifrage *Pimpinella major*.

The total area under arable production within the study area represents 57.07 ha.

### Tall Herb / Tall Ruderal

This habitat mainly appears in patches too small to be recorded in details except within one small field (0.71 ha) to the north of Holywell Cottage (TN17) at SK505184. The field is used to store hay bales but appears otherwise unmanaged and is dominated by coarse vegetation such as false oat-grass, cock's-foot, creeping thistle, common ragwort *Senecio jacobaea* and extensive beds of nettle.

### Hedgerows

#### *Species-rich Hedgerows*

Species-rich hedgerows have been recorded principally on agricultural land associated with Holywell Farm. The network of species-rich hedgerow represents 3,149 m of linear habitat, 1,904 m of which are considered candidate Local Wildlife Sites. The dominant native species recorded are hawthorn, blackthorn and hazel. Other native hedgerow species recorded include dog rose, field maple, dogwood, wild privet, goat willow, holly, crab apple and elder. Tree species are principally pedunculate oak, ash, crack willow and alder. Non-native species include sycamore, horse chestnut, common lime and snowberry.

### *Species-poor Hedgerows*

Species-poor hedgerows have been recorded principally on agricultural land associated with Hurst Farm. The network of species-poor hedgerow represents 8,496 m of linear habitat.

### *Non-native hedgerows*

One single species hedgerow consisting of a row of Leylandi (H37) was present to the east of Hurst Farm (87 m).

The total length of hedgerow surveyed is 11,732m.

A hedgerow survey summary form has been incorporated to the report under Appendix 2. Photographic records of the hedgerows surveyed have been saved within Charnwood Borough Council's archives.

### Trees

There are a large number of mature trees within the survey area, some of which can be classified as veteran. 122 mature trees have been surveyed in details and the findings of the survey have been summarised in Appendix 3. Photographic records of the trees have been saved within Charnwood Borough Council's archives.

Most mature trees are found in association with hedgerows and Burleigh Brook, and on rare occasions are isolated, either within a field or alongside the roadside verge. The majority of mature trees within the study area are native species, principally pedunculate oak (63%), with frequent ash (15%) and crack willow (13%), whilst mature alder trees were a rare constituent (<1%). Non-native mature trees include occasional sycamore (2.5%) and lime (2.5%), whilst other are rare such as horsechestnut (1.5%) and weeping willow *Salix x sepulcralis* (<1%).

Eleven no. trees (9%) met outright the criteria for selection as Local Wildlife Sites, with another 17 trees (13%) coming within 10% of the size threshold defined in the criteria.

### Other, e.g. Built Structures

The study area encompasses several buildings. Holywell Cottage is a Victorian property which has been left vacant for several years, although the garden is maintained.

Hurst Farm to the west of the study area is a working dairy farm with a traditional farm house and a range of agricultural buildings.

Holywell Farm is outside the study area, to the east. The building has not been surveyed.

## Non-native species

Japanese knotweed was recorded in several locations within the survey area. All occurrences have been target noted, from target note JK1 to target note JK7 and the location of the stands are shown on Map 6. A table listing all the records of Japanese knotweed within the survey areas can be found in Appendix 4 and photographic records have been saved within Charnwood Borough Council's archives.

## **Notable Habitats and Features**

The majority of the surveyed area comprised intensively managed agricultural land predominantly either in arable production or improved pasture, both of relatively low ecological value. Notable habitats and features recorded were species-rich hedgerows, veteran and mature trees, areas of semi-natural ancient woodland, water courses and ponds.

Habitats which support or may support protected species were also recorded and these included trees assessed as having high or moderate potential for roosting bats, wetlands suitable for breeding amphibians, woodland and scrub likely to have protected species and buildings likely to have protected species. A separate report on species has been prepared but the information is confidential and will not be publicly available.

## **Summary Data Table**

<b>Habitat / Feature</b>	<b>Extent</b>	<b>% of Area</b>
<b>Woodland &amp; Scrub</b>		
Broad-leaved semi-natural woodland	16.85 ha	13.42%
Broad-leaved plantation woodland	1.68 ha	1.34%
Mixed plantation woodland	1.45 ha	1.15%
Orchard	0.32 ha	0.25%
Dense scrub	0.64 ha	0.51%
<b>Grassland</b>		
Poor semi-improved grassland	4.63 ha	3.69%
Improved grassland	43.15 ha	34.36%
<b>Wetland &amp; Watercourses</b>		
Running water	2,074 m	n/a
Standing water	circa 0.01 ha	<0.01%
<b>Other</b>		
Arable	54.11 ha	43.08%

Habitat / Feature	Extent	% of Area
Tall ruderal	0.71 ha	0.56%
Built structures & gardens	0.97 ha	0.77%
Boundaries		
Intact species-rich native hedge	3,149 m	n/a (26.84% of hedgerows)
Intact species-poor native hedge	8,496 m	n/a (72.42% of hedgerows)
Non-native hedge	87 m	n/a (0.74% of hedgerows)

## Designated Sites

### Statutorily Designated Sites

Sites of Special Scientific Interest	Location	Distance	Description
Jubilee Woods & The Outwoods (part of Beacon Hill, Hangingstone & The Outwoods SSSI)	SK518156	165 m	Ancient semi-natural broadleaved woodland & plantation mixed woodland
Newhurst Quarry SSSI	SK486180	250 m	Geological SSSI

### Non-statutorily Designated Sites

Local Wildlife Sites	Location	Distance	Extent	Description	% of Area
Burleigh Wood	SK508177	Within Site	8.50 ha	Ancient semi-natural broadleaved woodland	6.77%
Holywell Wood	SK506183	Within Site	6.70 ha	Ancient semi-natural broadleaved woodland	5.33%
Longcliffe Golf Course	SK495173	Adjacent	59.0 ha	Acid/mixed grassland/secondary broadleaved woodland/mature trees	N/A
Nanpantan Reservoir	SK508171	230 m	4.49 ha	Standing water	N/A
Buck Hill	SK507163	440 m	22.20 ha	Acid/mixed grassland	N/A
Wood Brook	SK505170	440 m	1,085 m	Stream	N/A
Nanpantan Hall Wood	SK501169	480 m	5.28 ha	Plantation mixed woodland	N/A



<b>Local Wildlife Sites</b>	<b>Location</b>	<b>Distance</b>	<b>Extent</b>	<b>Description</b>	<b>% of Area</b>
Booth Wood	SK508194	650 m	4.20 ha	Semi-natural broadleaved woodland and plantation mixed woodland	N/A
Buck Hill Knoll	SK508165	775 m	1.20 ha	Coniferous plantation/ bracken	N/A
Home Farm Wood	SK500166	830 m	1.80 ha	Plantation mixed woodland	N/A

<b>District Level Ecological Sites</b>	<b>Location</b>	<b>Distance</b>	<b>Extent</b>	<b>Description</b>	<b>% of Area</b>
Home Covert West	SK489187	315 m	4.60 ha	Plantation mixed woodland	N/A
Home Covert East	SK493192	575 m	11.98 ha	Plantation broad-leaved woodland	N/A

<b>Parish Level Ecological Sites</b>	<b>Location</b>	<b>Distance</b>	<b>Extent</b>	<b>Description</b>	<b>% of Area</b>
Snell's Nook Wood	SK499183	Within site	1.08 ha	Plantation mixed woodland	0.86%
Hurst Farm Linear Wood	SK494182	Within site	0.37 ha	Plantation mixed woodland	0.29%
Wet Woodland	SK503175	Adjacent	1.17 ha	Semi-natural broadleaved woodland/ standing water	N/A
Dismantled Railway	SK495184	85 m	3.36 ha	Secondary broad-leaved woodland	N/A
Longcliffe Plantation	SK491170	220 m	4.72 ha	Plantation mixed woodland	N/A
Ingleberry Rock	SK489173	370 m	0.64 ha	Semi-natural broadleaved woodland & plantation broadleaved woodland	N/A
Shortcliffe	SK486171	730 m	1.15 ha	Scrub & bracken	N/A
Home Farm Plantation	SK502167	760 m	1.38 ha	Plantation broad-leaved woodland	N/A

Parish Level Ecological Sites	Location	Distance	Extent	Description	% of Area
Shortcliffe Shelter Belt	SK484171	900 m	0.70 ha	Plantation broadleaved woodland	N/A
Shortcliffe Field	SK482171	930 m	4.50 ha	Neutral grassland	N/A

### Target Notes

Target Note	Location	Description
TN1	SK508177	Burleigh Wood
TN2	SK506183	Holywell Wood
TN3	SK503175	Wet woodland near Longcliffe Golf Course
TN4	SK502184	Secondary semi-natural woodland
TN5	SK491181	Semi-natural woodland belt
TN6	SK505175	Semi-natural woodland belt
TN7	SK506179	Horseshoe Link Wood
TN8	SK493183	Young plantation woodland
TN9	SK499183	Snell's Nook Wood
TN10	SK494182	Hurst Farm Linear Wood
TN11	SK50251840	Orchard
TN12	SK491182	Dense scrub along M1
TN13	SK50321787	Ditch
TN14	SK50771755	Pond in Burleigh Wood
TN15	SK502175	Pond in wet woodland near Longcliffe Golf Course
TN16	SK502181	Field margin along Burleigh Brook
TN17	SK505184	Field north of Holywell Cottage
JK1	SK50181811	2 m x 0.50 m stand of Japanese knotweed in hedgerow H17
JK2	SK50181811	4 m x 0.50 m stand of Japanese knotweed on road side verge adjacent to hedgerow H17
JK3	SK50361759	3 m x 1 m stand of Japanese knotweed in hedgerow H18
JK4	SK50361758	4 m x 2 m stand of Japanese knotweed in hedgerow H18
JK5	SK50341763	95 m x 1 m stand of Japanese knotweed in hedgerow H49
JK6	SK50111827	2 m x 1 m stand of Japanese knotweed in hedgerow H58
JK7	SK50101829	5 m x 1.5 m stand of Japanese knotweed in hedgerow H58

For further details on target notes TN1 to TN16, please refer to the General Habitat Description and to Map 3b. For further information on target notes JK1 to JK7, please refer to Appendix 4 and Map 6.

## Priority Habitats

Habitat / Feature	Extent	% of Area
Hedgerows	11,645 m	n/a (99% of hedgerows)
Lowland mixed deciduous woodland	16.85 ha	13.42%
Orchards	0.32 ha	0.25%
Ponds	0.01 ha	<0.01%
Rivers	2,074 m	n/a

## Wildlife Corridors

Feature	Location	Extent	Description & Function
Burleigh Brook	SK49431788 to SK50861841	1,654 m	The brook and associated habitats forms one of the principal corridors running west to east across the survey area. It reaches beyond the survey across the landscape area to the west.
Shortcliffe Brook	SK49131790 to SK49231829	420 m	The brook and its associated habitats forms a corridor linking the survey area with Charnwood Forest, and beyond to Loughborough western fringe.
Horseshoe Woodland	SK50591800 to SK50741779	320 m	The woodland connects the two ancient woodland sites of Burleigh Wood and Holywell Wood.
Snell's Nook Wood	SK49911841 to SK49971760	835 m	The linear woodland forms a corridor running from the woodland along the site's southern boundary across along a south to north axis.
Woodland along southern boundary	SK49981761 to SK50641741	705 m	This corridor is in 2 parts (315 m + 390 m) either side of Snell's Nook Lane: the belt of woodland along the footpath at the back of houses off Snell's Nook Lane and the woodland along the old canal route next to the Golf Course.
Earl's Dyke	SK50581764 to SK50251821	685 m	This ancient dyke provides a link between Burleigh Brook's deer park ditch & bank system and Burleigh Brook

<b>Feature</b>	<b>Location</b>	<b>Extent</b>	<b>Description &amp; Function</b>
Hedgerow	SK50631760 to SK50551747	150 m	The hedgerow links Burleigh Wood to the woodland belt along the site's southern boundary
Hurst Farm Linear Wood	SK49461833 to SK49481809	245 m	Together with the hedgerow below, the linear woodland provide a connection either side of Hurst Farm in a south-north axis.
Hedgerow	SK49461800 to SK49281769	375 m	The hedge provide a link between Hurst Farm and the Golf Club woodland along the site's southern boundary
Hedgerows	SK49531800 to SK49551760	425 m	The hedges provide a link between Hurst Farm and the Golf Club woodland along the site's southern boundary
Hedgerows	SK50581833 to SK50541831	205 m	The hedgerows on east, north and west boundaries of Burleigh Cottage act as a link with Holywell Wood and Burleigh Brook

Wildlife corridors are shown on Map 7.

## **Recommendations for Further Investigation**

### ***Potential Local Wildlife Sites***

There are several areas which are considered to merit further investigation with regard to Local Wildlife Site notification as follows:

- 13 hedgerows are likely to meet the LWS criteria on the basis of the number of native woody species and associated features. Another 8 hedgerows were identified as species-rich and would also require sampling to confirm their status. The hedgerows are listed in the Hedgerow Table found in Appendix 2.
- The section of Burleigh Brook flowing through the survey area is highly likely to qualify as a Local Wildlife Site on its own merit and in view of its associated habitats.
- The section of Shortcliffe Brook flowing along the western site boundary is highly likely to qualify as a Local Wildlife Site both on its own merit and in view of its associated habitats.

- 11 mature trees fulfil the criteria for designation as Local Wildlife Sites. Another 16 trees come within 10% of the size threshold defined in the criteria.

Potential Local Wildlife Sites are shown on Map 7.

### **Wildlife Corridor Management**

Protected species information and further surveys should inform future management priorities.

### **Summary of Key Ecological Resources**

The survey area contains two designated sites: Burleigh Wood and Holywell Wood have both been notified as Local Wildlife Sites and are listed in Natural England Inventory of Ancient Woodland. They are connected by the Horseshoe Woodland, a recent plantation woodland which has used stock of local origin from Burleigh Wood and Holywell Wood.

The area contains two water courses, Burleigh Brook and a small section of Shortcliffe Brook which are likely to meet the criteria for Local Wildlife Site designation and function as wildlife corridors.

The survey area comprises a good network of hedgerows, a high proportion of which are likely to qualify as Important Hedgerow / Local Wildlife Site. The hedgerow network connects the water courses, woodland and built structures and from part of a very well linked up biodiversity network.

A good number of mature trees are present, including a good proportion of veteran trees, which qualify as Local Wildlife Sites on their own. Many trees exhibit features which are of importance for other species.

This is a sensitive area which forms the north-eastern part of Charnwood Forest and link up this landscape area to the outskirts of Loughborough to the west and the Langley Lowlands landscape character area to the north.

### **Comparison with Surrounding Landscape**

The land within the survey area is located between the built up area of Loughborough and the M1 motorway and is considered typical of the edge of the Charnwood Forest landscape. The land gently rises to the south and towards the steeper wooded landscape of Charnwood Forest. It also provides a transition between Charnwood Forest and the Langley Lowlands to the south. The agricultural pattern of the land is one of mixed farming with medium size fields bounded by a network of intact hedgerows, most of which comprise mature native species dominated by pedunculate oak and, to a lesser degree, ash and willow. The treed

landscape is reinforced by ancient semi-natural broadleaved woodland sites, linked up by more recent woodland and small blocks of woodland some of which are linear. The landscape is very well connected through a network of hedgerows and tree-lined watercourses. Grassland fields have been agriculturally improved and the remaining fields are under arable production.

### Non-technical Summary

<b>Indicator Values for the Surveyed Area</b>			
<b>No. of statutorily designated sites within 1 km</b>	<b>No. of Local Wildlife Sites within and adjacent to the surveyed area</b>	<b>Area of priority habitats within the survey area</b>	<b>Potential Local Wildlife Sites</b>
2 SSSI within 250 m	2 LWS within area 1 LWS adjacent to area 7 LWS within 1 km 2 District sites within 1 km 2 Parish site within area 1 Parish site adjacent 7 Parish sites within 1 km	11,645 m native hedgerows  16.85 ha lowland mixed deciduous woodland  11 no. mature trees  1 pond  2,074 m streams 0.32 ha orchard	3,149 m species-rich hedgerows  11 no. mature trees  Burleigh Brook Shortcliffe Brook

<b>Percentage of semi-natural habitats (compared to total area surveyed)</b>	<b>No. of veteran trees (meeting LWS criteria)</b>	<b>No. of trees at least with moderate bat roost potential</b>	<b>No. of Red Data Book, LBAP and protected species</b>	<b>Invasive species present</b>
20.36% plus 2,074 m running water and 11,645 m native hedgerows	11 no. trees (+ 16 no. within 10% of criterion)	69	7	Yes – Japanese knotweed, Indian balsam

<b>Percentage Values for Semi-natural Habitats *</b>		
Broad-leaved semi-natural woodland	16.85 ha	13.42%
Broad-leaved plantation woodland	1.68 ha	1.34%
Dense scrub	0.64 ha	0.51%
Poor semi-improved grassland	4.63 ha	3.69%

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Extended Phase I Vegetation & Habitat Survey Land East & West of Snell's Nook Lane, Loughborough

Standing water	circa 0.01 ha	<0.01%
Tall ruderal	0.71 ha	0.56%
		<b>Total: 19.53%</b>

\* All obviously artificial habitats, such as arable, improved grassland have been excluded from this table, as also has mixed plantation woodland, as this contains a high percentage of non-native species. Broad-leaved plantation woodland has been included as in this instance the proportion of non-native species is not high. Hedgerows and running water totals have been calculated separately and are also excluded as they have their own tables elsewhere in this document.

## **Appendix I - References and Documents Consulted**

Department for Environment, Food and Rural Affairs (2007) Hedgerow Survey Handbook – A Standard Procedure for Local Surveys in the UK. DEFRA, London.

Harris, S., Cresswell, P. & Jefferies, D. (1989) Surveying Badgers. Occasional Publication of the Mammal Society No. 9. The Mammal Society, London.

Jeeves, M (2007) Leicestershire Rare Plant Register. Leicestershire & Rutland Wildlife Trust / Botanical Society of the British Isles, Leicester.

Joint Nature Conservation Committee (2003) Handbook for Phase I Habitat Survey – A Technique for Environmental Audit. Joint Nature Conservation Committee, Peterborough.

Leicestershire County Council (2008) Guidelines for the Selection of Local Wildlife Sites (previously known as Sites of Importance for Nature Conservation or SINCs) in Leicester, Leicestershire and Rutland.

ODPM (2005) Government Circular: Biodiversity and Geological Conservation – Statutory Obligations and their Impact within the Planning System. ODPM 06/2005.



## Appendix 2 - Hedgerows

Hedge no.	Location	Mid-point grid ref	Hedge type	Length (m)
H1	Holywell Farm, Loughborough	SK 50509 18477	shrubby	50
H2	Holywell Farm, Loughborough	SK 50372 18470	shrubby	240
H3a	Holywell Farm, Loughborough	SK 50271 18415	shrubby	90
H3b	Holywell Farm, Loughborough	SK 50310 18302	shrubby	157
H4a	Holywell Farm, Loughborough	SK 50562 18325	shrubby with trees	44
H4b	Holywell Farm, Loughborough	SK 50497 18279	shrubby with trees	137
H4c	Holywell Farm, Loughborough	SK 50503 18254	shrubby with trees	103
H4d	Holywell Farm, Loughborough	SK 50390 18231	shrubby with trees	95
H4e	Holywell Farm, Loughborough	SK 50266 18197	shrubby with trees	103
H5	Holywell Farm, Loughborough	SK 50526 18330	shrubby with trees	54
H6	Holywell Farm, Loughborough	SK 50497 18382	shrubby	65
H7	Holywell Farm, Loughborough	SK 50504 18431	shrubby	70
H8	Holywell Farm, Loughborough	SK 50268 18363	shrubby	35
H9	Holywell Farm, Loughborough	SK 50237 18406	shrubby with trees	92
H10	Holywell Farm, Loughborough	SK 50204 18442	shrubby	40
H11	Holywell Farm, Loughborough	SK 50199 18391	shrubby	94
H12	Holywell Farm, Loughborough	SK 50167 18335	shrubby	99
H13	Holywell Farm, Loughborough	SK 50145 18217	shrubby with trees	145
H14	Holywell Farm, Loughborough	SK 50261 18079	shrubby with trees	266
H15	Holywell Farm, Loughborough	SK 50416 17818	shrubby	113
H16	Holywell Farm, Loughborough	SK 50345 17920	shrubby with trees	122
H17	Holywell Farm, Loughborough	SK 50240 17950	shrubby with trees	434
H18	Holywell Farm, Loughborough	SK 50351 17637	shrubby with trees	190
H20	Holywell Farm, Loughborough	SK 50591 17531	shrubby	148
H21	Holywell Farm, Loughborough	SK 50379 17742	shrubby with trees	137
H22	Holywell Farm, Loughborough	SK 50507 17703	shrubby	176
H24	Holywell Farm, Loughborough	SK 50718 17430	shrubby with trees	142
H25	Holywell Farm, Loughborough	SK 50795 17453	shrubby	35
H26	Holywell Farm, Loughborough	SK 50466 18194	shrubby with trees	119
H27	Holywell Farm, Loughborough	SK 50406 18054	shrubby with trees	263
H28	Holywell Farm, Loughborough	SK 50525 18105	shrubby	107
H29	Holywell Farm, Loughborough	SK 50471 17963	shrubby with trees	264
H30	Holywell Farm, Loughborough	SK 50577 18031	shrubby with trees	64
H31	Holywell Farm, Loughborough	SK 50536 17827	shrubby with trees	181
H32	Holywell Farm, Loughborough	SK 50668 17931	shrubby with trees	102
H33	Holywell Farm, Loughborough	SK 50681 18007	shrubby	80
H34	Holywell Farm, Loughborough	SK 50598 18420	shrubby	225
H35	Holywell Cottage, Loughborough	SK 50586 18348	shrubby with trees	47
H36	Holywell Farm, Loughborough	SK 50577 18423	shrubby with trees	121
H37	Hurst Farm, Loughborough	SK 49530 18051	line of trees	87
H38	Hurst Farm, Loughborough	SK 49477 18216	shrubby	241
H40	Hurst Farm, Loughborough	SK 49460 18217	shrubby	245
H43	Hurst Farm, Loughborough	SK 49303 18070	shrubby	318

Hedge no.	Location	Mid-point grid ref	Hedge type	Length (m)
H44	Hurst Farm, Loughborough	SK 49454 17982	shrubby	150
H45	Hurst Farm, Loughborough	SK 49277 17879	shrubby	265
H46	Hurst Farm, Loughborough	SK 49592 18354	shrubby with trees	268
H47	Hurst Farm, Loughborough	SK 49817 18396	shrubby with trees	165
H49	Nanpantan Farm, Loughborough	SK 50332 17662	shrubby	228
H50	Nanpantan Farm, Loughborough	SK 50254 17536	line of trees	192
H51	Holywell Farm, Loughborough	SK 50189 17698	shrubby	262
H52	Holywell Farm, Loughborough	SK 50070 17611	shrubby	198
H53	Holywell Farm, Loughborough	SK 49990 17696	shrubby	151
H53b	Holywell Farm, Loughborough	SK 50014 17920	shrubby	301
H54	Holywell Farm, Loughborough	SK 50114 17809	shrubby	284
H55	Holywell Farm, Loughborough	SK 50276 17818	shrubby	113
H56	Holywell Farm, Loughborough	SK 50209 17998	shrubby	280
H57	Hurst Farm, Loughborough	SK 50100 18088	shrubby with trees	139
H58	Hurst Farm, Loughborough	SK 50109 18277	shrubby with trees	310
H59	Hurst Farm, Loughborough	SK 49988 18408	shrubby	122
H60	Hurst Farm, Loughborough	SK 49974 18244	shrubby	367
H62a	Hurst Farm, Loughborough	SK 50003 18131	shrubby	177
H62b	Hurst Farm, Loughborough	SK 49937 18309	shrubby	210
H63	Hurst Farm, Loughborough	SK 49856 18022	shrubby with trees	329
H64	Hurst Farm, Loughborough	SK 49729 18161	shrubby with trees	457
H65	Hurst Farm, Loughborough	SK 49367 17795	shrubby with trees	245
H66	Hurst Farm, Loughborough	SK 49562 17748	shrubby with trees	321
H67	Holywell Farm, Loughborough	SK 50639 18509	shrubby	258

**Total length (m) 11,732**

Hedgerow Assessment						
Ref.	Total sp. No.	Sp. no. / 30 m section	Species	No. of features	Important Hedge	Candidate LWS
H1	3	n/a	poor			
H2	6	2	poor			
H3a	3	n/a	poor			
H3b	7	5	rich			
<b>H4a</b>	<b>8</b>	<b>7</b>	<b>rich</b>	<b>2</b>	<b>Y</b>	<b>Y</b>
<b>H4b</b>	<b>10</b>	<b>7</b>	<b>rich</b>	<b>2</b>	<b>Y</b>	<b>Y</b>
<b>H4c</b>	<b>9</b>	<b>6</b>	<b>rich</b>	<b>1</b>	<b>Y</b>	<b>Y</b>
<b>H4d</b>	<b>10</b>	<b>7</b>	<b>rich</b>	<b>2</b>	<b>Y</b>	<b>Y</b>
<b>H4e</b>	<b>9</b>	<b>7</b>	<b>rich</b>	<b>1</b>	<b>Y</b>	<b>Y</b>
H5	5	5	rich	1		
H6	5	5	rich	1		
H7	3	n/a	poor			
H8	4	n/a	poor			
H9	7	4	poor			
H10	4	n/a	poor			
H11	2	n/a	poor			
H12	3	n/a	poor			
H13	4	n/a	poor			
<b>H14</b>	<b>10</b>	<b>5</b>	<b>rich</b>	<b>2</b>	<b>Y</b>	<b>Y</b>
H15	5	4	poor			
<b>H16</b>	<b>8</b>	<b>5</b>	<b>rich</b>	<b>2</b>	<b>Y</b>	<b>Y</b>
<b>H17</b>	<b>8</b>	<b>5</b>	<b>rich</b>	<b>3</b>	<b>Y</b>	<b>Y</b>
H18	5	n/a	poor			
H20	5	n/a	poor			
H21	4	n/a	poor			
<b>H22</b>	<b>6</b>	<b>6</b>	<b>rich</b>	<b>1</b>	<b>Y</b>	<b>Y</b>
H24	4	n/a	poor			
H25	3	n/a	poor			
<b>H26</b>	<b>9</b>	<b>6</b>	<b>rich</b>	<b>2</b>	<b>Y</b>	<b>Y</b>
H27	10	5	rich	1		
H28	7	5	rich	1		
H29	9	4	poor			
<b>H30</b>	<b>6</b>	<b>5</b>	<b>rich</b>	<b>2</b>	<b>Y</b>	<b>Y</b>
H31	7	5	rich	1		
<b>H32</b>	<b>8</b>	<b>8</b>	<b>rich</b>	<b>1</b>	<b>Y</b>	<b>Y</b>
H33	5	4	poor			
H34	9	4	poor			
H35	3	n/a	poor			
H36	3	n/a	poor			
H37	0	0	poor			
H38	4	n/a	poor			
H40	5	n/a	poor			
H43	5	n/a	poor			

Hedgerow Assessment						
Ref.	Total sp. No.	Sp. no. / 30 m section	Species	No. of features	Important Hedge	Candidate LWS
H44	6	5	rich	0		
H45	2	n/a	poor			
H46	8	5	rich	1		
H47	5	2	poor	1		
H49	4	n/a	poor			
H50	6	4	poor			
H51	3	n/a	poor			
H52	6	4	poor	2		
H53a	4	n/a	poor			
H53b	4	n/a	poor			
H54	7	2	poor	1		
H55	6	3	poor	1		
H56	4	n/a	poor			
<b>H57</b>	<b>9</b>	<b>6</b>	<b>rich</b>	<b>2</b>	<b>Y</b>	<b>Y</b>
H58	6	2	poor	1		
H59	4	n/a	poor			
H60	6	n/a	poor			
H62a	4	n/a	poor			
H62b	5	n/a	poor			
H63	6	n/a	poor			
H64	5	n/a	poor	2		
H65	6	n/a	poor	2		
H66	4	n/a	poor	2		
H67	3	n/a	poor	1		

Hedgerow Assessment (Lengths)					
Ref.	Species	Important Hedges	Length (m)	Length (m)	Length (m)
H1	poor		50		
H2	poor		240		
H3a	poor		90		
H3b	rich			157	
<b>H4a</b>	<b>rich</b>	<b>Y</b>		44	44
<b>H4b</b>	<b>rich</b>	<b>Y</b>		137	137
<b>H4c</b>	<b>rich</b>	<b>Y</b>		103	103
<b>H4d</b>	<b>rich</b>	<b>Y</b>		95	95
<b>H4e</b>	<b>rich</b>	<b>Y</b>		103	103
H5	rich			54	
H6	rich			65	
H7	poor		70		
H8	poor		35		
H9	poor		92		

Hedgerow Assessment (Lengths)					
Ref.	Species	Important Hedges	Length (m)	Length (m)	Length (m)
H10	poor		40		
H11	poor		94		
H12	poor		99		
H13	poor		145		
<b>H14</b>	<b>rich</b>	<b>Y</b>		266	266
H15	poor		113		
<b>H16</b>	<b>rich</b>	<b>Y</b>		122	122
<b>H17</b>	<b>rich</b>	<b>Y</b>		434	434
H18	poor		190		
H20	poor		148		
H21	poor		137		
<b>H22</b>	<b>rich</b>	<b>Y</b>		176	176
H24	poor		142		
H25	poor		35		
<b>H26</b>	<b>rich</b>	<b>Y</b>		119	119
H27	rich			263	
H28	rich			107	
H29	poor		264		
<b>H30</b>	<b>rich</b>	<b>Y</b>		64	64
H31	rich			181	
<b>H32</b>	<b>rich</b>	<b>Y</b>		102	102
H33	poor		80		
H34	poor		225		
H35	poor		47		
H36	poor		121		
H37	poor		87		
H38	poor		241		
H40	poor		245		
H43	poor		318		
H44	rich			150	
H45	poor		265		
H46	rich			268	
H47	poor		165		
H49	poor		228		
H50	poor		192		
H51	poor		262		
H52	poor		198		
H53 a	poor		151		
H53 b	poor		301		
H54	poor		284		
H55	poor		113		
H56	poor		280		
<b>H57</b>	<b>rich</b>	<b>Y</b>		139	139

<b>Hedgerow Assessment (Lengths)</b>					
<b>Ref.</b>	<b>Species</b>	<b>Important Hedges</b>	<b>Length (m)</b>	<b>Length (m)</b>	<b>Length (m)</b>
H58	poor		310		
H59	poor		122		
H60	poor		367		
H62 a	poor		177		
H62 b	poor		210		
H63	poor		329		
H64	poor		457		
H65	poor		245		
H66	poor		321		
H67	poor		258		
		<b>Total length (m)</b>	<b>8,583</b>	<b>3,149</b>	<b>1,904</b>

## Appendix 3 - Mature Trees

Mature Tree Data						
Ref no.	Species	Grid reference	Species	Girth (m)	Candidate Local Wildlife Site	Trees within 10% of LWS size threshold
<b>T1</b>	<b>Quercus robur</b>	<b>SK 5058 1803</b>	<b>Oak</b>	<b>4.05</b>	<b>yes</b>	
<b>T2</b>	<i>Quercus robur</i>	SK 5056 1805	Oak	3.00	no	
<b>T3</b>	<i>Quercus robur</i>	SK 5054 1803	Oak	2.30	no	
<b>T4</b>	<i>Fraxinus excelsior</i>	SK 5053 1802	Ash	1.80	no	
<b>T5</b>	<i>Quercus robur</i>	SK 5052 1801	Oak	3.15	no	
<b>T6</b>	<i>Quercus robur</i>	SK 5048 1797	Oak	2.55	no	
<b>T7</b>	<i>Quercus robur</i>	SK 5046 1795	Oak	3.45	no	yes
<b>T8</b>	<i>Quercus robur</i>	SK 5045 1794	Oak	2.25	no	
<b>T9</b>	<i>Quercus robur</i>	SK 5044 1793	Oak	3.60	no	yes
<b>T10</b>	<i>Quercus robur</i>	SK 5051 1781	Oak	2.60	no	
<b>T11</b>	<i>Quercus robur</i>	SK 5063 1785	Oak	3.70	no	yes
<b>T12</b>	<b>Fraxinus excelsior</b>	<b>SK 5065 1784</b>	<b>Ash</b>	<b>3.10</b>	<b>yes</b>	
<b>T13</b>	<b>Fraxinus excelsior</b>	<b>SK 5032 1795</b>	<b>Ash</b>	<b>3.00</b>	<b>yes</b>	
<b>T14</b>	<i>Quercus robur</i>	SK 5026 1812	Oak	2.80	no	
<b>T15</b>	<i>Quercus robur</i>	SK 5026 1808	Oak	3.10	no	
<b>T16</b>	<i>Quercus robur</i>	SK 5034 1822	Oak	2.40	no	
<b>T17</b>	<i>Fraxinus excelsior</i>	SK 5044 1825	Ash	2.10	no	
<b>T18</b>	<b>Quercus robur</b>	<b>SK 5034 1821</b>	<b>Oak</b>	<b>4.30</b>	<b>yes</b>	
<b>T19</b>	<i>Fraxinus excelsior</i>	SK 4972 1810	Ash	2.10	no	
<b>T20</b>	<i>Quercus robur</i>	SK 4972 1809	Oak	2.20	no	
<b>T21</b>	<i>Quercus robur</i>	SK 4972 1807	Oak	2.30	no	
<b>T22</b>	<i>Quercus robur</i>	SK 4972 1804	Oak	3.70	no	yes
<b>T23</b>	<i>Quercus robur</i>	SK 4972 1801	Oak	3.35	no	
<b>T24</b>	<i>Quercus robur</i>	SK 4972 1798	Oak	3.40	no	yes
<b>T25</b>	<i>Quercus robur</i>	SK 4972 1795	Oak	3.50	no	yes
<b>T26</b>	<i>Quercus robur</i>	SK 4977 1797	Oak	2.60	no	
<b>T27</b>	<i>Quercus robur</i>	SK 4980 1799	Oak	3.10	no	
<b>T28</b>	<i>Quercus robur</i>	SK 4982 1800	Oak	3.20	no	
<b>T29</b>	<i>Quercus robur</i>	SK 4998 1800	Oak	2.10	no	
<b>T30</b>	<i>Quercus robur</i>	SK 4984 1801	Oak	2.95	no	
<b>T31</b>	<i>Quercus robur</i>	SK 4985 1802	Oak	3.10	no	
<b>T32</b>	<i>Quercus robur</i>	SK 4988 1802	Oak	2.80	no	
<b>T33</b>	<i>Quercus robur</i>	SK 4992 1802	Oak	1.80	no	
<b>T34</b>	<i>Salix fragilis</i>	SK 4995 1802	Crack willow	3.30	no	
<b>T35</b>	<i>Salix fragilis</i>	SK 4995 1802	Crack willow	2.50	no	
<b>T36</b>	<i>Quercus robur</i>	SK 4996 1802	Oak	2.40	no	
<b>T37</b>	<b>Salix fragilis</b>	<b>SK 4999 1802</b>	<b>Crack willow</b>	<b>4.40</b>	<b>yes</b>	
<b>T38</b>	<i>Quercus robur</i>	SK 4973 1815	Oak	3.30	no	

Mature Tree Data						
Ref no.	Species	Grid reference	Species	Girth (m)	Candidate Local Wildlife Site	Trees within 10% of LWS size threshold
T39	<i>Quercus robur</i>	SK 4973 1820	Oak	3.25	no	
T40	<i>Quercus robur</i>	SK 4973 1823	Oak	2.60	no	
T41	<i>Quercus robur</i>	SK 4973 1827	Oak	2.75	no	
T42	<i>Quercus robur</i>	SK 4974 1833	Oak	2.90	no	
T43	<i>Quercus robur</i>	SK 4975 1838	Oak	2.50	no	
T44	<i>Quercus robur</i>	SK 4978 1839	Oak	3.70	no	yes
T45	<i>Salix fragilis</i>	SK 4947 1790	Crack willow	3.60	no	yes
T46	<i>Salix fragilis</i>	SK 4947 1790	Crack willow	3.40	no	yes
T47	<i>Quercus robur</i>	SK 4945 1789	Oak	2.30	no	
T48	<i>Quercus robur</i>	SK 4945 1789	Oak	1.70	no	
T49	<i>Quercus robur</i>	SK 4944 1788	Oak	3.00	no	
T50	<i>Quercus robur</i>	SK 4941 1786	Oak	3.05	no	
T51	<i>Quercus robur</i>	SK 4940 1784	Oak	3.00	no	
T52	<i>Quercus robur</i>	SK 4938 1781	Oak	2.80	no	
T53	<i>Quercus robur</i>	SK 4937 1780	Oak	2.30	no	
T54	<i>Quercus robur</i>	SK 4936 1778	Oak	3.40	no	yes
T55	<i>Quercus robur</i>	SK 4934 1776	Oak	2.35	no	
T56	<i>Quercus robur</i>	SK 4932 1773	Oak	2.40	no	
T57	<i>Quercus robur</i>	SK 4930 1771	Oak	3.00	no	
T58	<i>Quercus robur</i>	SK 4929 1769	Oak	2.80	no	
T59	<i>Quercus robur</i>	SK 4955 1761	Oak	2.45	no	
T60	<b>Quercus robur</b>	<b>SK 4955 1765</b>	<b>Oak</b>	<b>3.90</b>	<b>yes</b>	
T61	<i>Quercus robur</i>	SK 4956 1770	Oak	3.40	no	yes
T62	<i>Quercus robur</i>	SK 4955 1772	Oak	2.30	no	
T63	<i>Quercus robur</i>	SK 4956 1775	Oak	2.35	no	
T64	<i>Quercus robur</i>	SK 4956 1779	Oak	2.40	no	
T65	<i>Quercus robur</i>	SK 4957 1783	Oak	2.35	no	
T66	<i>Quercus robur</i>	SK 4957 1786	Oak	3.00	no	
T67	<i>Quercus robur</i>	SK 4957 1787	Oak	2.25	no	
T68	<i>Quercus robur</i>	SK 4957 1789	Oak	1.30	no	
T69	<i>Salix fragilis</i>	SK 4957 1790	Crack willow	2.60	no	
T70	<i>Salix fragilis</i>	SK 4957 1792	Crack willow	3.20	no	
T71	<i>Salix fragilis</i>	SK 4957 1792	Crack willow	1.70	no	
T72	<b>Quercus robur</b>	<b>SK 5046 1826</b>	<b>Oak</b>	<b>4.10</b>	<b>yes</b>	
T73	<b>Quercus robur</b>	<b>SK 5044 1825</b>	<b>Oak</b>	<b>4.00</b>	<b>yes</b>	
T74	<i>Quercus robur</i>	SK 5045 1811	Oak	2.50	no	
T75	<i>Fraxinus excelsior</i>	SK 5041 1823	Ash	2.20	no	
T76	<i>Fraxinus excelsior</i>	SK 5039 1823	Ash	2.50	no	
T77	<b>Quercus robur</b>	<b>SK 5029 1822</b>	<b>Oak</b>	<b>4.50</b>	<b>yes</b>	
T78	<i>Fraxinus excelsior</i>	SK 5030 1822	Ash	1.80	no	
T79	<i>Salix fragilis</i>	SK 5024 1820	Crack willow	n/a	no	



Mature Tree Data						
Ref no.	Species	Grid reference	Species	Girth (m)	Candidate Local Wildlife Site	Trees within 10% of LWS size threshold
T80	<i>Salix fragilis</i>	SK 5018 1814	Crack willow	n/a	no	
T81	<i>Quercus robur</i>	SK 5014 1811	Oak	3.70	no	yes
T82	<i>Salix fragilis</i>	SK 5013 1810	Crack willow	2.50	no	
T83	<i>Salix fragilis</i>	SK 5012 1810	Crack willow	2.50	no	
T84	<i>Acer pseudoplatanus</i>	SK 5010 1808	Sycamore	1.60	no	
T85	<i>Quercus robur</i>	SK 5010 1809	Oak	3.30	no	
T86	<i>Quercus robur</i>	SK 5007 1807	Oak	3.20	no	
T87	<i>Acer pseudoplatanus</i>	SK 5006 1806	Sycamore	2.50	no	
T88	<i>Acer pseudoplatanus</i>	SK 5005 1806	Sycamore	2.50	no	
T89	<i>Quercus robur</i>	SK 5006 1795	Oak	3.10	no	
T90	<i>Fraxinus excelsior</i>	SK 5053 1832	Ash	2.60	no	
T91	<i>Salix x sepulcralis</i>	SK 5055 1832	Weeping willow	2.00	no	
T92	<i>Fraxinus excelsior</i>	SK 5052 1836	Ash	2.80	no	yes
T93	<i>Fraxinus excelsior</i>	SK 5054 1831	Ash	2.70	no	yes
T94	<i>Fraxinus excelsior</i>	SK 5055 1832	Ash	2.10	no	
T95	<i>Fraxinus excelsior</i>	SK 5054 1830	Ash	2.80	no	yes
T96	<i>Aldus glutinosa</i>	SK 5053 1830	Alder	2.70	no	yes
T97	<i>Fraxinus excelsior</i>	SK 5053 1829	Ash	1.85	no	
T98	<i>Fraxinus excelsior</i>	SK 5052 1829	Ash	2.05	no	
T99	<i>Tilia x europaea</i>	SK 5058 1834	Common lime	2.70	no	
T100	<i>Tilia x europaea</i>	SK 5058 1835	Common lime	2.70	no	
T101	<i>Tilia x europaea</i>	SK 5059 1836	Common lime	2.80	no	
T102	<i>Prunus sp</i>	SK 5056 1837	Cherry	2.00	no	
T103	<i>Fraxinus excelsior</i>	SK 5055 1837	Ash	2.00	no	
T104	<i>Aesculus hippocastanum</i>	SK 5012 1833	Horse chestnut	2.55	no	
T105	<i>Quercus robur</i>	SK 5012 1831	Oak	1.40	no	
T106	<i>Fraxinus excelsior</i>	SK 5018 1835	Ash	1.95	no	
T107	<i>Aesculus hippocastanum</i>	SK 5012 1829	Horse chestnut	1.80	no	
T108	<i>Fraxinus excelsior</i>	SK 5012 1828	Ash	2.00	no	
T109	<i>Quercus robur</i>	SK 5013 1823	Oak	3.50	no	yes
T110	<i>Quercus robur</i>	SK 5014 1820	Oak	2.00	no	
T111	<i>Quercus robur</i>	SK 5015 1820	Oak	1.40	no	
T112	<i>Quercus robur</i>	SK 5010 1832	Oak	3.00	no	
T113	Unknown	SK 5009 1834	Unknown	n/a	no	
T114	<i>Quercus robur</i>	SK 5007 1838	Oak	3.10	no	

Mature Tree Data						
Ref no.	Species	Grid reference	Species	Girth (m)	Candidate Local Wildlife Site	Trees within 10% of LWS size threshold
T115	<i>Quercus robur</i>	SK 5034 1767	Oak	2.05	no	
T116	<i>Quercus robur</i>	SK 5067 1793	Oak	3.30	no	
<b>T117</b>	<b><i>Quercus robur</i></b>	<b>SK 5075 1788</b>	<b>Oak</b>	<b>4.65</b>	<b>yes</b>	
T118	<i>Quercus robur</i>	SK 5076 1789	Oak	2.75	no	
T119	<i>Salix fragilis</i>	SK 5077 1789	Crack willow	2.70	no	
T120	<i>Salix fragilis</i>	SK 5078 1790	Crack willow	2.20	no	
T121	<i>Salix fragilis</i>	SK 5080 1790	Crack willow	n/a	no	
<b>T122</b>	<b><i>Quercus robur</i></b>	<b>SK 5063 1794</b>	<b>Oak</b>	<b>3.80</b>	<b>yes</b>	

## Appendix 4 – Japanese Knotweed

<b>Japanese Knotweed Summary</b>				
<b>Ref no.</b>	<b>Date of survey</b>	<b>Location</b>	<b>Grid ref</b>	<b>Extent</b>
JK1	21 October 2009	H17 Holywell Farm	SK 5018 1811	2 m x 0.50 m
JK2	21 October 2009	Roadside verge adj. to H17	SK 5018 1811	4 m x 0.50 m
JK3	21 October 2009	H18	SK 5036 1759	3 m x 1 m
JK4	21 October 2009	H18	SK 5036 1758	4 m x 2 m
JK5	27 October 2009	H49	SK 5034 1763	95 m x 1 m
JK6	29 October 2009	H58	SK 5011 1827	2 m x 1 m
JK7	29 October 2009	H58	SK 5010 1829	5 m x 1.5 m