



# High Speed Rail (West Midlands - Crewe)

## Environmental Statement

### Volume 5: Technical appendices

Ecology and biodiversity

Ecological baseline data - designated sites (EC-001-000)



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## Department for Transport

High Speed Two (HS2) Limited has been tasked by the Department for Transport (DfT) with managing the delivery of a new national high speed rail network. It is a non-departmental public body wholly owned by the DfT.

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# 1 Introduction

- 1.1.1 This document is an Appendix to the ecological assessment. It provides details of the ecological designated sites relevant to the assessment of High Speed Rail (West Midlands - Crewe). The Proposed Scheme will pass through the following community areas (CA):
- CA1: Fradley to Colton;
  - CA2: Colwich to Yarlet;
  - CA3: Stone and Swynnerton;
  - CA4: Whitmore Heath to Madeley; and
  - CA5: South Cheshire.
- 1.1.2 Designated sites are shown in the Ecology Map Book, Map Series EC-01.
- 1.1.3 This Appendix should be read in conjunction with:
- Volume 2, Community area reports;
  - Volume 3, Route-wide effects;
  - Volume 4, Off-route effects; and
  - Volume 5, Appendices.
- 1.1.4 See Volume 5, Appendices EC-016-001 to EC-016-005 for ecology registers of local level effects for each of the community areas respectively and Appendices EC-017-001 to EC-017-005 for Habitats Regulations Assessment screening reports.
- 1.1.5 In addition, the baseline data used for the ecological assessment is set out in Background Information and Data (BID)<sup>1</sup>, (see BID-EC-002-000 to BID-EC-014-000) and the BID Ecology Map Books (Map Series EC-02 to EC-12) showing habitats and species relevant to the Proposed Scheme. The full list of ecological baseline data reports is as follows:
- Ecological baseline data - phase 1 habitat survey (Background Information and Data: BID-EC-002-000);
  - Ecological baseline data - protected and or notable flora (Background Information and Data: BID-EC-003-000);
  - Ecological baseline data - national vegetation classification and ancient woodland (Background Information and Data: BID-EC-004-000);
  - Ecological baseline data – hedgerows (Background Information and Data BID-EC-005-000);

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<sup>1</sup> HS2 Ltd (2017), *High Speed Two (HS2) Phase 2a (West Midlands - Crewe) Background Information and Data*, [www.gov.uk/hs2](http://www.gov.uk/hs2)

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- Ecological baseline data - river habitat, river corridor, and ditch surveys, (Background Information and Data: BID-EC-006-000);
- Ecological baseline data - amphibian and pond surveys (Background Information and Data: BID-EC-007-000);
- Ecological baseline data – reptiles (Background Information and Data: BID-EC-8-000);
- Ecological baseline data - breeding and wintering birds (Background Information and Data: BID-EC-009-000);
- Ecological baseline data - otter and water vole (Background Information and Data: BID-EC-010-000);
- Ecological baseline data - hazel dormouse (Background Information and Data: BID-EC-011-000);
- Ecological baseline data – bats (Background Information and Data: BID-EC-12-000);
- Ecological baseline data - white clawed crayfish and other invertebrate (Background Information and Data: BID-EC-013-000); and
- Ecological baseline data – fish (Background Information and Data: BID-EC-014-000).

1.1.6 Note that baseline data for badger is not made publically available due to the historic persecution of this species.

## 2 Designated sites

### 2.1 Methodology

2.1.1 Data searches were initially undertaken to identify designated sites within the following extents as defined in the Technical Note HS2 Ecological Surveys: Field Survey Methods and Standards (FSMS) included in the Scope and Methodology Report (SMR) Addendum (see Volume 5: Appendix CT-001-002):

- statutory designated sites within 10km of the Proposed Scheme (i.e. a 10km buffer either side of the centre-line of the Proposed Scheme); and
- non-statutory designated sites within 5km of the Proposed Scheme (i.e. a 5km buffer either side of centre-line of the Proposed Scheme).

2.1.2 Information on designated sites was obtained from the following data sources:

- Staffordshire Ecological Record<sup>2</sup>;
- Staffordshire Wildlife Trust;
- rECOrd<sup>3</sup>, Local Biological Records Centre for the Cheshire region;
- Cheshire Wildlife Trust;
- Consultation with Upper Moreton Farm; and
- Natural England.

### Habitats Regulations Screening Reports

2.1.3 At the HS2 Phase Two Appraisal of Sustainability stage<sup>4</sup> Habitats Regulations<sup>5</sup> screening Reports were prepared for the following sites:

- Pasturefields Salt Marsh Special Area of Conservation (SAC) (Volume 5: Appendix EC-017-003); and
- Midland Meres and Mosses Phase 1 Ramsar Site (Volume 5: Appendix EC-017-001).

2.1.4 The Habitats Regulations screening reports concluded that the Proposed Scheme would not have a significant effect on these sites, and this conclusion was agreed with Natural England and the Environment Agency in 2012.

2.1.5 Further assessment of the effects on these two internationally important sites has been undertaken as part of the Phase 2a environmental assessment (see Volume 5: EC-017-002 and EC-017-004). For Phase 2a a Habitats Regulations screening report has also been completed for the Chartley Moss element of the Midland Meres and

<sup>2</sup> Staffordshire Ecological Record, *The Ecological Database for Staffordshire*, [http://www.staffs-ecology.org.uk/html2015/index.php?title=Main\\_Page](http://www.staffs-ecology.org.uk/html2015/index.php?title=Main_Page)

<sup>3</sup> rECOrd, *Local Biological Records Centre serving Cheshire*, <http://www.record-lrc.co.uk/>

<sup>4</sup> HS2 (2013), *Sustainability Statement Volume 1: Main report of the Appraisal of Sustainability*

<sup>5</sup> Natural England (2016), *Guidance on the undertaking of Natural England's Habitats Regulations Assessments*, Version 1.1

Mosses Phase 1 Ramsar site and the West Midlands Mosses SAC (see Volume 5: EC-017-005).

## 2.2 Deviations, constraints and limitations

2.2.1 All sites within the extents defined within the SMR were then reviewed to identify those that were considered likely to be relevant to the assessment. Due to the large scale of the Proposed Scheme, only details of those sites meeting the following criteria are presented within the following baseline section:

- all statutory designated sites within a 500m radius of the Proposed Scheme;
- any other statutory designated sites which are considered potentially subject to significant effects;
- all non-statutory designated sites within the extent or adjacent to the Proposed Scheme; and
- any other non-statutory designated sites which are considered potentially subject to significant effects.

## 2.3 Baseline

### Statutory designated sites

2.3.1 Table 1 provides details of statutory designated sites relevant to the assessment, based on the criteria identified in the SMR. Sites are arranged from south to north. This information is related to the accompanying Map Series EC-01.

2.3.2 The Impact Risk Zones (IRZs) are a GIS tool developed by Natural England to make a rapid initial assessment of the potential risks to Sites of Special Scientific Interest (SSSI) posed by development proposals and indicate the types of development proposal which could potentially have adverse impacts<sup>6</sup>. The Proposed Scheme crosses a number of IRZs within the West Midlands to Crewe area, for the following SSSIs, which are also included in Table 1:

- Stafford Brook (CA2);
- Cannock Chase (CA2);
- Rawbones Meadow (CA2);
- Baswich Meadows (CA2);
- King's and Hargreaves Woods (CA3); and
- Black Firs & Cranberry Bog (CA5).

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<sup>6</sup> Natural England (2016), *Impact Risk Zones for Sites of Special Scientific Interest*, Version 2.5, [http://www.magic.gov.uk/Metadata\\_for\\_magic/SSSI%20IRZ%20User%20Guidance%20MAGIC.pdf](http://www.magic.gov.uk/Metadata_for_magic/SSSI%20IRZ%20User%20Guidance%20MAGIC.pdf)

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Table 1: Statutory designated sites: Special Areas of Conservation (SAC), Ramsar and Sites of Special Scientific Interest (SSSI) within the West Midlands to Crewe area

Site name and designation	Ordnance survey (OS) grid reference	Site description	Distance from the Proposed Scheme (m) and orientation	Relevant CA number
Blithfield Reservoir Site of Special Scientific Interest(SSSI)	SK062239	The site is Staffordshire's largest area of standing water and is nationally important for goosander, regularly supporting more than 1% of the total British wintering population. The reservoir and its woodland and farmland surroundings is an important wintering locality for an outstanding variety of birds. Certain of the grass fields adjoining the reservoir are grazed by regionally significant numbers of wigeon ( <i>Anas penelope</i> ).	738m north-west	CA1, CA2
Pasturefields Salt Marsh Special Areas of Conservation (SAC)	SJ988250	This site is the only known remaining example in the UK of a natural salt spring with inland saltmarsh vegetation. The vegetation consists of red fescue ( <i>Festuca rubra</i> ), with common saltmarsh-grass ( <i>Puccinellia maritima</i> ), lesser sea-spurrey ( <i>Spergularia marina</i> ), saltmarsh rush ( <i>Juncus gerardii</i> ) and sea arrowgrass ( <i>Triglochin maritimum</i> ) in the most saline situations.  This site is designated as it consists of inland salt meadows, an Annex 1 priority habitat.	60m west	CA2
Pasturefields Salt Marsh SSSI	SJ988250	An inland location for a plant community of close affinity with grazed coastal saltmarshes and one of only two known extant brine spring marshes in the country. An extremely rare and vulnerable habitat important for the understanding of plant ecology and distribution and vegetational history in the British Isles.  Despite its small area (under 0.5ha) and the degree of past disturbance the saltmarsh contains a number of halophytic plants, the most notable of these is sea plantain ( <i>Plantago maritima</i> ), known only from one other comparable inland site in Britain. The community is classified as Red Fescue <i>Festuca rubra</i> Saltmarsh, and shows three distinctive plant associations reflecting differences in salinity, waterlogging and poaching.  The site also has local importance for breeding waders – snipe ( <i>Gallinago gallinago</i> ), redshank ( <i>Tringa tetanus</i> ) and lapwing ( <i>Vanellus vanellus</i> ).	60m west	CA2
Chartley Moss SSSI	SK033282	This site is connected to the greater series of lowland open water and peatland sites set in depressions in glacial drift left by receding ice sheets of the north-west midlands. Chartley Moss is a partially wooded basin mire occupying two depressions in glacial deposits overlying Keuper Marl. The western basin contains a raft of oligotrophic sphagnum peat floating above a deep water body, the largest	170m south-east	CA2

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Site name and designation	Ordnance survey (OS) grid reference	Site description	Distance from the Proposed Scheme (m) and orientation	Relevant CA number
		<p>'schwingmoor' in Britain. This feature is considered to be the result of partial solution and collapse of underlying saltbearing strata and is an exceptionally uncommon phenomenon, observed only at Chartley Moss and Wybunbury Moss in Cheshire. There is a range of vegetation types corresponding to variations in water level and water chemistry.</p> <p>An open 'sphagnum lawn' community occurs principally of <i>Sphagnum recurvum</i>. Associated bog plants occur abundantly, round-leaved sundew (<i>Drosera rotundifolia</i>), common and hare's-tail cotton-grass (<i>Eriophorum angustifolium</i> and <i>E. vaginatum</i>), cross-leaved heath (<i>Erica tetralix</i>), cranberry (<i>Vaccinium oxycoccus</i>) and bog rosemary (<i>Andromeda polifolia</i>), – the last at the south-eastern limit of its British distribution. Away from the centre of the peat raft there is a transition from open woodland of stunted Scots pine (<i>Pinus sylvestris</i>) to taller, denser pine stands.</p>		
West Midland Mosses SAC	SK 0332282	The SAC includes four sites, one of which is Chartley Moss. They support large basin mires which have developed on quaking bogs, known as 'schwingmoors', together with associated hollows and pools showing various types and stages of development, including raised bog on solid peat at two sites. This complex of habitats gives rise to a diverse assemblage of associated plants and invertebrates of international significance.	170m south-east	CA2
Chartley Moss National Nature Reserve (NNR)	SK0332282	The largest example of a floating peat bog, or schwingmoor, in Britain. The sphagnum lawn supports important botanical communities adapted to grow in this hostile environment. These plants in turn support a large number of invertebrates.	170m south-east	CA2
Stafford Brook SSSI	SK 023194	This site is designated for its purple moor-grass ( <i>Molinia caerulea</i> ) marshy grassland which is a nationally rare habitat in lowland England.	2.9km south	CA2
Cannock Chase SSSI	SJ 990180	This site is designated for its diverse semi natural vegetation, which comprises nationally important ancient woodland, lowland heathland and wet heathland. Cannock Chase supports a major breeding concentration of fallow deer.	2.7km south	CA2
Rawbones Meadow SSSI	SJ 985225	This site is designated for its wetland habitats that support a notable breeding population of snipe	800m south	CA2
Baswich Meadows SSSI	SJ 950227	This site is designated for its wetland habitats that support notable breeding populations of redshank, snipe and lapwing.	2.2km south-west	CA2

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Site name and designation	Ordnance survey (OS) grid reference	Site description	Distance from the Proposed Scheme (m) and orientation	Relevant CA number
Doxey and Tillington Marshes SSSI	SJ 906245	This site is designated for its wetland habitats that support notable breeding populations of snipe, redshank and lapwing.	3.1km south-west	CA2
King's and Hargreaves Woods SSSI	SJ 806402	The site is designated for two ancient woodland sites with mature timber and dead wood that support an outstanding assemblage of ground beetles, including nationally uncommon species. The site is also important for its moths and breeding bird assemblage.	1.8km north-east	CA3
Stone Meadows Local Nature Reserve (LNR)	SJ893341	This site is made up of three separate meadows along the River Trent as it passes Stone. The site is designated with the objective to enhance the grassland habitats and floral diversity, create and restore wetland features and maintain notable species, black poplar ( <i>Populus nigra</i> ), snipe, barn owl ( <i>Tyto alba</i> ).	107m north-east	CA3
Midland Meres and Mosses - Phase 1 Ramsar	SJ744484	The site is a series of lowland open water and peatland sites set in depressions in glacial drift left by receding ice sheets. The 16 component sites include nutrient-rich water bodies (meres), associated fringing habitats of reed swamps, fen, carr and damp pasture, and floating quaking bog (schwingmoor). The wide range of resulting habitats supports numerous rare species of plants and invertebrates.	283m north-east	CA5
Betley Mere SSSI	SJ744482	This site consists of a series of lowland open water and peatland sites set in depressions in glacial drift left by receding ice sheets.  The site contributes to a nationally important series of open water and peatland sites. Among the series of meres, Betley Mere SSSI is particularly noteworthy due to its diversity of plant communities. Betley is highly rated among the meres for the diversity of plant communities, the variety of higher plant species and the large areas of reedswamp, alder ( <i>Alnus glutinosus</i> ) and willow ( <i>Salix</i> sp.) woodland and species-rich tall fen. The last community and an acidic marshy grassland type found in the wettest parts of the adjoining pastures, are now of very restricted distribution in Staffordshire. The pastures north of Betley Mere occupy the site of a former raised bog and comprise of a range of semi-natural grassland types reflecting differences in peat nutrient status, drainage and management treatments. The site also attracts many birds throughout the year and more than 50 species breed in the area, including little and great crested grebes ( <i>Tachybaptus ruficollis</i> ) and ( <i>Podiceps cristatus</i> ), grey wagtail ( <i>Motacilla cinerea</i> ) and seven species of warbler.	283m north-east	CA5

Site name and designation	Ordnance survey (OS) grid reference	Site description	Distance from the Proposed Scheme (m) and orientation	Relevant CA number
Black Firs & Cranberry Bog SSSI	SJ 748503	The site is designated as an outstanding example of a schwingmoor basin mire, where a 'lawn' of Sphagnum moss (Cranberry Bog) has formed over a kettle-hole lake of glacial origin. Part of the lake remains as an open water part of the site (Black Mere). Black Firs is an acid valley alderwood on a peat-filled depression.	1.1km east	CA5
Wybunbury Moss SSSI	SJ 697502	A schwingmoor basin mire also supporting an outstanding assemblage of invertebrates.	1.8km south-west	CA5

2.3.3 Additionally, the Meres and Mosses Nature Improvement Area (NIA), located between Checkley Lane and Gonsley Green Farm within CA5, lies within the area of land for the Proposed Scheme. The Meres and Mosses NIA is one of 12 national NIAs set up by the government in 2012 to create joined up resilient ecological networks at the landscape scale. The focus is to improve and protect these core sites and connect them by restoring wetland habitats in and around the site, resulting in connectivity of high quality habitats that can provide both better conditions for wildlife and the capacity for species to move from one core site to another.

2.3.4 Any additional relevant information on habitats or animal populations within these designated sites is given in the relevant species reports.

### Non-statutory designated sites

2.3.5 In Staffordshire the Wildlife Trust identifies Local Wildlife Sites (LWS) (previously known as Sites of Biological Importance (SBI)) and Biodiversity Alert Sites (BAS).

2.3.6 LWS are generally the best remaining examples within Staffordshire of habitats which rate highly on the basis of such factors as naturalness, diversity or rarity of species or communities. These sites are frequently the remnants of larger areas of semi-natural vegetation, which may not be either sufficiently extensive or undisturbed to warrant SSSI status but are important examples of characteristic or notable vegetation types or habitat complexes (sometimes with associated dependent plant or animal species). As such, they contribute the most significant element in the county's nature conservation resources, most of which is irreplaceable in the event of loss or damage<sup>7</sup>. They are of county/metropolitan value.

2.3.7 BAS are of lower intrinsic quality, smaller size or have suffered damage or disturbance. Nevertheless, they collectively form a significant part of Staffordshire's nature conservation resource, and, in some cases, a valuable reserve series for some of the LWS. They are recognised as being of a more local interest by the Staffordshire Wildlife Trust and are considered here to be of district/borough value.

2.3.8 In Cheshire only sites of county value have been identified. These are Local Wildlife Sites, which are sites with 'substantive nature conservation value'. They are defined

<sup>7</sup> Staffordshire Wildlife Trust (2011), *Guidelines for the selection of Sites of County Biological Importance in Staffordshire*, Version 4.02

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areas identified and selected locally for their nature conservation value, based on important, distinctive and threatened habitats and species with a national, regional and (importantly) a local context<sup>8</sup>.

2.3.9 Table 2 provides details of non-statutory designated sites of higher intrinsic quality, the LWS, relevant to the assessment, based on the criteria identified in the SMR. Sites are ordered south to north. This information is related to the accompanying Map Series EC-01.

Table 2: Non-statutory designated sites: Local Wildlife Sites (LWS) relevant to the assessment in the West Midlands to Crewe area

Site name and designation	OS grid reference	Site description	Distance from the Proposed Scheme (m) and orientation	Relevant CA number
Curborough House hedgerows LWS	SK134127	Two species-rich hedges, including several standard trees. Both hedges had associated small ditch and a 2m grass verge on one side.	1% of the hedge is within the Proposed Scheme	CA1
Big Lyntus LWS	SK132130	A mixture of mixed semi-natural broadleaved that was clear felled during the second world war and a number of adjoining compartments including planted broadleaves and planted conifers with a diverse ground flora including bluebell ( <i>Hyacinthoides non-scripta</i> ) and yellow archangel ( <i>Lamium galeobdolon</i> ).	Within the Proposed Scheme	CA1
King's Bromley Wharf to Fradley Junction, Coventry Canal LWS	SK133134	Two lengths of canal that meet at Fradley Junction that support diverse bands of both marginal and emergent vegetation, which include several uncommon and rare species for the county.	Within the Proposed Scheme	CA1
Woodend Lock (near) LWS	SK131132	A small deciduous wood, beside the Trent and Mersey Canal, that is bordered by a small stream on its western boundary and which contains a steep-sided pond.	168m south-west	CA1
Pool Wood and Fradley Reservoir LWS	SK140140	This site comprises Fradley Reservoir the woodland that surrounds it and remnants of the once more extensive Pool Wood and Pool Wood Pool. The woodland around the reservoir comprises mainly sycamore ( <i>Acer pseudoplatanus</i> ).	82m north-east	CA1
Ravenshaw Wood, Black Slough and Slaish LWS	SK126137	The site is comprised of the contiguous areas of woodland known as The Slaish, east of The Slaish, Black Slough, and Ravenshaw Wood that is connected to the other woods by a small block of grassland with scattered trees.	160m west	CA1
John's Gorse LWS	SK107142	Semi-natural broad-leaved with a canopy made up of sycamore, hazel ( <i>Corylus avellana</i> ) and rowan ( <i>Sorbus aucuparia</i> ). Ground flora is poor here with bluebells only occurring rarely, mainly dominated by grasses.	Directly adjacent to the Proposed Scheme	CA1

<sup>8</sup> Cheshire Wildlife Trust, *Local Wildlife Site Selection Criteria for the Cheshire region*

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Site name and designation	OS grid reference	Site description	Distance from the Proposed Scheme (m) and orientation	Relevant CA number
Kings Bromley Pit (north-west of) (Manor Park) LWS	SK113169	A large LWS comprising a number of gravel pits that are now used for recreational pursuits. Areas of amenity grassland, acidic grassland with scrub, semi-natural and planted broadleaved woodland, carr, reed swamp and disturbed ground adjoin the pools.	Adjacent to the Proposed Scheme	CA1
Trentside Meadows LWS	SK101170	Three floodplain meadows grazed by cattle. The grassland is rank across most of the site but indicators of more species rich grassland are still present in patches.	Within the Proposed Scheme	CA1
Quintons's Orchard LWS	SK087184	A sandy bottomed pond that supports floating aquatic vegetation, and which is surrounded by fringing scrub. This site has not been surveyed since 1991 due to unknown landowner information or refused permission.	114m south-west	CA1
Pipe Wood Lane (hedge 4) LWS	SK087191	An important hedgerow.	Within the Proposed Scheme	CA1
Cawarden Springs Wood LWS	SK062181	Mostly an ancient semi-natural woodland remnant now used as a pheasant covert and disturbed by extensive felling roughly 100 years ago, leaving standards.	Partially within land required for the Proposed Scheme	CA1
Newlands Lane (hedge 6) LWS	SK066211	A hedge valued, in particular for its connectivity and hedge structure. The hedge has 17 standard trees along its length and two young trees. This hedge has species such as field maple ( <i>Acer campestre</i> ), ash ( <i>Fraxinus excelsior</i> ), both wych and English elm ( <i>Ulmus glabra</i> and <i>U. minor</i> ) and black bryony ( <i>Dioscorea communis</i> ).	Within the Proposed Scheme	CA1
Lount Farm LWS	SK027227	<p>Five fields with unimproved sympathetically managed wet grassland through which several wet ditches cross. Field 1 contains MG<sup>9</sup><sub>5</sub> grassland and fields 2, 3 and 4 have predominantly MG<sub>4</sub>. Field 5 is drier and is not as species rich.</p> <p>Consultation response from Upper Moreton Farm reported sightings of recent barn owl activity in the vicinity of Lount Farm. The land consists of an area of unimproved grassland/lowland meadows and hosts southern marsh orchid (<i>Dactylorhiza praetermissa</i>), adders' tongue fern (<i>Ophioglossum vulgatum</i>) and over one hundred species of flowers and grasses. The land hosts an abundance of wildlife species from ringlet butterflies (<i>Aphantopus hyperantus</i>), chimney sweeper moths (<i>Odezia atrata</i>), lapwings, barn owl and brown hares (<i>Lepus europaeus</i>).</p>	Within the Proposed Scheme	CA1/CA2

<sup>9</sup> Rodwell, J. S. (ed.) (1992.), *A term within the National Vegetation Classification referring to Mesotrophic Grassland, sub class 5*

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Site name and designation	OS grid reference	Site description	Distance from the Proposed Scheme (m) and orientation	Relevant CA number
Tixall Broad Water LWS	SJ993229	A stretch of canal from just south-west of Tixall Lock to Haywood Junction, which has a quite diverse marginal flora and includes locally uncommon species such as sweet flag ( <i>Acorus calamus</i> ), common reed ( <i>Phragmites australis</i> ) and greater tussock sedge ( <i>Carex paniculata</i> ).	124m south	CA2
Lionlodge Covert LWS	SJ988239	A large mixed woodland used for pheasant shooting that supports several ancient woodland indicator species in the ground flora. There is an area of degraded inland saltmarsh supporting stiff saltmarsh-grass ( <i>Puccinellia rupestris</i> ) and saltmarsh rush ( <i>Juncus gerardii</i> ) as well as breeding lapwing.	Within the Proposed Scheme	CA2
Hopton Pools (north of) LWS	SJ952259	A small wet unimproved meadow surrounded by very tall uncut hedges. The water parts of the meadows contain good numbers of heath spotted-orchid ( <i>Dactylorhiza maculata</i> ).	197m north	CA2
Pirehill (north of) LWS	SJ907311	A fishing pool and osier bed located near Aston-by-Stone close to the A34. The site is surrounded by semi-improved and improved agricultural land and consists of a large fishing pool and a stretch of wet woodland to the west.	Directly adjacent to the Proposed Scheme	CA3
Micklow Wood LWS	SJ891329	An area of mixed deciduous woodland with a reasonable diversity of species.	191m north-east	CA3
Filly Brook (west of Stone) LWS	SJ893335	Semi-improved damp pasture.	Within the Proposed Scheme	CA3
Pool House Wood LWS	SJ882333	Damp deciduous woodland.	Within the Proposed Scheme	CA3
Highlow Meadows LWS	SJ872341	Highlow Meadows support a range of semi-natural habitat types including semi-improved grassland, species-rich marshy grassland (Purple Moor-grass and Rush Pasture Habitat of Principal Importance) and broad-leaved woodland.	Within the Proposed Scheme	CA3
Darlaston Wood LWS	SJ883351	Ancient replanted woodland comprising an even aged mature mixed plantation on ground with a wide range of soil conditions. Throughout the wood are banks and hollows leading to a mosaic of dry and wet ground encouraging a diverse ground flora.	188m north-east	CA3
Lodge Covert LWS	SJ863359	A small planted broadleaved woodland dominated by sycamore with wych elm.	Partially within land required for the Proposed Scheme	CA3
Closepit Plantation LWS	SJ853363	Deciduous woodland dominated by sycamore. Both pools very eutrophic and	3% is within the Proposed	CA3

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Site name and designation	OS grid reference	Site description	Distance from the Proposed Scheme (m) and orientation	Relevant CA number
		not supporting much diversity. The wood is tipped in at regular intervals.	Scheme	
Clifford's Wood LWS	SJ837374	Deciduous oak-beech woodland. Oaks seem to be about 150-200 years old. The limes are mature. The central area of the wood is planted with conifers and used for pheasant rearing.	Within the Proposed Scheme	CA3
Hatton Common LWS	SJ828382	Semi-natural woodland and conifer plantation with a heathy ground flora.	Directly adjacent to the Proposed Scheme	CA3
Swynnerton Old Park LWS	SJ827386	Ancient replanted woodland, now an extensive conifer plantation with an often heathy ground flora, especially adjacent to and along the rides.	Directly adjacent to the Proposed Scheme	CA3
Moat Wood and Brickyard Wood LWS	SJ799420	An open broadleaved woodland with a ground flora of mainly bramble ( <i>Rubus fruticosus</i> agg.) and bluebell. The woodland has previously been managed for timber.	Directly adjacent to the Proposed Scheme	CA4
Whitmore Wood LWS	SJ792416	Coniferous plantation and a stand of semi-natural broadleaved woodland with most of the diversity in the ground flora confined to rides and tracksides. A stream supports wet woodland vegetation.	Within the Proposed Scheme	CA4
Hey Sprink (wood south-west of) LWS	SJ791423	A narrow ravine colonised by broadleaved woodland with a mixed range of ancient woodland indicator species.	Within the Proposed Scheme	CA4
Upper Bitterns Wood LWS	SJ767429	An oak ( <i>Quercus</i> sp.) woodland with frequent ash the majority of which are mature coppiced stands. Rowan, alder and silver birch ( <i>Betula pendula</i> ) are occasional.	142m south-west	CA4
The Lum (River Lea Corridor) LWS	SJ761452	A semi-natural broad-leaved wet woodland noted on the Natural England's Ancient Woodland Inventory which exhibits good ancient woodland ground flora and wet woodland species.	Directly adjacent to the Proposed Scheme	CA4
Grafton's Wood LWS	SJ757453	The woodland is typical alder carr, the ground flora represents a mixture of ancient woodland spring flora indicators and wet woodland indicators. The River Lea flows through the woodland in a north westerly direction.	Directly adjacent to the Proposed Scheme	CA4
Wrinehill Wood LWS	SJ752449	One of the best examples of ancient semi-natural woodland in Staffordshire, with intact typical ancient ground flora. The wood has no ancient trees because it was clear felled during the First World War.	7m south-west	CA4
Basford Brook and Mere Gutter LWS	SJ730512	Gutter Mere is a small watercourse south of Crewe, flowing out of Betley Mere, and changing its name to Basford Brook near the village of Weston Listed as one of three key sites for white-clawed crayfish in Cheshire and a 'Local Key Area' for water	Partially within the Proposed Scheme	CA5

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Site name and designation	OS grid reference	Site description	Distance from the Proposed Scheme (m) and orientation	Relevant CA number
		vole.		
Blakenhall Moss LWS	SJ722482	A raised lowland bog.	319m south-west	CA5
Basford Brook LWS	SJ729512	The site comprises two parts; a northern section and a southern section. It supports habitats including neutral grassland, scrub, broadleaved plantation woodland and open water / marshy grassland	Partially within the Proposed Scheme	CA5

2.3.10 Table 3 provides details of non-statutory designated sites of comparatively lower intrinsic quality, the BAS, relevant to the assessment, based on the criteria identified in the SMR. Sites are ordered south to north. This information is related to the accompanying Map Series EC-01.

Table 3: Non-statutory designated sites: Biodiversity Alert Sites (BAS) relevant to the assessment in the West Midlands to Crewe area

Site name and designation	OS grid reference	Site description	Distance from the Proposed Scheme (m) and orientation	Relevant CA number
Fradley Wood BAS	SK133135	A large area containing many woodland blocks including both conifer and broadleaved plantation. Large areas of woodland have been felled and the land returned to agriculture or left fallow.	Within the Proposed Scheme	CA1
Riley Hill BAS	SK114151	Old sand and gravel pits, part flooded to provide pools for angling which are surrounded by woodland. Remainder is an open disturbed area with a very diverse weed flora. Tipping occurring in 1983 affected some of the woodland and open water within the BAS.	Within the Proposed Scheme	CA1
Stockwell Heath (pond at) BAS	SK122161	A small village pool with a wide range of aquatic and submerged plant species, however, many of these may have been planted.	Within the Proposed Scheme	CA1
Crawley Lane (hedge 4) BAS	SK122161	No description available.	Within the Proposed Scheme	CA1
Pipe Wood Lane (hedge 3) BAS	SK088191	A hedge valued, in particular for its large number of species (13 species) in the hedge canopy and its good structure. The hedge has four standard trees along its length and two young trees. There is also a small bank.	Within the Proposed Scheme	CA1
Long Mets Lane (hedge 1) BAS	SK066211	A hedge valued, in particular for its connectivity and hedge structure. The hedge has seven standard trees along its length.	Within the Proposed Scheme	CA1
Finner's Hill hedgerows BAS	SK056212	Two hedges values for their large number of species (16 species) in the hedge canopy and their good height and structure. The hedges have 21 standard trees each and	Within the Proposed Scheme	CA1

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Site name and designation	OS grid reference	Site description	Distance from the Proposed Scheme (m) and orientation	Relevant CA number
		eight young trees which are beneficial to the regeneration. There are banks running alongside.		
Moor Lane, Colton (hedge 1) BAS	SK055215	A hedge valued, in particular for its large number of species (15 species) in the hedge canopy and its good structure. The hedge has 15 standard trees along its length and one young tree. There is also a small bank running alongside the hedge.	Within the Proposed Scheme	CA1
Sheracop Lane (hedge 1) BAS	SK052222	A hedge valued, in particular for its large number of species (15 species) in the hedge canopy. The hedge has 14 standard trees along its length and five young trees which are beneficial to the regeneration.	6m south-east	CA1
Bishton (north of) BAS	SK023221	Hedges with a rich complement of woody species, which run either side the lane from Bishton to Moreton Grange, for approximately 1km north from Bishton Lane Farm.	Within the Proposed Scheme	CA2
Tixall Park Pool BAS	SJ970237	A large pool with a small island, the tree cover comes right up to the edge and this is then preceded by a good amount of marginal vegetation.	Directly adjacent to the Proposed Scheme	CA2
New Plantation BAS	SJ906291	This area of planted broadleaf woodland containing two small areas of standing water flanked by arable land and semi-improved grassland.	Directly adjacent to the Proposed Scheme	CA2
Beatty Hall BAS	SJ869338	A small area of broadleaved woodland, dominated by hazel, surrounding three small pools. The tree canopy is fairly open, but the emergent vegetation is negligible.	49m north-west	CA3
Lower Hatton BAS	SJ832367	This site comprises mainly immature mixed broadleaved/conifer plantation, with a small area of semi-natural woodland, an area of semi-improved neutral grassland and a small pond with diverse marginal vegetation.	217m east	CA3
Radwood Copse and Railway Verges BAS	SJ775422	A birch dominated canopy over a heavily grazed turf.	Directly adjacent to the Proposed Scheme	CA4
Manor Road Verges BAS	SJ773429	Verges supporting a rich mix of ancient woodland indicators as well as species which indicate unimproved neutral grassland.	Within the Proposed Scheme	CA4
Red Lane BAS	SJ765433	A lane, not used by vehicles, but is a public footpath. The section surveyed runs for about 750m and is lined by well-developed hedgerows. The southern line contains oak, ash, silver birch and sycamore as standards throughout, all of which are occasional.	Within the Proposed Scheme	CA4
Wrinehill Wood (east of) BAS	SJ754450	A linear strip of woodland in a north-south gully. The northern end starts off as a scrub line represented by goat willow ( <i>Salix</i>	Directly adjacent to the Proposed	CA4

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Site name and designation	OS grid reference	Site description	Distance from the Proposed Scheme (m) and orientation	Relevant CA number
		<i>caprea</i> ) then widens to a thin strip of woodland characterised by locally abundant sycamore (to north) and locally dominant oak (to south).	Scheme	

## 3 References

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