

TESCO STORES LTD



HAWKINS LANE,
BURTON-UPON-TRENT

Ecological Assessment

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1. INTRODUCTION

1.1. Background & Proposals

- 1.1.1. Aspect Ecology was commissioned by Tesco Stores Ltd to undertake an Ecological Assessment of the site at Hawkins Lane, Burton-upon-Trent (see Plan 2183/ECO1).
- 1.1.2. The proposals for the site are for a new Tesco retail store with associated car parking, a petrol filling station, access roads and landscaping (see Appendix 1).

1.2. Site Characteristics

- 1.2.1. The site is situated within the north east of Burton-upon-Trent, approximately 0.8km north east of Burton-on-Trent rail station. The site is bounded to the south east by Hawkins Lane and existing industrial development, with further existing development beyond. To the south and south west of the site is existing residential and commercial development along the main A511 Horninglow Road, while to the north west the site is bounded by the main Burton-upon-Trent to Derby railway line. To the north east of the site is existing industrial and commercial development within Manor Trading Estate.
- 1.2.2. The site itself is comprised almost entirely of open, cleared ground, which is largely dominated by recolonising vegetation, developing grassland, Bramble scattered scrub and trees, along with areas of hardstanding and a number of spoil mounds.

1.3. Ecological Assessment

- 1.3.1. This document assesses the ecological interest of the site as a whole. The importance of the habitats present is evaluated. Where necessary mitigation measures are recommended so as to safeguard any significant existing ecological interest within the site and where appropriate, reference is also made to both the National and Local Biodiversity Action Plans.

2. SURVEY METHODOLOGY

2.1. The methodology utilised for the survey work can be split into 3 areas, namely desktop study, habitat survey and faunal survey. These are discussed in more detail below.

2.2. Desktop Study

2.2.1. In order to compile background information on the site and its immediate surroundings, Staffordshire Ecological Record (SER) was contacted. Information received from SER is referred to in the text and reproduced where appropriate on Plan 2183/ECO2.

2.2.2. Further information on ecological designations from a wider search area was also obtained from the online Multi-Agency Geographic Information for the Countryside (MAGIC) database and Natural England's 'Nature on the Map'. This information is reproduced at Appendix 2 and, where appropriate, on Plan 2183/ECO2.

2.2.3. In addition, records of any protected, rare or notable species within the local area were obtained from the National Biodiversity Network (NBN) database. This information is reproduced at Appendix 3.

2.3. Habitat Survey Methodology

2.3.1. Survey work was carried out between August and October 2010 to ascertain the general ecological value of the land contained within the boundaries of the site and to identify the main habitats and associated plant species, with notes on faunal utilising the site.

2.3.2. The site was surveyed based around extended Phase 1 survey methodology¹, together with an assessment of the species composition of each habitat. This technique provides an inventory of the basic habitat types present and allows identification of areas of greater potential which require further survey. Any such areas identified can then be examined in more detail.

2.3.3. Using the above method, the site was classified into areas of similar botanical community types with a representative sample of those species present at the time of the survey being described. It is upon this that the ecological assessment is based.

2.3.4. All of the species that occur in each habitat would not necessarily be detectable during survey work carried out at any given time of year since different species are apparent during different seasons. Survey work was undertaken during the optimal seasonal period for botanical work, therefore allowing a robust assessment of the intrinsic ecological interest of the site to be made.

2.4. Faunal Surveys

2.4.1. General faunal activity, such as birds or mammals observed visually or by call during the course of the surveys was recorded. Specific attention was

¹ Handbook for Phase 1 habitat survey: A technique for environmental audit. JNCC, 2010.

also paid to the potential presence of any protected, rare or notable species with specific surveys conducted with respect to reptiles and invertebrates.

Reptiles

- 2.4.2. Reptile surveys were carried out based on the methodologies set out within the 'Herpetofauna Workers Manual' JNCC 1998 and within advice sheet 10 'Reptile Survey' Froglife 1999 of suitable habitats within the site to establish the presence/absence of reptiles.
- 2.4.3. A total of 80 sections of 50x50cm squares of thick roofing felt were placed out on the site within areas of suitable habitat to act as artificial refugia. Refugia are favoured, as reptiles are ectothermic (cold blooded) and will preferentially use such refugia to raise their body temperature at certain times of the day. Reptiles typically take advantage of the fact that these refugia warm up more quickly than the surrounding areas and during certain times of the day, depending on weather conditions, will sit directly under the mats. Hence by checking these refugia at appropriate times reptiles can be identified and captured by hand.
- 2.4.4. The optimal window for reptile surveys to be carried out is between April and September, albeit surveys may also be undertaken in March and October, dependent on suitable weather conditions. Reptile survey work was conducted at the site during September and early October 2010.
- 2.4.5. The artificial refugia were checked on 7 separate occasions at appropriate times of the day (morning and early evening) during suitable weather conditions (as set out at Table 1 below) to identify the presence or absence of common reptile species at the site.
- 2.4.6. In addition, reptiles were actively searched for in any other suitable locations throughout the site. Likely refuges such as logs, sheets of metal and other rubbish were particularly targeted, where these were present.

Survey	Survey Date	Temperature of artificial refugia	Air Temperature	Wind	Cloud Cover
1	07 September 2010	Varied (warm-hot)	21°C	Gentle Breeze (Beaufort 3)	40%
2	10 September 2010	Cool	15°C	Moderate breeze (Beaufort 4)	100%
3	23 September 2010	Varied (cool-warm)	18°C	Light breeze (Beaufort 2)	100%
4	26 September 2010	Varied (cool-warm)	11°C	Gentle Breeze (Beaufort 3)	90%
5	04 October 2010	Varied (cool-warm)	18°C	Light breeze (Beaufort 2)	20%
6	05 October 2010	Varied (cool-warm)	17°C	Light breeze (Beaufort 2)	100%
7	07 October 2010	Warm	15°C	Calm (Beaufort 0)	80%

Table 1: Details of weather conditions of Reptile Survey visits undertaken at the site during September and early October 2010.

Invertebrates

- 2.4.7. Specific invertebrate scoping survey work was undertaken by Colin Plant Associates Consultant Entomologists in August 2010 in order to examine the specific potential for the site to support diverse or important assemblages of invertebrates (see Appendix 4)

3. ECOLOGICAL DESIGNATIONS

3.1. The designations of nature conservation importance and areas of ancient woodland identified within the vicinity of the site are shown at Plan 2183/ECO2.

3.2. Statutory Designations

3.2.1. No statutory nature conservation designations have been identified within or adjacent to the site. The nearest such designation is Scalpcliff Hill Local Nature Reserve (LNR), located approximately 1.3km south east of the site. Scalpcliff Hill LNR was designated in 1992 and comprises an area woodland (including ancient woodland) and wood pasture, totalling an area of approximately 7.9Ha.

3.3. Non-statutory Designations

3.3.1. No non-statutory nature conservation designations within or adjacent to the site have been identified. The nearest such designation identified is Trent Valley Washlands Site of Biological Importance (SBI), located approximately 0.8km south east of the site. Information received from SER in relation to this SBI sets out that the designation comprises predominately species poor grassland, swamp vegetation and broadleaved woodland along the banks of the River Trent.

3.4. Ancient Woodland.

3.4.1. There are no areas of ancient woodland situated within or adjacent to the site. The nearest area of ancient woodland is within Scalpcliffe LNR, located approximately 1.4km south east of the site (see Plan 2183/ECO2), as discussed above.

4. HABITATS & ECOLOGICAL FEATURES

4.1. The following habitats/ecological features were identified within the site:

- Bare / Recolonising Ground and Developing Grassland
- Scrub, Bramble and Trees
- Hardstanding, Spoil Heaps and Structures

4.2. The locations of these habitat types and features are represented on Plan 2183/ECO3 and described in detail below, with an account of the representative plant species present, where appropriate.

4.3. **Bare / Recolonising Ground and Developing Grassland**

4.3.1. The vast majority of the site comprises a mixture of bare ground, recolonising vegetation and developing grassland that has developed over a stony substrate, apparently following the demolition and clearance of former industrial development (see Plan 2183/ECO3, Photograph 1). The site appears vacant and disused, such that the vegetation appears to be progressing through normal successional processes, with abundant grasses and developing scrub throughout, particularly associated with the margins (see Plan 2183/ECCO3, Photograph 2). Grass species present were recorded to be dominated by Yorkshire-fog *Holcus lanatus*, False Oat-grass *Arrhenatherum elatius* and Fescues *Festuca* spp., with abundant colonising ruderal herbs recorded throughout including Ribbed Melilot *Melilotus officinalis*, Rosebay Willowherb *Chamerion angustifolium*, Ragwort *Senecio jacobaea*, Spear Thistle *Cirsium vulgare*, Creeping Thistle *Cirsium arvense*, Mugwort *Artemisia vulgaris*, Blue Fleabane *Erigeron acer*, Black Medick *Medicago lupulina*, Colt's-foot *Tussilago farfara*, Canadian Fleabane *Conyza canadensis*, Lesser Trefoil *Trifolium dubium*, Hop Trefoil *Trifolium campestre*, Dandelion *Taraxacum officinale* agg., Ribwort Plantain *Plantago lanceolata*, Red Clover *Trifolium pratense*, White Clover *Trifolium repens*, Common Centaury *Centaureum erythraea*, Great Mullein *Verbascum thapsus*, Tufted Vetch *Vicia cracca*, Greater Plantain *Plantago major*, Common Toadflax *Linaria vulgaris*, Common Vetch *Vicia sativa*, Scentless Mayweed *Tripleurospermum inodorum*, Great Willowherb *Epilobium hirsutum*, Red Bartsia *Odontites vernus*, Broad-leaved Dock *Rumex obtusifolius*, Teasel *Dipsacus fullonum*, Broad-leaved Everlasting-pea *Lathyrus latifolius*, Weld *Reseda luteola*, Broom *Cytisus scoparius* and Hogweed *Heracleum sphondylium*, with more occasional Wild Parsnip *Pastinaca sativa*, Horse-radish *Armoracia rusticana*, Prickly Lettuce *Lactuca serriola*, Perforate St John's-wort *Hypericum perforatum*, Large-flowered Evening Primrose *Oenothera glazioviana*, Bladder Campion *Silene vulgaris*, Purple Toad-flax *Linaria purpurea*, Lady's-mantle *Alchemilla* spp., Pampas Grass *Cortaderia selloana* and Jack-go-to-bed-at-noon *Tragopogon pratensis*.

4.4. **Scrub, Bramble and Trees**

4.4.1. Abundant scattered scrub is present throughout the site, with more concentrated areas present associated with the site boundaries, particularly in the north east of the site, as shown at Plan 2183/ECO3. The majority of the scrub present is dominated by Butterfly-bush *Buddleja davidii* with some

Willow *Salix* spp. and more occasional young Birch *Betula* spp. and Aspen *Populus tremula* also noted.

4.4.2. In addition, a number of pockets of dense Bramble *Rubus fruticosus* agg. thicket were recorded to be present within the site, predominately within the north east, as shown at Plan 2183/ECO3.

4.4.3. In addition, a single more mature Birch was recorded to be present, situated in the south east of the site adjacent to the main site entrance.

4.5. **Hardstanding**

4.5.1. An area of hardstanding is present within the south of the site, adjacent to the main site entrance in this area, see Plan 2183/ECO3. The hardstanding was recorded to be dominated by concrete, which was recorded to be in a moderate state of disrepair, with occasional gaps and cracks which were noted to support colonising vegetation consistent with the remainder of the site, but in particular dominated by Butterfly-bush, Rosebay Willowherb, Bramble and Mugwort.

4.5.2. In addition, a number of spoil mounds were noted to be present throughout the site, comprising a mixture of earth and rubble apparently associated with the previous clearance of the site (see Plan 2183/ECO3, Photograph 3). At the time of survey these areas were recorded to support further colonising vegetation, particularly Butterfly-bush albeit a number of more disturbed bare areas were also noted, particularly where the substrate was noted to be more friable.

4.5.3. A single small electricity sub-station is present within the west of the site, see Plan 2183/ECO3 (including Photograph 4). The sub-station was noted to be of blockwork construction, supporting a flat felt roof. No other buildings or structures were noted to be present within the site at the time of survey.

4.6. **Invasive Species**

4.6.1. **Japanese Knotweed.** A number of areas of Japanese Knotweed *Fallopia japonica* were noted to be present within of the site, as shown at Plan 2183/ECO3. These included a small number of apparently mature stands, along with more occasional scattered individual stems at the locations shown on the plan.

4.6.2. **Cotoneaster.** During the course of the survey work undertaken, a small amount of non-native *Cotoneaster* spp. was recorded, situated adjacent to the site boundary in the east of the site, associated with the offsite residential property in this area.

4.7. **Background Records**

4.7.1. No records of any fully protected, rare or notable plant species from within or adjacent to the site were returned from the desktop study. The only records of plants listed on Schedule 8 of the Wildlife and Countryside Act 1981 (as amended) within the search areas is that of Bluebell *Hyacinthoides non-scripta*, with the closest specific record situated approximately 1.35km south east of the site. However, no evidence for the

presence of this species was recorded at the site during the survey work undertaken.

- 4.7.2. In addition, a number of flowering plants were obtained from the NBN database, located within the 10km x 10km OS grid square containing the site, including a number of species of principal importance in England (see Appendix 3), however no evidence for the presence of any of these species within the site was obtained during the survey work undertaken.

5. FAUNAL USE OF THE SITE

- 5.1. During the survey work, general observations were made of any faunal use of the site with specific attention paid to the potential presence of protected, rare, notable or BAP species.
- 5.2. In addition, specific survey work was undertaken in order to determine the presence or absence of reptiles, while the habitats were also appraised for their ability to support notable invertebrates assemblages.

5.3. **Mammals**

Bats

Roosts

- 5.3.1. No buildings or other structures are present at the site, which could offer any opportunities for roosting bats.
- 5.3.2. No large or mature trees are present, which have developed features such as cracks, gaps or rot holes recorded which could offer opportunities for roosting bats. Accordingly, no potential roosting opportunities for bats are present within the site.
- 5.3.3. Offsite to the west of the site is a brick-built road bridge, supporting the adjacent Horninglow Road as it crosses the railway line. The bridge and associated brick work was examined during the general survey work undertaken. In general relatively few gaps or cracks were noted, albeit occasional openings and cracks were recorded to be present. No evidence for use by bats in the form of droppings, staining, scratch marks or bats themselves was recorded.

Foraging / Commuting Features

- 5.3.4. The site is dominated by open recolonising bare ground with little in the way of taller vegetation that could provide linear foraging or commuting routes for bats. Furthermore, the site is set within a well-developed area with street lighting such that considerable diffuse lighting / light spill into the site would be anticipated from the surrounding areas. Accordingly, the site is unlikely to be particularly importance for this protected species group.
- 5.3.5. **Background Records.** No specific records of bats from within or adjacent to the site were returned from the data searches. A number of records of bats within the wider search areas surrounding the site were returned from SER and the NBN database (see Appendix 3). Records returned include Brown Long-eared *Plecotus auritus*, Daubenton's *Myotis daubentonii*, Pipistrelle *Pipistrellus* spp., Common Pipistrelle *Pipistrellus pipistrellus*, Noctule *Nyctalus noctula*, Soprano Pipistrelle *Pipistrellus pygmaeus*, Whiskered *Myotis mystacinus* and Whiskered/Brandt's *Myotis mystacinus/brandtii*, with a number of further unspecified bats (Chiroptera). The closest specific record to the site is that of a Whiskered / Brandt's bat located approximately 0.7km from the site.

Badger

- 5.3.6. No evidence for any use of the site by Badger *Meles meles* was recorded in the form of any setts, latrines or scratching posts during the survey work undertaken within the site. In general the stony substrate representing previously cleared, industrial land is such that there is unlikely to be any particular potential for excavation by badger. Accordingly, even should Badger be present within the local area, the site is unlikely to be used more than occasionally by wandering individuals.
- 5.3.7. **Background Records.** No records of Badger from within or adjacent to the site were returned from the desktop study. A number of records of Badger were returned for the wider search area, with the closest record being located within the 1km x 1km OS grid square situated adjacent to the site.

Other Mammals

- 5.3.8. No evidence for any other protected, rare or notable mammal species was recorded within the site. It is anticipated that common urban species such as Brown Rat *Rattus norvegicus* and Fox *Vulpes vulpes*, would likely frequent the site from time to time, with indeed, a number of mammal pathways, push-throughs and the cadavers of two dead foxes recorded within site during the survey work undertaken. In addition, a domestic Cat *Felis catus* was recorded utilising the site during the survey work undertaken.
- 5.3.9. **Background Records.** No specific records of other mammals from within or adjacent to the site were returned from the desktop study. A number of records of mammal species were returned from the search area around the site including Otter *Lutra lutra*, Water Vole *Arvicola terrestris* and Hedgehog *Erinaceus europaeus*, with the closest specific record being that of Water Vole located approximately 1km south east of the site. No evidence for the presence of any of these species was recorded during the survey work, whilst the site does not contain, nor is it located adjacent to any watercourses, water bodies or similar such suitable habitats for Otter or Water Vole.

5.4. **Amphibians**

- 5.4.1. No evidence for the presence of any amphibians within the site was recorded during the general survey work undertaken. No standing water bodies, and hence no suitable potential breeding opportunities for the fully protected amphibian species Great Crested Newt *Triturus cristatus* are located within or adjacent to the site.
- 5.4.2. The nearest standing water body shown on the 1:25,000 Ordnance Survey map of the area covering the site is located approximately 1km north of the site, separated by existing industrial development, railway line and a number of roads including the main A5121 Derby Road.
- 5.4.3. The areas of developing grassland, Bramble and areas of scrub vegetation in the north east of the site appear to provide some potentially suitable terrestrial opportunities for amphibian species including the protected species Great Crested Newt. However, these areas are well removed from any potentially suitable breeding habitats for fully protected species such

that it is extremely unlikely that Great Crested Newt would be present within the site.

- 5.4.4. **Background Records.** No specific records of amphibians within or adjacent to the site were returned from the desktop study. A number of records were returned from within the wider search area around the site for Great Crested Newt and Common Toad *Bufo bufo*, with records of both species located within the 1km x 1km OS grid square that contains the site (see Appendix 3), albeit the information obtained does not allow the precise locations to be determined with respect to the site.

5.5. Reptiles

- 5.5.1. No reptiles were recorded during the general survey work undertaken. However, the habitats present at the site, namely the recolonising ground, developing grassland and Bramble were recorded to offer potentially suitable habitats for common reptiles, providing potential shelter and foraging opportunities and a range of sunny shady areas.

- 5.5.2. As such, specific survey work was undertaken to determine the presence or absence of this group at the site. The results of this specific survey work are set out below, at Table 2.

Survey	Date	Common Lizard		Slow Worm		Other Reptile Species	
		adult	juv	adult	juv	adult	juv
1	07 Sept 2010	0	0	0	0	0	0
2	10 Sept 2010	0	0	0	0	0	0
3	23 Sept 2010	0	0	0	0	0	0
4	26 Sept 2010	0	0	0	0	0	0
5	04 Oct 2010	0	0	0	0	0	0
6	05 Oct 2010	0	0	0	0	0	0
7	07 Oct 2010	0	0	0	0	0	0
Peak Count		0		0		0	

Table 2: Results of specific reptile survey work undertaken at the site during September and early October 2010 (*Maximum number of individual adults recorded during a single survey date. juv = juvenile)

- 5.5.3. In summary, no reptiles were recorded within the site during the specific survey work undertaken.

- 5.5.4. **Background Records.** No specific records of any reptiles within or adjacent to the site were returned from the desktop study. A number of records of Common Lizard *Lacerta vivipara* and Grass Snake *Natrix natrix* were returned from the wider search area around the site. The closest of these records to the site is of Grass Snake located within the 1km x 1km OS grid square situated adjacent to the site (see Appendix 3).

5.6. Birds

- 5.6.1. The majority of the site is open in nature and hence appears to provide potential open ground that could be used by ground nesting birds should these be present, while further opportunities for nesting birds are present at the site in the form of the Bramble thicket, scrub and trees.

5.6.2. A number of common urban birds are likely to utilise the site, with Woodpigeon *Columba palumbus* and House Sparrow *Passer domesticus* recorded during the survey work.

5.6.3. **Background Records.** No specific records of birds within or adjacent to the site were returned from the desktop study. A number of records of Schedule 1 bird species were returned from within the wider search areas, including Peregrine Falcon *Falco peregrinus*, Eurasian Wryneck *Jynx torquilla* and Black Redstart *Phoenicurus ochruros* situated within the 1km x 1km OS grid square that contains the site.

5.6.4. In addition, records of a number of birds species identified as being of principal importance for nature conservation in England under section 41 of the NERC Act, located within the 10km x 10km OS grid square containing the site, were obtained from the NBN database (see Appendix 3). However more specific information was not available which would allow the precise location or nature of these records to be determined in relation to the site.

5.7. Invertebrates

5.7.1. The habitats at the site, dominated by a mixture of bare, cleared ground, recolonising vegetation, developing grassland and scattered scrub are anticipated to support a range of invertebrates, with Green Shield Bug *Palomena prasina*, Sloe Bug *Dolycoris baccarum*, Garden Snail *Helix aspersa*, Grasshoppers (Orthoptera), Ruby-tailed Wasp *Chrysis* spp., Red-tailed Bumblebee *Bombus lapidarius*, Buff-tailed Bumblebee *Bombus terrestris*, Common Blue *Polyommatus icarus*, Speckled Wood *Pararge aegeria*, Small White *Pieris rapae*, Large White *Pieris brassicae*, Gatekeeper *Pyronia tithonus*, Peacock *Inachis io*, Seven Spot Ladybird *Coccinella 7-punctata*, Hoverfly *Syrphus* spp., Flesh Fly *Sarcophaga* spp., Common Darter *Sympetrum striolatum* and Brown Hawker *Aeshna grandis* dragonflies. In addition, stem gall was recorded on Creeping Thistle indicating the presence of the gall fly *Urophora cardui*, while the presence of Bean Galls on Goat Willow was noted indicating the presence of the gall wasp *Pontania proxima*.

5.7.2. In addition, the invertebrate potential of the site has been examined by Colin Plant Associates (CPA) Consultant Entomologists (see Appendix 4). In summary, CPA found that the habitats within the site are typical of many brownfield sites, which would be expected to support a moderate invertebrate assemblage, albeit the transitory nature of this habitat type is such that this would naturally be anticipated to decline over time as part of natural successional processes. No evidence for the presence of any rare or notable invertebrate species was recorded during any of the work undertaken by CPA or Aspect Ecology.

5.7.3. **Background Records.** No specific records of invertebrates were returned from within or adjacent to the site. A single record of Stag Beetle *Lucanus cervus* was returned within information received from SER, located approximately 1.1km south of the site. In addition, a number of records of butterfly and moth species of principal importance in England were returned from the wider search area within information obtained from the NBN database (see Appendix 3).

6. ECOLOGICAL EVALUATION

6.1. Principles of Ecological Evaluation

6.1.1. The evaluation of ecological features and resources should be based on sound professional judgement whilst also drawing on the latest available industry guidance and research. The approach taken in this chapter is based on that described in 'Guidelines for Ecological Impact Assessment in the United Kingdom' published by the Institute of Ecology and Environmental Management (IEEM), 2006. In evaluating ecological features and resources the following key factors are taken into account:

Geographic Frame of Reference

6.1.2. The value of an ecological feature or resource is determined within a defined geographical context using the following frame of reference:

- International
- National
- Regional
- County (or Metropolitan)
- District (or Unitary Authority, City or Borough)
- Local (or Parish)
- At the Site level only

6.1.3. Within this frame of reference, certain sites may carry a statutory ecological designation, e.g. Special Area of Conservation (SAC) for internationally important sites or Site of Special Scientific Interest (SSSI) for sites of national importance.

6.1.4. Sites of more localised nature conservation importance do not receive statutory protection but may be designated by Local Planning Authorities or other bodies, e.g. Wildlife Trusts. Such non-statutory designations or "Local Sites"² include County Wildlife Sites (CWSs) and Sites of Nature Conservation Interest (SNCIs).

Biodiversity Value

Habitats

6.1.5. In certain cases, the value of a habitat can be measured against known selection criteria, e.g. SAC selection criteria, "Guidelines for the selection of biological SSSIs" and the Hedgerows Regulations 1997. However, for the majority of commonly encountered sites, the most relevant habitat evaluation will be at a more localised level and based on relevant factors such as antiquity, size, species-diversity, potential, naturalness, rarity, fragility and typicalness (Ratcliffe, 1977). The ability to restore or re-create the habitat can also be an important consideration, for example in the case of ancient woodland.

6.1.6. Regard should also be given to habitats listed as priorities for conservation under the UK Biodiversity Action Plan (BAP) in accordance with Section 41

² DEFRA (2006) "Local Sites – Guidance on their Identification, Selection and Management"

of the Natural Environment and Rural Communities (NERC) Act (2006), so called "Habitats of Principal Importance", as the likely effect of a development on such habitats is a potential material consideration within the planning process. Certain habitats may also be listed within more regionally or locally specific BAPs, albeit the listing of a particular habitat under a BAP does not in itself imply any specific level of importance.

Species

- 6.1.7. The assessment of the value of a species is based on factors including distribution, status, historical trends, population size and rarity. With respect to rarity, this can apply across the geographic frame of reference and particular regard is given to populations where the UK holds a large or significant proportion of the international population of a species.
- 6.1.8. For certain species groups, e.g. waterfowl, there are established criteria that can be used for defining nationally and internationally important populations.
- 6.1.9. Regard should also be given to species listed as priorities for conservation under the UK BAP in accordance with Section 41 of the NERC Act 2006, so called "Species of Principal Importance". Certain species may also be listed within more regionally or locally specific BAPs, albeit as with habitats the listing of a particular species under a BAP does not in itself imply any specific level of importance.

Secondary or Supporting Value

- 6.1.10. Some habitats or features that are of no intrinsic biodiversity value may nonetheless perform an ecological function, e.g. as a buffer. In addition, certain features of the landscape which by virtue of their linear or continuous nature (e.g. rivers) or their function as "stepping stones" (e.g. small woods) may be of value for the migration, dispersal and genetic exchange of wild species.

Other Value

- 6.1.11. Other tertiary factors may also be relevant in evaluating the value of a particular ecological receptor including social and economic factors.

6.2. Principles of Ecological Assessment

- 6.2.1. Planning Policy Statement 9 (PPS9)³ describes the Government's national policies on the protection of biodiversity [and geological] conservation through the planning system. PPS9 emphasises the need for planning authorities to ensure that the potential effects of planning decisions on biodiversity conservation are fully considered. A 5-point best practice approach^{4,5,6} to the assessment of such effects within the development control process is recommended:

³ ODPM (2005) "*Planning Policy Statement 9: Biodiversity and Geological Conservation*"

⁴ Royal Town Planning Institute (1999) "*Planning for Biodiversity – Good Practice Guide*"

⁵ ODPM (2006) "*Planning for Biodiversity and Geological Conservation – A Guide to Good Practice*"

⁶ PAS 2010 "*Planning to Halt the Loss of Biodiversity, Biodiversity Conservation Standards for Planning in the United Kingdom – Code of Practise.*"

1. **Information** – gathering a sufficient evidence base on which to make sound planning decisions
2. **Avoidance** – adverse effects on habitats and species should be avoided where possible
3. **Mitigation** – where it is unavoidable, mitigation measures should be employed to minimise adverse effects
4. **Compensation** – where residual effects remain after mitigation it may be necessary to provide compensation to offset any harm
5. **New benefits** – many planning decisions present the opportunity to deliver enhancements for habitats or species

6.2.2. The assessment of ecological effects set out within this chapter are based on the above five-point approach, where appropriate.

6.3. **Ecological Designations**

6.3.1. Ecological designations within the vicinity of the site are described in section 3 of this report and are shown on Plan 2183/ECO2.

Statutory Nature Conservation Designations

6.3.2. No statutory nature conservation designations have been identified within or adjacent to the site. As stated in section 3.2 above, the nearest statutory designation is Scalpcliff Hill LNR, located approximately 1.3km south of the site.

6.3.3. The LNR is well separated from the site by urban areas within the town of Burton, including existing commercial, industrial and residential development, a number of roads, and the River Trent. As such, it is extremely unlikely that the LNR, or any other designation would be adversely affected by the proposals.

Non-statutory Nature Conservation Designations

6.3.4. No non-statutory nature conservation destinations have been identified within or adjacent to the site. As stated in section 3.3 above, the nearest SBI, Trent Valley Washlands, is situated approximately 0.8km south east of the site, from which it is separated by existing industrial, commercial and residential development along with associated roads. As such, it is unlikely that the SBI, or any other non-statutory designation would be adversely affected by the proposals.

6.4. **Habitats of Principal Importance**

6.4.1. Section 41 of the NERC 2006 Act places duties on Government Ministers and Departments in respect of the conservation of biodiversity. The lists of the habitat types and species subject to this duty were originally published by DEFRA in 2002 and have been more recently updated, comprising the lists of species and habitats identified as priorities for nature conservation under the UK Biodiversity Action Plan. Definitions of priority habitat types are set out within the accompanying document, *“UK Biodiversity Action Plan; Priority Habitat Descriptions. BRIG (ed. Ant Maddock) 2008”* (available at:

<http://www.ukbap.org.uk/library/UKBAPPriorityHabitatDescriptionsfinalAllhabitatats20081022.pdf>

- 6.4.2. 'Open mosaic habitats on previously developed land' is listed as a priority habitat within the most recently update list. This habitat is noted to comprise ..."*mosaics of bare ground with, typically, very early pioneer communities on skeletal substrates, more established open grassland, usually dominated by fine-leaved grasses with many herbs, areas of bare ground, scrub and patches of other habitats...*". Much of the site comprises bare ground, recolonising vegetation and developing grassland, which appear to fall within this category, albeit the species recorded to be present comprise of common and widespread species. This is considered below:

6.5. Habitats and Ecological Features

- 6.5.1. **Bare / Recolonising Ground and Developing Grassland.** As set out above, the site is dominated by bare ground, recolonising vegetation and developing grassland, which together appear to fall into the category "open mosaics habitats on previously developed land". Such habitats are common and widespread, particularly within former industrial areas, and transitory in nature, predominantly resulting from disturbance, which allows colonist species to take hold and early successional processes to take place.
- 6.5.2. Indeed, the very nature this BAP habitat is transitory in nature and, without continued disturbance or other activity to suppress natural succession, would be anticipated to be lost over time through continued vegetative development, replaced by other, similar habitats at less developed successional stages in the surrounding area over time. As such, the presence of this BAP habitat within the site would be at most anticipated to be relatively short-lived, with the open mosaic habitat lost to encroaching scrub over time, whilst it is clear that the habitat has only been present at the site for a short time, prior to which the site appears to have been dominated by buildings and hardstanding (confirmed through review of available satellite photography).
- 6.5.3. Overall, having regard to this habitat within the site, whilst of some ecological value as a transitional resource, no evidence for the presence of any specifically protected or rare species was recorded to be present, whilst encroaching vegetation (particularly including non-natives such as Butterfly-bush) were already noted to be developing, such that in the long term, the habitat would likely be lost to successional changes in any event without future management. Accordingly, the loss of this habitat to the proposals is considered to be of little ecological importance.
- 6.5.4. **Other Habitats.** Other habitats present such as hardstanding, sub station, young trees and developing scrub support a limited number of common and widespread species and are considered to be of negligible ecological value, such that their loss to the proposals would be of no ecological importance.
- 6.5.5. **Invasive Species**
- 6.5.6. **Japanese Knotweed.** Japanese Knotweed is a non-native species that is particularly invasive. It can regenerate from the smallest fragments of rhizomes (roots) or above ground parts of the plant that may be broken off and transported to other locations. This species is particularly resistant;

forming stands with rhizomes reaching down into the soil up to two metres in depth and up to a distance of seven metres laterally out from the main stand. These rhizomes can persist underground and importantly on potential development sites can reportedly push up through five centimetres of tarmac, in a worst-case scenario. Furthermore, control of the species can be difficult and is often lengthy, needing to be undertaken to a carefully planned programme.

- 6.5.7. Japanese Knotweed is listed in the Wildlife and Countryside Act 1981 (as amended) under Schedule 9 Part II, which makes it an offence to cause to grow in the wild any plant listed on the schedule. As such, all relevant precautions should be taken when carrying out actions that could potentially spread the plant and it should be noted that all soil and plant material (containing Japanese Knotweed) is regarded as controlled waste and is subject to various legal controls in terms of transporting and disposal offsite. As such, careful consideration would need to be given to the disposal of any parts of the species.
- 6.5.8. Two stands and a number of small stems of Japanese Knotweed were recorded within the site, situated along the eastern site boundary and in the north / north east of the site, the location of which are shown at Plan 2183/ECO3.
- 6.5.9. Given the current legislation, and high costs of disposal of contaminated waste, Japanese Knotweed can be a significant issue with regard to development proposal; and as such, it is recommended that measures be put in place in order to ensure that the presence of Japanese Knotweed is fully taken into account during development works.
- 6.5.10. ***Cotoneaster* spp.**. During the course of the survey work, the presence of a small area of *Cotoneaster* spp. was recorded along the eastern site boundary, associated with the offsite residential property within this area. In April 2010, a number of *Cotoneaster* species were added to Schedule 9 Part II of the Wildlife and Countryside Act, such that it is an offence to cause these plants to grow in the wild. It is therefore recommended that suitable steps be put in place to prevent the spread of these species in advance of works commencing at the site. Such measures could include herbicide application and/or excavation and removal of any material within the site itself (which should then be disposed of appropriately to prevent colonisation of offsite areas).

6.6. Fauna

Faunal Species of Principal Importance for Biodiversity

- 6.6.1. The NERC Act 2006 places duties on Government Ministers and Departments in respect of the conservation of biodiversity. A single species of Principal Importance in England (Section 41 of the NERC Act), also listed under the UK BAP, were confirmed to be present within the site (House Sparrow), while habitats present at the site also appear to offer some limited potential opportunities for Hedgehog. These are discussed in more detail at the relevant sections below.

Bats

- 6.6.2. **Legislation.** All British bats are classed as European Protected Species and therefore receive protection under the Conservation of Habitats and Species Regulations 2010, making it an offence *inter alia* to:
- Deliberately kill, injure or capture a bat;
 - Deliberately disturb bats, including in particular any disturbance which is likely to impair their ability to survive, to reproduce or to rear or nurture their young, or their ability to hibernate or migrate, or which is likely to affect significantly their local distribution or abundance;
 - Damage or destroy a breeding site or resting place of a bat.
- 6.6.3. In addition, all British bats are also listed under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) which contains further provisions making it an offence to intentionally or recklessly:
- Damage or destroy, or obstruct access to, any structure or place which any bat uses for shelter or protection; or
 - Disturb any bat while occupying a structure or place which it uses for that purpose.
- 6.6.4. If proposed development work is likely to result in an offence a licence may need to be obtained from Natural England which would be subject to appropriate measures to safeguard bats.
- 6.6.5. There are 17 breeding bat species in Britain. Many of them are considered threatened due to a variety of factors including habitat loss and disturbance/damage to roosts. Of these 17 species, a number regularly use buildings and trees as roost sites.
- 6.6.6. **Roosts.** No buildings, structures or other features that could potentially support bat roosts are present at the site, and accordingly, the proposals are unlikely to result in any adverse effects on roosting bats.
- 6.6.7. Situated adjacent to the site in the west is a brick road bridge which potentially could offer some suitable opportunities for roosting bats. However, the brickwork was recorded to support few gaps, crevices or other suitable features, whilst no evidence for any use of this structure by roosting bats was recorded during specific searches of the adjacent areas of the bridge. Furthermore, the bridge and surrounding area is heavily lit, supporting the main A511 Horninglow Road, such that any potential for the bridge to be used by bats would be further reduced. In any event, the bridge is situated outside of the site and will remain unaffected by the proposals, whilst the existing developed nature of the area is such that the proposals are unlikely to result in any significant effect on bats even should they be using the offsite bridge structure.
- 6.6.8. **Foraging.** In terms of foraging, as set out above, the vast majority of the site is unlikely to offer particular opportunities for bats being dominated by low vegetation and bare/recolonising ground, without taller vegetation or linear features which could act as flyways or linear features of importance to bats. The more developed scrub associated with the western and north

eastern site boundaries may offer some minor potential foraging and/or commuting opportunities for bats, albeit this is limited by its isolation from any suitable offsite habitats, set within a well-lit urban / industrial area.

- 6.6.9. The proposals incorporate additional landscape planting including native trees and shrub species common to the local area, particularly along the north western and northern eastern site boundaries, which will provide greater cover and foraging opportunities for bats over the current situation. Furthermore, it is recommended that these be managed for the benefit of wildlife to maximise invertebrate numbers, which would in turn benefit bats.
- 6.6.10. In order to prevent potential additional disturbance to bats that may utilise these new vegetative corridors, it is recommended that new lighting should be minimised in the vicinity of the boundary features, particularly the north western and north eastern boundaries, and any residual potential light spill in these areas be reduced, for instance by the use of directional lighting and deflectors where necessary.

Badger

- 6.6.11. **Legislation.** In the UK the relevant legislation pertaining to Badger is the Protection of Badgers Act 1992. The legislation aims to protect the species from persecution, rather than being a response to an unfavourable conservation status, as the species is in fact common over most of Britain. It should be noted that the legislation is not intended to prevent properly authorised development. It is the duty of planning authorities to consider the conservation and welfare impacts of development upon Badger and issue permissions accordingly. Planning authorities are, therefore, obliged to consult the appropriate Statutory Nature Conservation Organisation (SNCO) over any planning application that is likely to adversely affect Badger. The SNCO for England is Natural England.
- 6.6.12. **Evaluation.** No evidence for any use of the site by Badger was recorded during the survey work, whilst the habitats present are unlikely to offer potential opportunities for this species. As such, this species is unlikely to represent a constraint on the proposed development.

Other Mammals

- 6.6.13. Other mammal species likely to utilise the site, such as Fox and Brown Rat, remain common in both a local and national context. As such, these species carry no legal protection and the loss of potentially opportunities for these species to the proposals would be of little importance. In any event, it is likely that these species would continue to frequent the site following completion of construction works.
- 6.6.14. Background records also include nearby records of Hedgehog, which is listed as a species of principle importance in England under Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006, albeit this species remains common and widespread in England. The site offers some limited potential opportunities for this species in the form of the grassland and denser vegetation along the south eastern and south western site boundaries. However abundant similar opportunities are present within the local area, whilst in any case the proposed new landscaped areas

including native tree and shrub planting would likely continue to provide potential opportunities and corridors for this species in the long term.

Amphibians

- 6.6.15. **Legislation.** Although Great Crested Newts are regularly encountered throughout much of lowland England and Wales, the UK holds a large percentage of the world population of the species. As such, the UK has an international obligation to conserve the species and it receives full protection under domestic and European legislation. Specifically, Great Crested Newt is classified as a European Protected Species and therefore receives protection under the Conservation (Natural Habitats &c.) Regulations 1994 (as amended), making it an offence *inter alia* to:
- Deliberately kill, injure or capture a Great Crested Newt;
 - Deliberately disturb Great Crested Newts, including in particular any disturbance which is likely to impair their ability to survive, to reproduce or to hibernate, or migrate, or which is likely to affect significantly their local distribution or abundance;
 - Deliberately take or destroy the eggs of a Great Crested Newt;
 - Damage or destroy a breeding site or resting place of a Great Crested Newt
- 6.6.16. In addition, the Great Crested Newt is also listed under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) which contains further provisions making it an offence to intentionally or recklessly:
- Damage or destroy, or obstruct access to, any structure or place which any Great Crested Newt uses for shelter or protection; or
 - Disturb any Great Crested Newt while occupying a structure or place which it uses for that purpose.
- 6.6.17. If proposed development work is likely to result in an offence a licence may need to be obtained from Natural England which would be subject to appropriate measures to safeguard Great Crested Newt
- 6.6.18. **Evaluation.** The habitats within the site do not offer suitable breeding opportunities for any fully protected amphibian species, albeit potentially suitable terrestrial habitat is present on the form of the developing grassland, Bramble and scattered scrub.
- 6.6.19. Amphibians, including Great Crested Newt, can range some distance from their breeding ponds, although typically the majority of activity with regard to this species is centred within 100 metres of the breeding pond with a maximum routine migratory range usually occurring within 250 metres of the pond. The nearest potentially suitable standing water body identified to the site is located approximately 1km from the site boundary, from which it is well separated by main A5121 Derby Road and existing urban / industrial development.
- 6.6.20. Accordingly, it is very unlikely that any fully protected amphibians are present within the site and this group does not therefore appear to represent a constraint on any development proposals at the site.

Reptiles

- 6.6.21. **Legislation.** All 6 species of British reptile are listed under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). However, a higher level of protection is afforded to Sand Lizard and Smooth Snake than to Adder, Grass Snake, Slow-worm and Common Lizard.
- 6.6.22. For all British reptile species, Section 9 of the Wildlife and Countryside Act 1981 (as amended) contains provisions making it an offence to intentionally:
- Kill or injure; or to
 - Sell, offer for sale or trade any British reptile.
- 6.6.23. Because Slow-worm, Common Lizard, Grass Snake and Adder are relatively widespread British species, their habitat is not directly protected. Nevertheless, because of their partial protection, disturbing or destroying their habitat whilst they are present may lead to an offence.
- 6.6.24. Section 9 of the Wildlife and Countryside Act 1981 (as amended) also contains provisions making it an offence to intentionally or recklessly:
- Damage or destroy, or obstruct access to, any structure or place which any Sand Lizard or Smooth Snake uses for shelter or protection; or
 - Disturb any Sand Lizard or Smooth Snake while occupying a structure or place which it uses for that purpose.
- 6.6.25. In addition, Sand Lizard and Smooth Snake are classed as European Protected Species and therefore receive protection under the Conservation (Natural Habitats &c.) Regulations 1994 (as amended), making it an offence *inter alia* to:
- Deliberately kill, injure or capture a Sand Lizard or Smooth Snake;
 - Deliberately disturb Sand Lizards or Smooth Snakes, including in particular any disturbance which is likely to impair their ability to survive, to reproduce or to hibernate, or migrate, or which is likely to affect significantly their local distribution or abundance;
 - Deliberately take or destroy the eggs of a Sand Lizard;
 - Damage or destroy a breeding site or resting place of a Sand Lizard or Smooth Snake.
- 6.6.26. If proposed development work is likely to result in an offence a licence may need to be obtained from Natural England which would be subject to appropriate measures to safeguard Sand Lizard/Smooth Snake.
- 6.6.27. **Evaluation.** The habitats present within the site are unsuitable to support Sand Lizard and Smooth Snake, which have specific habitat requirements comprising sandy heaths and dunes and as such are highly restricted in their distribution.
- 6.6.28. The mosaic of habitats that dominate the site, namely the recolonising ground, developing grassland and Bramble, were recorded to provide adequate shelter and foraging opportunities and a range of sunny shady spots to potentially support common reptiles. As such, specific survey work

was undertaken at the site during 2010 in order to confirm the presence or absence of this group within the site.

- 6.6.29. This specific survey work recorded no evidence for the presence of any reptiles and as such this group is not considered to represent a constraint on the proposals.

Birds

- 6.6.30. **Legislation.** Section 1 of the Wildlife & Countryside Act 1981 (as amended) is concerned with the protection of wild birds. With certain exceptions, all wild birds are protected such that it is an offence to intentionally:

- Kill, injure or take any wild bird;
- Take, damage or destroy the nest of any wild bird whilst in use* or being built;
- Take or destroy an egg of any wild bird.

* The nests of birds that re-use their nests as listed under Schedule ZA1, e.g. Golden Eagle, are protected against taking, damage or destruction irrespective of whether they are in use or not.

- 6.6.31. Species listed under Schedule 1 of the Act receive greater protection such that they are also protected against intentional or reckless disturbance whilst building a nest or whilst they are in, on or near a nest containing eggs or young. The dependent young of Schedule 1 birds are also protected against intentional or reckless disturbance. Offences in respect of Schedule 1 species are subject to special, i.e. greater, penalties.

- 6.6.32. **Conservation Status.** The RSPB categorise British bird species in terms of conservation importance based on a number of criteria including the level of threat to a species' population status⁷. Species are listed as Green, Amber or Red. Red Listed species are considered to be of the highest conservation concern being either globally threatened and or experiencing a high/rapid level of population decline (> = 50% over the past 25 years).

- 6.6.33. **Evaluation.** The habitats at the site appear to offer potential nesting opportunities to a range of birds, including potentially ground nesting species.

- 6.6.34. No evidence for the presence of any Schedule 1 bird species was recorded at the site, however the presence of House Sparrow within the site was noted during the survey work undertaken. House Sparrow is included upon the RSPB Red List, while it is also listed as a species of principal importance for nature conservation under Section 41 of the NERC 2006 Act. However, while in decline, this species remains locally common over most of England, including in urban areas, with UK populations noted to remain greater than 10,000 pairs (UK breeding population estimated at 2.1 – 3.7 millions pairs by the RSPB [www.rspb.org.uk, 2010]. In any event, the site is unlikely to offer particular nesting opportunities for this species, which prefers to nest in colonies in holes in buildings, nest boxes or (rarely) dense hedges or conifers, none of which are present.

⁷ RSPB "The population status of birds in the UK - *Birds of Conservation Concern: 2002 - 2007*"

- 6.6.35. It is likely that the suitable habitats within the site may be utilised by common urban bird species, however, overall the site appears to support an unremarkable range of common and widespread species, which are typical of urban areas.

Invertebrates

- 6.6.36. A number of invertebrate species were recorded at the site during the general survey work undertaken, all of which are common and widespread. No records of any protected, rare, or notable invertebrates within or adjacent to the site were returned from the desktop study. The habitats present at the site dominated by bare, cleared ground, recolonising vegetation, developing grassland and scattered scrub are anticipated to support a range of invertebrates. Indeed work undertaken by CPA concluded that the habitats within the site are largely typical of those of many brownfield sites and as such these habitats will likely support a moderate invertebrate assemblage.
- 6.6.37. Work undertaken by both Aspect Ecology and CPA recorded no evidence for the presence of any protected, rare or notable invertebrate species within the site. Given the transitory nature of the habitat types present at the site, the precise species composition would be anticipated to vary over time, with invertebrate species associated with bare, recolonising habitats naturally replaced by those common to denser, scrubby vegetation over time as vegetative succession continues. Accordingly, the invertebrate assemblage present at the site appears largely unremarkable and therefore unlikely to represent a particular constraint on any development proposals at the site.

6.7. **Recommended Enhancements**

- 6.7.1. Planning Policy Statement 9 (PPS9) requires developments to maximise the opportunities for biodiversity by building-in enhancement measures. The proposals present the opportunity to deliver ecological enhancements at the site for the benefit of local biodiversity, thereby making a positive contribution towards the broad objectives of the national and Staffordshire (BAP).
- 6.7.2. Given the types of habitats and ecological features within and adjacent to the site, the following recommendations and ecological enhancements would be appropriate in the local context.

Vegetation

- 6.7.3. **Landscape Planting.** New landscape planting will be provided within the proposals for the site, comprising native species common to the local areas. In particular native trees and shrubs, including fruit-bearing species such as Hawthorn, Blackthorn and Guelder-rose, will be incorporated into the boundary vegetation along the north western site boundary with the railway line. This vegetated corridor will provide cover, foraging and commuting opportunities for a range of wildlife.

- 6.7.4. Furthermore, it is recommended that these areas be managed for the benefit of wildlife in the long term to maximise opportunities at the site for a range of species.
- 6.7.5. In addition, if possible it is recommended that ruderal elements be incorporated into the landscaping proposals for the site, in order to reflect the current, transitory habitat types present, which could be maintained as such, resulting in long term benefits to transitional species associated with this habitat type, particularly invertebrate species.
- 6.7.6. **Invasive species.** It is recommended that suitable measures be put in place in order to control/eradicate the exotic invasive plant species present within the site (particularly Japanese Knotweed)

Fauna

- 6.7.7. **Birds.** The clearance of suitable habitats during the nesting season could result in damage or disturbance of nests and as such, it is recommended that to avoid any potential offence under the Wildlife & Countryside Act, any clearance work undertaken on site should be undertaken outside of the bird nesting season (March – August inclusive). Should this not be possible, any suitable habitats to be affected, should first be checked by a professional ecologist in order to confirm the absence of any nests prior to removal. Any active nests identified would need to be cordoned off and protected until the end of the nesting season or until the birds have fledged.

6.8. **Summary of Recommendations and Enhancements**

- New landscape planting to incorporate native species common to the local area, including new fruit-bearing tree and shrub species and, where possible, ruderal elements.
- It is recommended that suitable measures be put in place at the site to control and/or eradicate the exotic invasive plant species identified at the site in line with current legislations
- Bird sensitive timing of vegetation clearance, or clearance to be preceded by a check survey by an ecologist to confirm the presence / absence of nesting birds.

7. POLICY REVIEW

7.1. The planning policy framework that relates to nature conservation issues in Burton-upon-Trent is issued at two main administrative levels – Nationally through Planning Policy Statement 9 at the regional level through the West Midlands Regional Spatial Strategy 2009 and at the Local level, largely through the East Staffordshire Borough Council Local Plan, and other documents as they are adopted to form the Local Development Plan. Any proposed development will be judged in relation to the policies contained in these planning documents.

7.2. National Policy

Planning Policy Statement 9

7.2.1. Guidance on National Policy for biodiversity and geological conservation is provided by the Department of the Environment Planning Policy Statement 9 (PPS9), published in August 2005. PPS9 confirms the Government's commitment to the protection of biodiversity and geological conservation through the planning system.

7.2.2. PPS9 requires Local Authorities to fully consider the effect of planning decisions on biodiversity and geological conservation, and ensure that appropriate weight is attached to statutory nature conservation designations, protected species and biodiversity and geological interests within the wider environment.

7.2.3. It also considers the potential biodiversity and geological conservation gains which can be secured within developments, including the use of planning obligations.

7.2.4. National Policy therefore implicitly recognises the importance of biodiversity and that with sensitive planning and design, development and conservation of the natural heritage can co-exist and benefits can, in certain circumstances, be obtained.

7.3. Regional Policy

West Midlands Regional Spatial Strategy

7.3.1. Regional planning guidance is contained within the West Midlands Regional Spatial Strategy (published January 2008). This incorporates the changes to the RSS as a result of the Phase 1 revision (the Black Country Study).

7.3.2. The Regional Spatial Strategy contains 3 policies which relate to nature conservation.

7.3.3. Policy **QE7** is concerned with protecting, managing and enhancing the regions biodiversity and nature conservation resources and requires local authorities and other relevant agencies to encourage the maintenance and enhancement of biodiversity resources, take account of local and national BAPs, including the provision of policies and proposals allowing the region to achieve its minimum share of UK BAP targets and take a common

approach to biodiversity and nature conservation issues across planning boundaries.

- 7.3.4. Policy **QE8** refers to forestry and woodlands, requiring development plans and other strategies to conserve and protect woodlands, especially ancient and semi-natural woodlands, and ensure that new planting does not impact on biodiversity.
- 7.3.5. Policy **QE9** is concerned with the water environment and specifies that development plan policies and plans of the Environment Agency should be coordinated across local and regional boundaries to achieve a number of objectives, including the protecting and enhancing wetland species and habitats, particularly those subject to local biodiversity partnerships.
- 7.4. More recently, on 6 July 2010 the Secretary of State announced that all of England's RSSs were being revoked, however a recent High Court judgement has deemed this unlawful, such that, where in force the RSSs appear to again represent part of the adopted policy and should be considered. Nonetheless the future of the RSS remains unclear, with the government having confirmed that the RSSs will be abolished under the forthcoming Localism bill.

7.5. **Local Policy**

- 7.5.1. The site lies completely within the Borough of East Staffordshire.
- 7.5.2. The Planning and Compulsory Purchase Act 2004 also sets out that Local Planning Policy in England should be set out within Local Development Frameworks (LDFs), which are to replace previous local policy guidance in the form of Local Plans. However, given this change in policy, the act determined that existing Local Plans would remain in force for a period of up to 3 years. This period has now ended, however the LDF for the Borough of East Staffordshire remains to be finalised and formally adopted. Previous policy for the Borough of East Staffordshire was set out in the East Staffordshire Borough Council Local Plan (adopted July 2006), which set out the planning strategy for the borough up until 2011. As such, using powers under legislation, the Secretary of State has prolonged the use of a number of previous policies, termed 'saved policies' from the Local Plan.
- 7.5.3. The East Staffordshire Borough Council Local Development Scheme came into force on 2nd June 2010, which include saved policies from the Local Plan along with references to the saved Staffordshire and Stoke-on-Trent Structure Plan.
- 7.5.4. The East Staffordshire Borough Council Local Plan contains no saved policies that are of direct ecological and nature conservation relevance.

7.6. **Policy Discussion**

- 7.6.1. As stated above, planning policy recognises the importance of biodiversity and encourages sensitive design to facilitate the conservation and creation of biodiversity within developments. Following the recommendations set out in this report, the proposals are fully in line with PPS9, retaining any habitat features of value and enhancing those of lesser ecological significance. Furthermore, no statutory or non-statutory designations or protected

species will be adversely affected by the proposals, in line with all relevant policy including PPS9.

7.7. **Policy Summary**

- 7.7.1. It is considered that, following the recommendations set out in this report, the proposed development would fully accord with the relevant provisions of policies relating to nature conservation at the national and local levels.

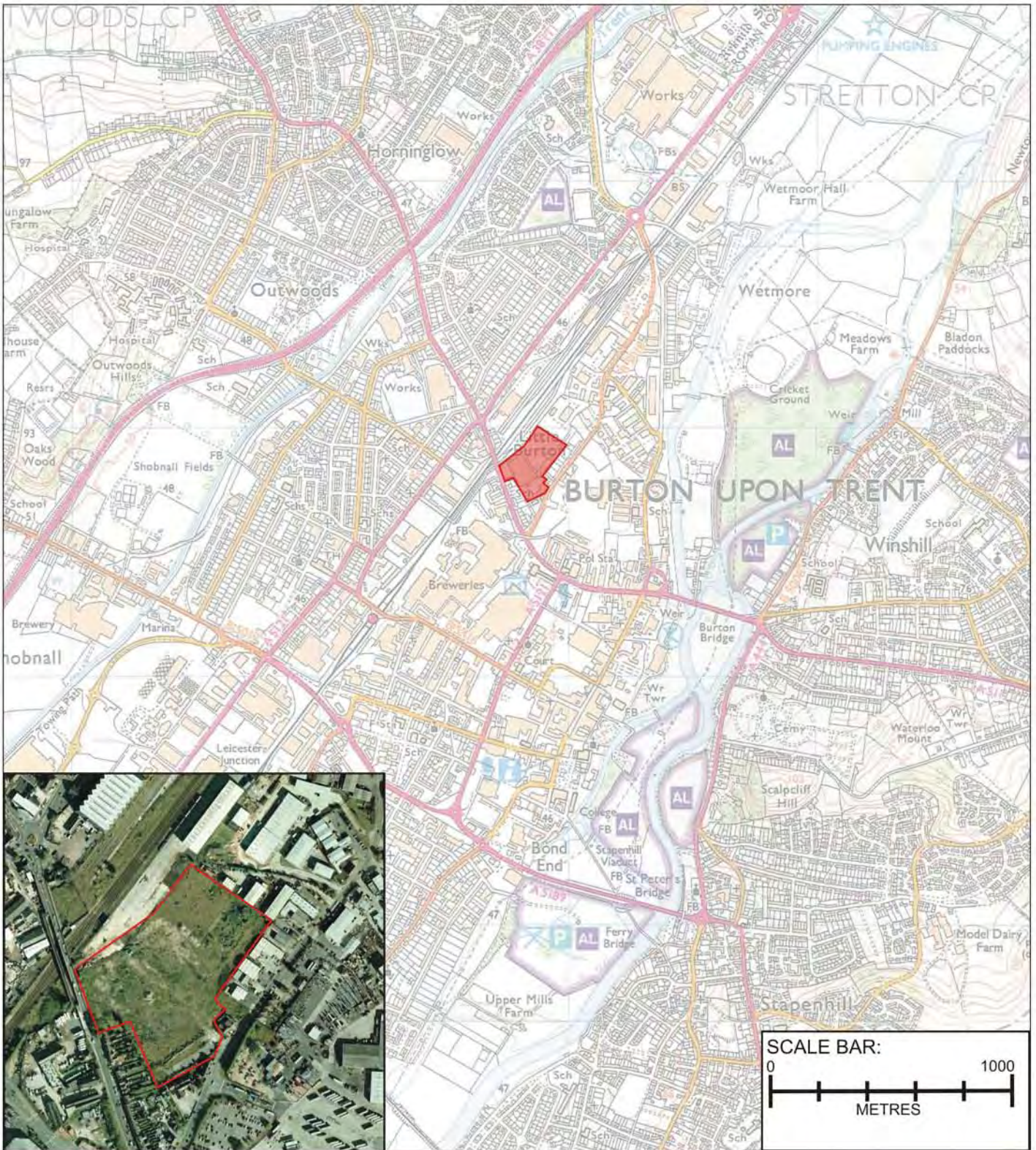
8. SUMMARY AND CONCLUSIONS

- 8.1. Aspect Ecology was commissioned by Tesco Stores Ltd to undertake an Ecological Assessment of the site at Hawkins Lane, Burton-upon-Trent.
- 8.2. The site was surveyed by Aspect Ecology based around extended Phase 1 methodology, with particular attention paid to the potential presence of any protected, rare or notable species. In addition, specific survey work was undertaken for the protected species group, reptiles.
- 8.3. **Ecological Designations.** The site itself is not subject to any statutory or non-statutory nature conservation designation. The nearest such designations, Scalpcliff Hill LNR and Trent Valley Washlands SBI are well separated from the site by existing developed areas within Burton-upon-Trent, such that they are unlikely to be adversely affected by the proposals.
- 8.4. **Habitats.** The habitats within the site are dominated by bare, recolonising ground, ruderal vegetation and developing grassland and scrub following the clearance of previous development. These habitats are of little ecological interest individually, albeit together they are noted to fall within the BAP habitat type 'Open Mosaic Habitats on Previously Developed Land'. Such habitat, by nature represents a transient, short term position within wider meta-habitats such that in any case they would disappear from the site in the long term through natural successional processes. Accordingly, the loss of the habitats to the proposals are of limited ecological importance, not least given the lack of any identified protected, rare or notable species and the encroachment of colonising scrub, particularly including non-native Butterfly-bush.
- 8.5. **Protected Species.** No evidence for the presence of any specifically protected, rare or notable species was recorded at the site during the survey work undertaken, whilst the nature of the habitats present is such that they are unlikely to support such species.
- 8.6. Nonetheless, a number of common bird species are likely to utilise the habitats within the site, including potentially for nesting. All wild birds receive protection whilst nesting, and as such, in order to avoid a potential offence it is recommended that any clearance of nesting habitat be undertaken outside of the bird nesting season (i.e. outside March to August inclusive) or following the negative result of a nesting bird survey conducted by a suitably qualified ecologist.
- 8.7. **Recommendations and Enhancements.** A number of ecological recommendations and enhancements have been set out within this report which will provide biodiversity benefits at the site, including the control of exotic invasive plant species and provision of native tree and shrub species, as well as ruderal elements where possible within the new landscape planting.
- 8.8. **Conclusion.** In conclusion, on the present evidence obtained from detailed ecological survey work and with the implementation of the recommendations set out in this report, overall the site is considered to be of negligible ecological value and there is no reason to suggest that any ecological designations, habitats of nature conservation interest or any protected species will be adversely affected by the proposals.

PLANS

PLAN 2183/ECO1

Site Location



KEY:

 SITE LOCATION

aspect ecology

Aspect Ecology Limited - West Court - Hardwick Business Park
 Noral Way - Banbury - Oxfordshire - OX16 2AF
 01295 276066 - info@aspect-ecology.com - www.aspect-ecology.com

**HAWKINS LANE,
 BURTON UPON TRENT**

SITE LOCATION

2183/ECO1

AUGUST 2010

PROJECT

TITLE

DRAWING NO.

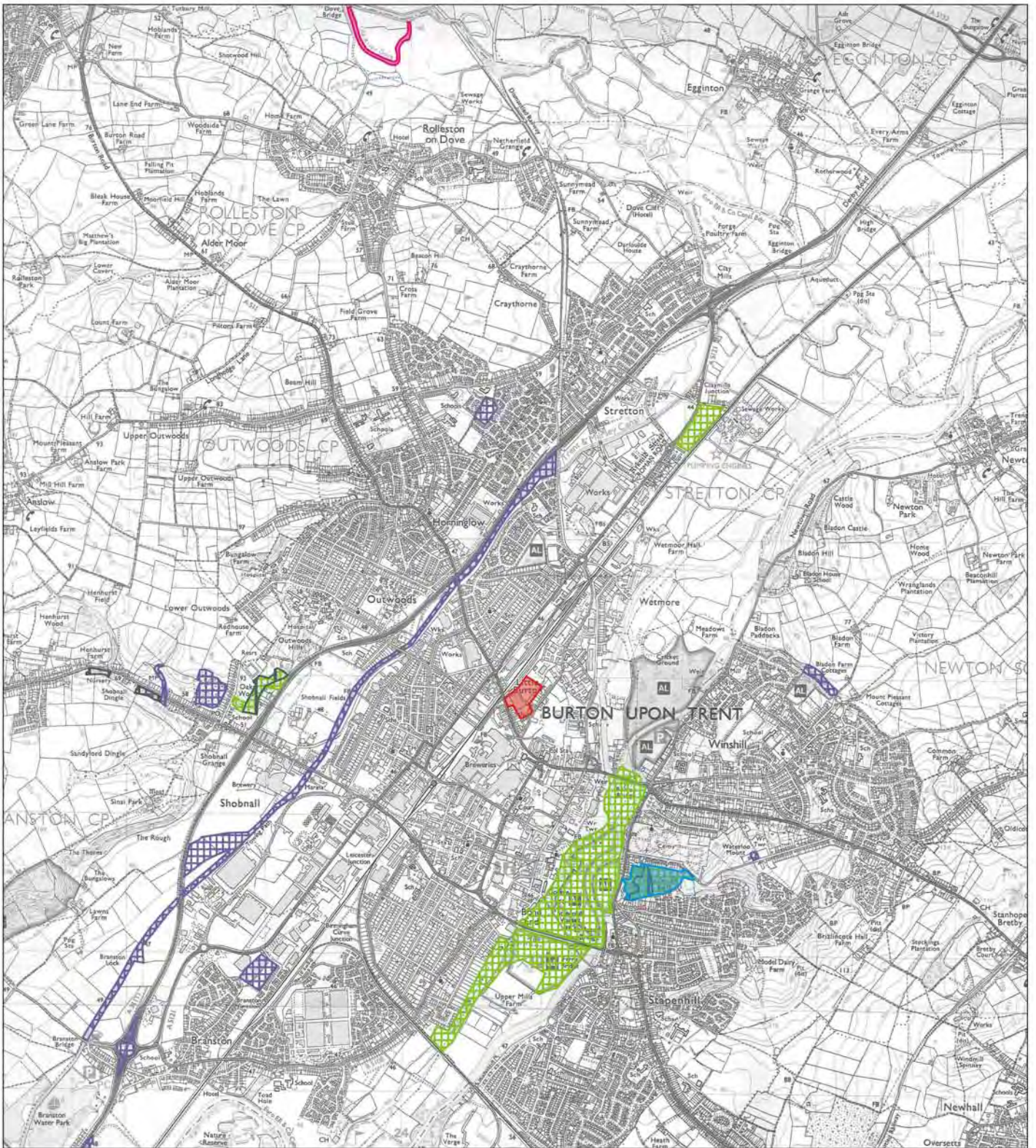
REV.

DATE



PLAN 2183/ECO2

Ecological Designations



KEY:

-  SITE LOCATION
-  SITE OF SPECIAL SCIENTIFIC INTEREST (SSSI)
-  LOCAL NATURE RESERVE (LNR)
-  ANCIENT AND SEMI-NATURAL WOODLAND
-  SITE OF BIOLOGICAL IMPORTANCE (SBI)
-  BIODIVERSITY ALERT SITE

aspect ecology

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 Noral Way - Banbury - Oxfordshire - OX16 2AF
 01295 276066 - info@aspect-ecology.com - www.aspect-ecology.com

**HAWKINS LANE,
 BURTON UPON TRENT**

DESIGNATED SITES

2183/ECO2

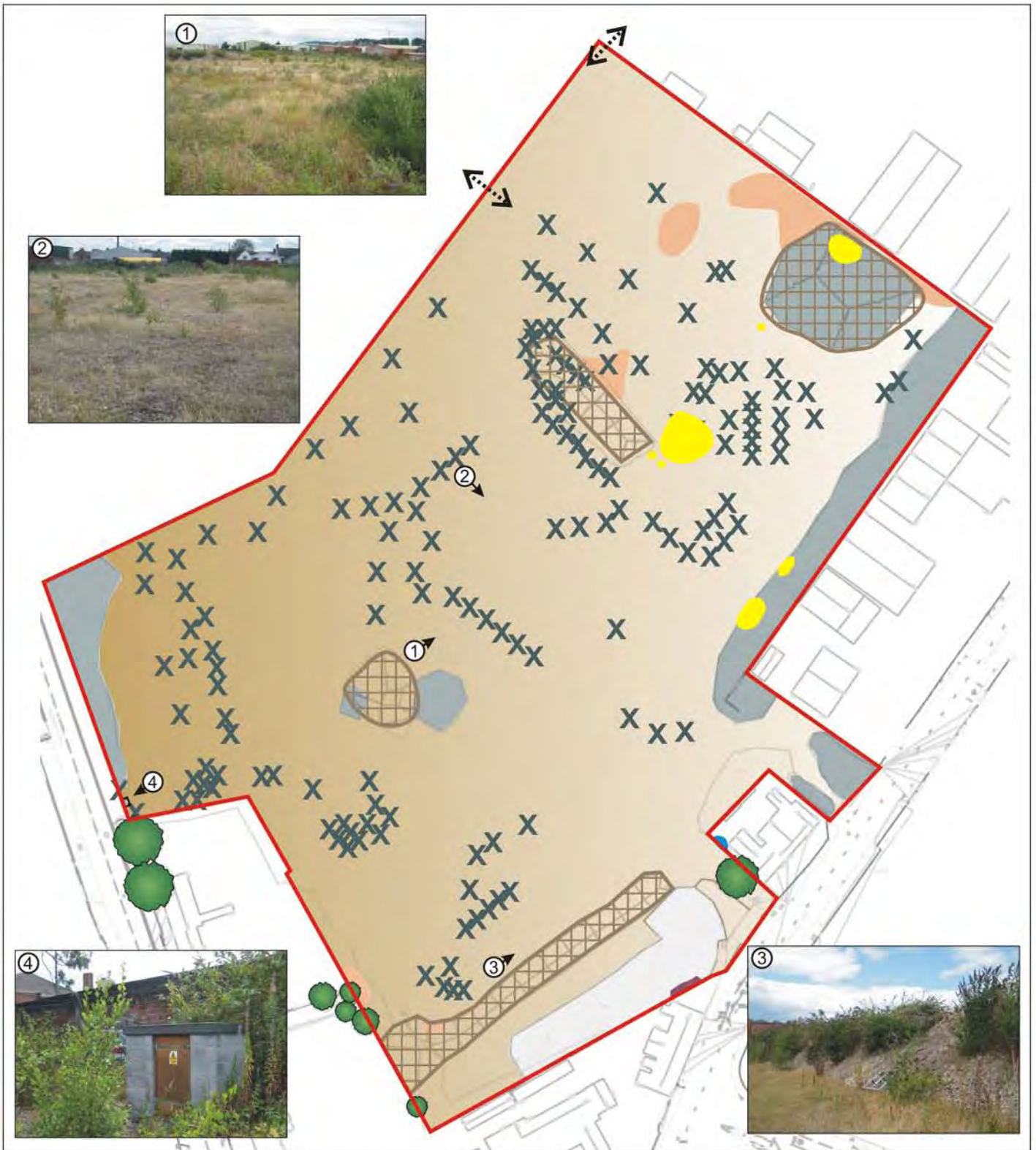
AUGUST 2010

PROJECT
 TITLE
 DRAWING NO.
 REV.
 DATE















PLAN 2183/ECO3

Ecological Features and Photographs



KEY:

- | | | | |
|---|--|---|-------------------------|
|  | SITE BOUNDARY |  | SPOIL MOUND |
|  | BARE STONY GROUND/
RECOLONISING RUDERAL
VEGETATION/DEVELOPING
GRASSLAND
GROUND |  | JAPANESE KNOTWEED |
|  | SCRUB/SCATTERED
SCRUB |  | COTONEASTER SPP. |
|  | HARDSTANDING |  | ELECTRICITY SUB-STATION |
|  | DENSE BRAMBLE |  | MAMMAL PUSH THROUGH |
|  | TREE |  | PHOTOGRAPH LOCATION |

aspect ecology

HAWKINS LANE,
BURTON UPON TRENT
ECOLOGICAL FEATURES
AND PHOTOGRAPHS

2183/ECO3

OCTOBER 2010

PROJECT
TITLE
DRAWING NO.
REV.
DATE






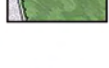
APPENDICES

APPENDIX 1

Proposed Landscape Masterplan: Aspect Landscape Planning Drawing
Number: 4814/ASP2



KEY:

-  BOUNDARY
-  EXISTING TREES
-  PROPOSED TREES
-  PROPOSED SHRUB

Scale 1:1250 @ A3

0m 10m 20m 50m

Based on Saunders Architects drawing 120110_SitePlan

aspect landscape planning

TITLE
**Burton upon Trent
 Landscape Masterplan**

CLIENT
TESCO

SCALE 1:1250@A3	DATE DEC 2010	DRAWN PvW
DRAWING NUMBER 4814/ASP2		REVISION NUMBER A

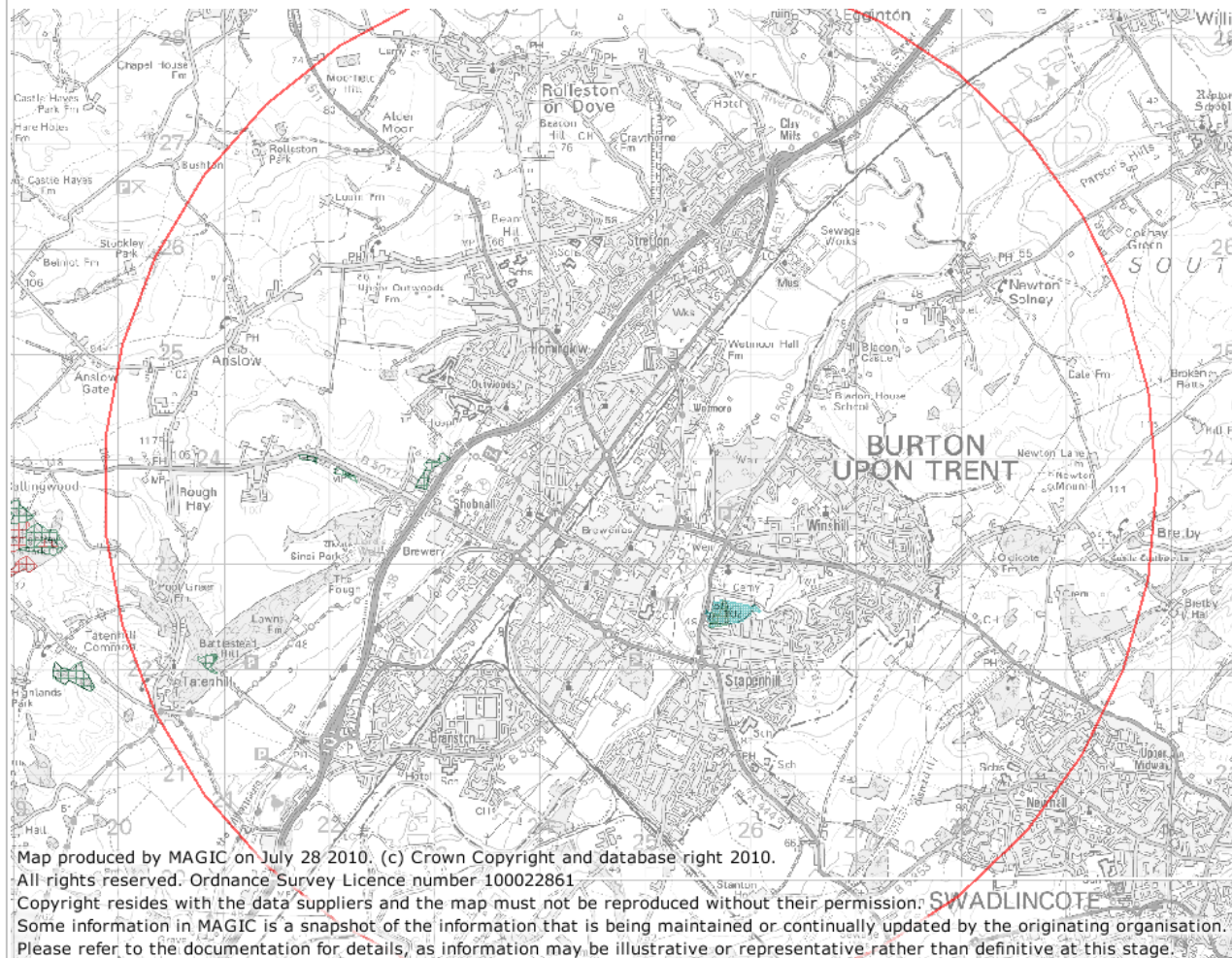
APPENDIX 2

Information downloaded from Multi-Agency Geographic Information of the Countryside (MAGIC) and Natural England's 'Nature on the Map'

MAGiC



ECO2183



Map produced by MAGiC on July 28 2010. (c) Crown Copyright and database right 2010.

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Some information in MAGiC is a snapshot of the information that is being maintained or continually updated by the originating organisation.

Please refer to the documentation for details, as information may be illustrative or representative rather than definitive at this stage.

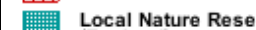
Ancient Woodland (England)



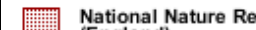
Ancient & Semi-Natural



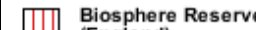
Ancient Replanted



Local Nature Reserves (England)



National Nature Reserves (England)



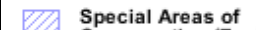
Biosphere Reserves (England)



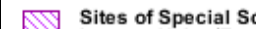
Ramsar Sites (England)



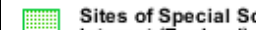
Special Protection Areas (England)



Special Areas of Conservation (England)



Sites of Special Scientific Interest Units (England)



Sites of Special Scientific Interest (England)

Site Check Report

Report generated on July 28 2010.

You clicked on the point:

Grid Ref: **SK 248 237**

Full Grid Ref: **424863 , 323755**

The following features have been found within 5,000 metres of your search point:

Counties, Metropolitan Districts and Unitary Authorities (GB)

Geographic Level	Name
COUNTY	STAFFORDSHIRE
COUNTY	DERBYSHIRE

NUTS1 - Government Office Regions (GB)

Hotlink	Name	Reference
http://www.statistics.gov.uk/geography/nuts_em.asp	EAST MIDLANDS	UKF
http://www.statistics.gov.uk/geography/nuts_wm.asp	WEST MIDLANDS	UKG

Ancient Woodland (England)

Grid Reference	Wood Name	Theme ID	Theme Name
sk237190	GROVE WOOD	1104715	ANCIENT & SEMI-NATURAL WOODLAND
sk240189	GROVE WOOD	1104715	ANCIENT & SEMI-NATURAL WOODLAND
sk208220		1411567	ANCIENT & SEMI-NATURAL WOODLAND
sk222238		1411574	ANCIENT & SEMI-NATURAL WOODLAND
sk257224	SCALPLEY WOOD	1104724	ANCIENT & SEMI-NATURAL WOODLAND
sk229239	OAK WOOD	1104723	ANCIENT & SEMI-NATURAL WOODLAND
sk217240		1411575	ANCIENT & SEMI-NATURAL WOODLAND
sk208219		1411568	ANCIENT & SEMI-NATURAL WOODLAND

Local Nature Reserves (England)

Name	Reference
SCALPCLIFFE HILL	1009123

National Nature Reserves (England)

There are no features within your search area.

Biosphere Reserves (England)

There are no features within your search area.

Ramsar Sites (England)

There are no features within your search area.

Special Protection Areas (England)

There are no features within your search area.

Special Areas of Conservation (England)

There are no features within your search area.

Sites of Special Scientific Interest Units (England)

Site Unit Condition	Citation	Name	Reference
UNFAVOURABLE RECOVERING	1014743	OLD RIVER DOVE, MARSTON ON DOVE	1054337

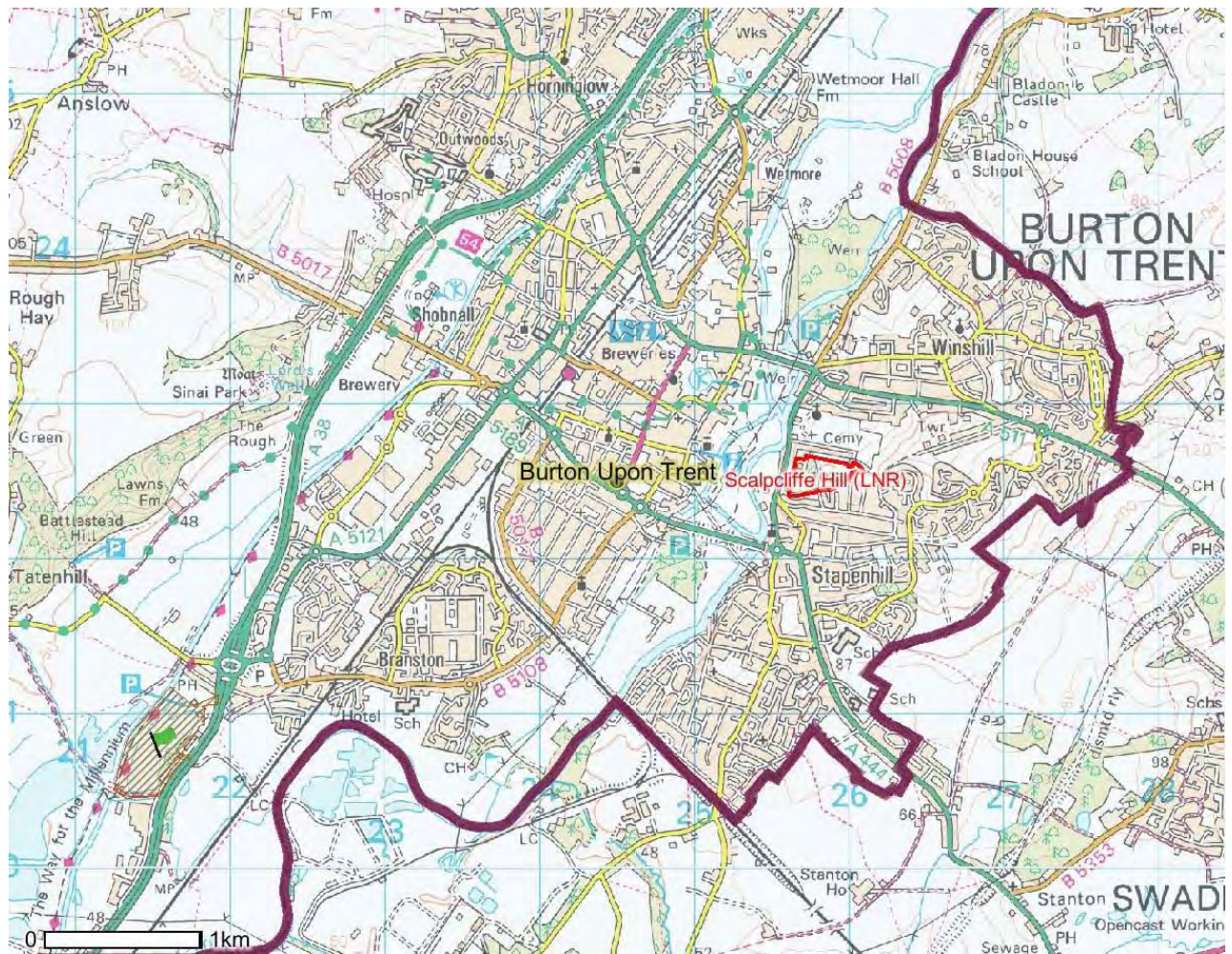
Sites of Special Scientific Interest (England)

Citation	Name	Reference
1001024	OLD RIVER DOVE, MARSTON ON DOVE	1002254

To save the report, select "Save" or "Save As" from the File menu. You should save the file with a **.html** extension and give it a name of your choice. You can then open your report using your web browser software.

[Print Report](#) | [Close Window](#)

ECO2183

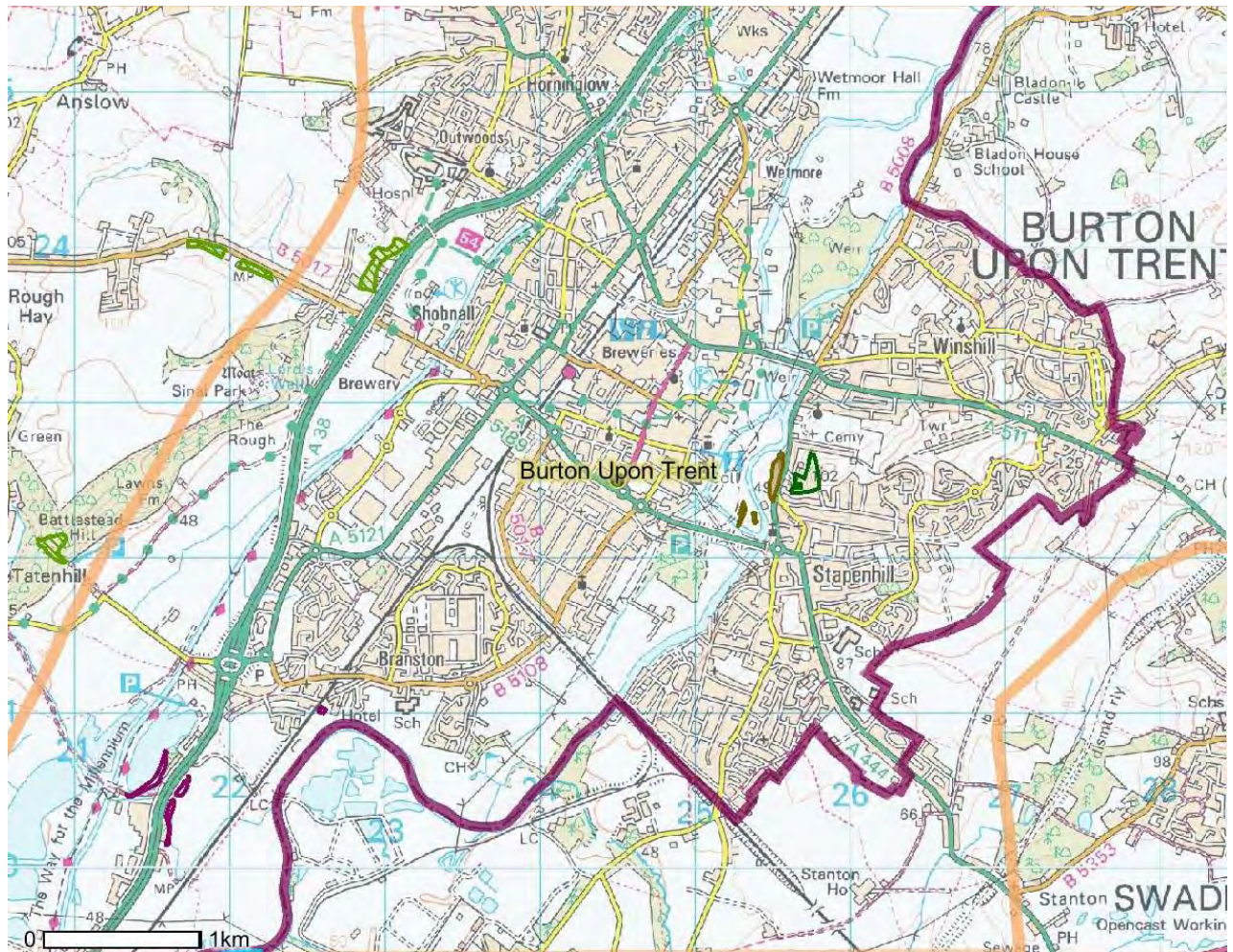


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- | | |
|--------------------------------------|---|
| ★ Natural England Offices | □ Sites of Special Scientific Interest |
| □ National Nature Reserves | □ Natural England Regions |
| □ Local Nature Reserves | □ Natural England Area Teams |
| □ Country Parks | □ Scotland, Wales and Ireland |
| □ Green Flag Country Park | □ Ordnance Survey background mapping |
| □ Non Green Flag Country Park | □ England |
| □ Millennium Greens | |
| □ Doorstep Greens | |

ECO2183



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- | | | |
|---|---|---|
| ★ Natural England Offices | ▨ Lowland Raised Bog | ○ Natural Areas |
| ■ Mudflat | □ Undetermined Woodland | ■ Scotland, Wales and Ireland |
| ■ Coastal Vegetated Shingle | □ Wet Woodland | ■ Ordnance Survey background mapping |
| ■ Coastal, Floodplain Grazing Marsh | ■ Lowland Beech and Yew Woodland | □ England |
| ■ Maritime Cliffs and Slopes | ■ Lowland Mixed Deciduous Woodland | |
| ■ Saline Lagoons | ■ Upland Calcareous Grassland | |
| ■ Coastal Sand Dunes | ■ Blanket Bog | |
| ■ Purple Moor Grass and Rush Pasture | ■ Upland Heathland | |
| ■ Lowland Meadow | ■ Upland Hay Meadow | |
| ■ Lowland Dry Acid Grassland | ■ Undetermined Grassland | |
| ■ Lowland Calcareous Grassland | ■ Upland Oakwoods | |
| ■ Lowland Heathland | ■ Upland Mixed Ashwood | |
| ■ Fen | ■ Sites of Special Scientific Interest | |
| ■ Reedbeds | ■ Natural England Regions | |

APPENDIX 3

Data obtained from the 'National Biodiversity Network' (NBN) database

National Biodiversity Network Database

Mammals

Badger

Site name	Gridref	Date Recorded	Date Accuracy	Sensitive	Recorder	VICECOUNTY
Confidential		Between 1960 and 1994	Year Range	N	Halfpenny, G.	Staffordshire
		1966	Year	N	Webb, Miss J.B.	Staffordshire

Brown Long-eared Bat

Site name	Gridref	Date Recorded	Date Accuracy	Sensitive
Confidential		2001	Year	N
		2001	Year	N
		2001	Year	N
		2001	Year	N
		2001	Year	N
		2001	Year	N
		2001	Year	N
		2004	Year	N
		2001	Year	N
		2001	Year	N
		2001	Year	N

Unspecified Bat (Chiroptera)

Site name	Gridref	Date Recorded	Date Accuracy	Sensitive
Confidential		07/08/1989	Day	N
		16/08/2006	Day	N
		1986	Year	N
		1984	Year	N
		1986	Year	N
		1988	Year	N
		1988	Year	N
		1989	Year	N

Noctule Bat

Site name	Gridref	Date Recorded	Date Accuracy	Sensitive
Confidential		13/07/1998	Day	N
		23/07/1998	Day	N
		13/07/1998	Day	N
		23/07/1998	Day	N
		2001	Year	N
		2001	Year	N
		2001	Year	N
		2001	Year	N

Whiskered Bat

Site name	Gridref	Date Recorded	Date Accuracy	Sensitive
Confidential		11/07/2006	Day	N
		1996	Year	N
		1988	Year	N

National Biodiversity Network Database

Mammals

Common Pipistrelle Bat

Site name	Gridref	Date	Date	Sensitive
		Recorded	Accuracy	
Confidential		13/07/1998	Day	N
		23/07/1998	Day	N
		13/07/1998	Day	N
		23/07/1998	Day	N
		2001	Year	N
		2001	Year	N
		2001	Year	N
		2001	Year	N
		1984	Year	N
		1995	Year	N
		1995	Year	N
		1997	Year	N
		1998	Year	N
		2001	Year	N
		2001	Year	N
		2001	Year	N
		1993	Year	N
		2001	Year	N
		1984	Year	N
		1986	Year	N
		1988	Year	N
		1989	Year	N
		1989	Year	N
		1989	Year	N
		1989	Year	N
		1989	Year	N
		1989	Year	N
		2004	Year	N
2004	Year	N		

Soprano Pipistrelle Bat

Site name	Gridref	Date	Date	Sensitive
		Recorded	Accuracy	
Confidential		28/06/1997	Day	N
		07/06/1997	Day	N
		15/06/1997	Day	N
		07/06/1998	Day	N
		16/06/1998	Day	N
		14/05/1999	Day	N
		20/06/1999	Day	N
		13/06/1999	Day	N
		12/07/1999	Day	N
		02/08/1999	Day	N
		27/06/1999	Day	N
		20/06/2000	Day	N
		13/06/2000	Day	N
		10/06/2001	Day	N
		22/06/2001	Day	N
		16/06/2002	Day	N
		22/06/2002	Day	N
		07/06/2003	Day	N
		24/05/2003	Day	N
		15/05/2004	Day	N
		18/06/2004	Day	N
		06/06/2004	Day	N
		17/05/2005	Day	N
		17/06/2005	Day	N
		06/06/2005	Day	N
		16/06/2006	Day	N
		04/06/2006	Day	N
		15/06/1996	Day	N
		03/06/2007	Day	N
		09/06/2007	Day	N
		26/08/2008	Day	N
		20/06/2008	Day	N
		15/06/2008	Day	N
		29/05/2008	Day	N
		12/06/2008	Day	N
		04/06/2008	Day	N
		2001	Year	N
		2001	Year	N

Pipistrelle Bat

Site name	Gridref	Date	Date	Sensitive
		Recorded	Accuracy	
Confidential		August, 1979	Month	N
		1984	Year	N
		09/01/1986	Day	N
		27/07/1994	Day	N
		20/05/2006	Day	N
		20/05/2006	Day	N
		20/05/2006	Day	N
		18/09/2006	Day	N
		23/07/2007	Day	N
		23/07/2007	Day	N
		15/07/2004	Day	N
		2006	Year	N

National Biodiversity Network Database

Mammals

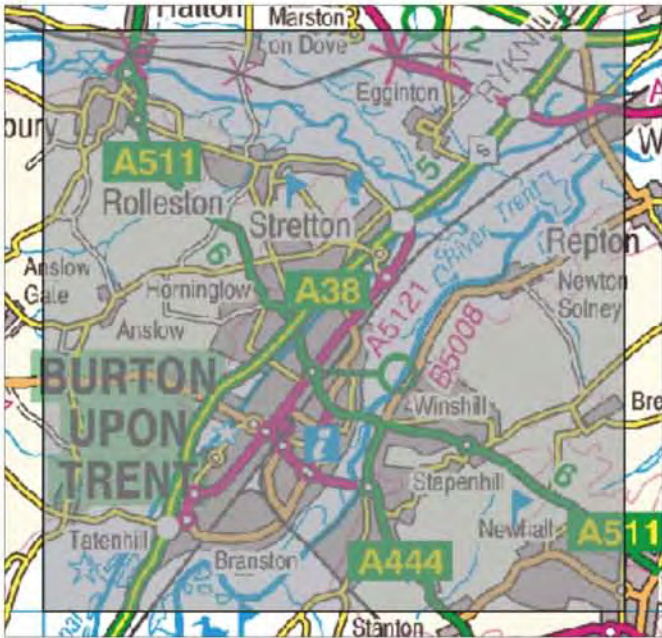
Daubenton's Bat

Site name	Gridref	Date Recorded	Date Accuracy	Sensitive
Confidential		30/07/1997	Day	N
		13/08/1997	Day	N
		10/08/1998	Day	N
		18/08/1998	Day	N
		02/08/1999	Day	N
		19/08/1999	Day	N
		07/08/2000	Day	N
		20/08/2000	Day	N
		01/08/2001	Day	N
		20/08/2001	Day	N
		06/08/2002	Day	N
		18/08/2002	Day	N
		02/08/2003	Day	N
		23/08/2003	Day	N
		07/08/2004	Day	N
		19/08/2004	Day	N
		06/08/2005	Day	N
		20/08/2005	Day	N
		11/08/2006	Day	N
		27/08/2006	Day	N
		Between September and November, 1999	Month Range	N
		05/07/2000	Day	N
		16/07/2005	Day	N
		July, 2005	Month	N
		16/07/2006	Day	N
		September, 2006	Month	N
		23/09/2006	Day	N
		25/04/2006	Day	N
		2001	Year	N
		1996	Year	N
	2001	Year	N	
	2005	Year	N	
	2006	Year	N	
	2006	Year	N	

National Biodiversity Network Database

Mammals

Hedgehog



Site name	Gridref	Date Recorded	Date Accuracy	Sensitive
Site name protected	SK22	17/10/2007	Day	N
Site name protected	SK22	September, 2009	Month	N
Site name protected	SK22	April, 2009	Month	N
Site name protected	SK22	October, 2009	Month	N
Site name protected	SK22	October, 2009	Month	N
Site name protected	SK22	09/10/2009	Day	N
Site name protected	SK22	October, 2009	Month	N
Site name protected	SK22	2009	Year	N
Site name protected	SK22	2009	Year	N
Site name protected	SK22	27/08/2009	Day	N

KEY:



10x10 km



2x2 km



1x1 km

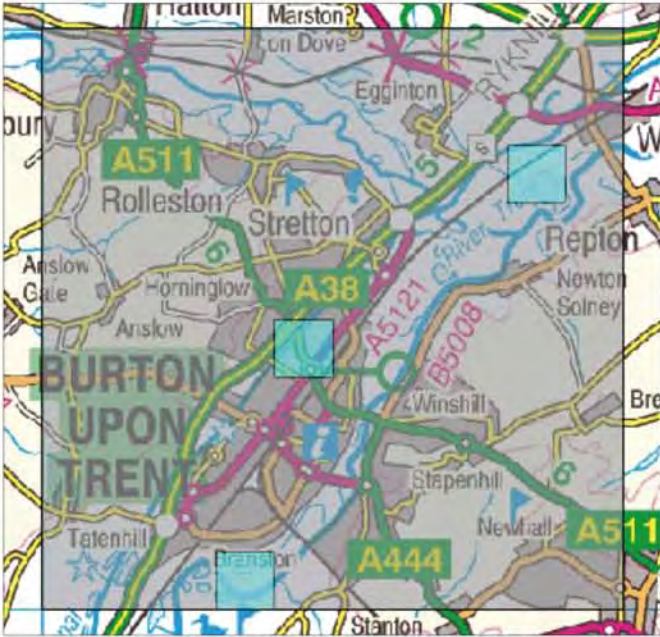


100x100m

National Biodiversity Network Database

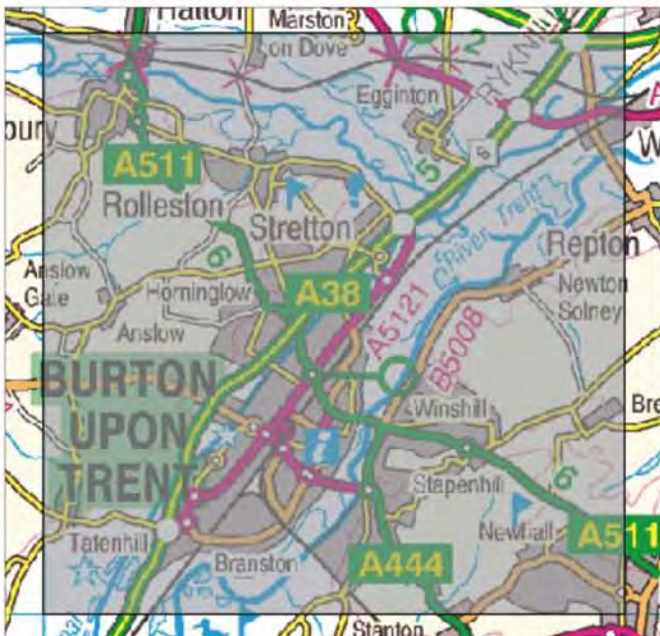
Reptiles

Grass Snake



Site name	Gridref	Date Recorded	Date Accuracy	Sensitive	Recorder	VICECOUNT Y
Drakelow Reserve	SK2320	05/07/1981	Day	N	Lunn, J. & B.	Staffordshire
Burton-on-Trent	SK2424	July, 1977	Month	N	Staffordshire BRC	Staffordshire
BURTON ON TRENT	SK2424	25/07/1977	Day	N	Mary Swan's reptile records	Staffordshire
Drakelow Wildfowl Reserve	SK2320	05/07/1981	Day	N		
Site name protected	SK2827	31/05/2005	Day	N		
Site name protected	SK22	25/07/1977	Day	N		
Site name protected	SK22	1978	Year	N		

Common Lizard



Site name	Gridref	Date Recorded	Date Accuracy	Sensitive
Drakelow, lane near Reserve, Derbyshire (vague sit	SK22	Between 1970 and 1973	Year Range	N

KEY:



10x10 km



2x2 km



1x1 km

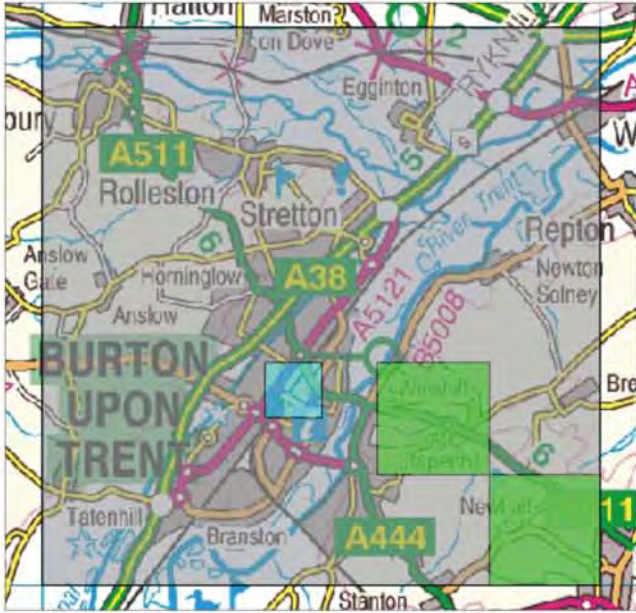


100x100m

National Biodiversity Network Database

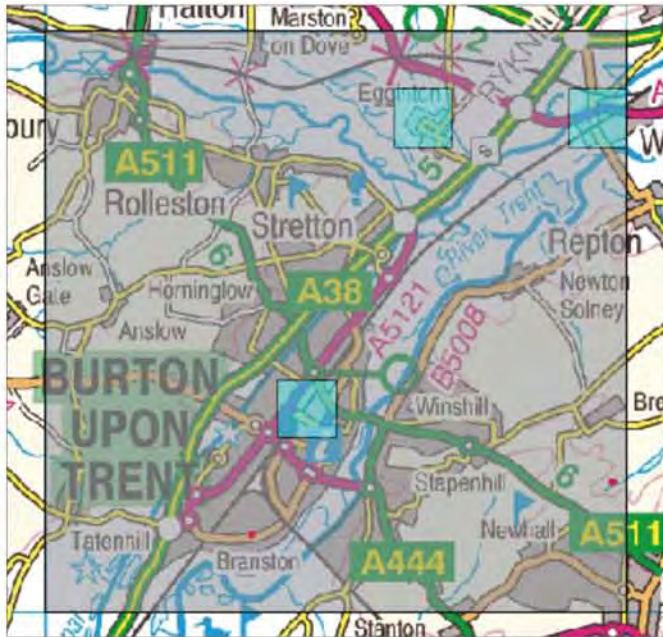
Amphibians

Great Crested Newt



Site name	Gridref	Date Recorded	Date Accuracy	Sensitive	Recorder	VICECOUNTY
Burton-on-Trent	SK2423	1961	Year	N	Staffordshire BRC	Staffordshire
Site name protected	SK22	26/07/2006	Day	N		
Site name protected	SK22V	1980	Year	N		
Site name protected	SK22R	2006	Year	N		

Common Toad



Site name	Gridref	Date Recorded	Date Accuracy	Sensitive	Recorder	VICECOUNTY
Drakelow	SK235213	1984	Year	N	Brown, N.	Staffordshire
Bretby Ponds, Top Pond	SK297222	April, 1984	Month	N	Brown, N.	Staffordshire
Willington, 8 Orchard Close	SK2928	16/08/1976	Day	N	Bull, L.	Staffordshire
Egginton, Blacksmiths Lane	SK2628	Between 1960 and 1985	Year Range	N	Dey, D.	Staffordshire
No site name available	SK2423	1960	Year	N	Staffordshire BRC	Staffordshire
Site name protected	SK22	Between June and August, 2002	Month Range	N		
Site name protected	SK22	22/05/2001	Day	N		
Site name protected	SK22	28/08/2003	Day	N		
Site name protected	SK22	1982	Year	N		

KEY:

10x10 km

2x2 km

1x1 km

100x100m

National Biodiversity Database

Species of Principal Importance in England

The following species, were recorded as having a distribution in the study area as shown below:

Birds

Common Bullfinch *Pyrrhula pyrrhula*
Common Cuckoo *Cuculus canorus*
Common Grasshopper Warbler *Locustella naevia*
Common Linnet *Carduelis cannabina*
Common Starling *Sturnus vulgaris*
Corn Bunting *Emberiza calandra*
Eurasian Curlew *Numenius arquata*
Eurasian Tree Sparrow *Passer montanus*
European Nightjar *Caprimulgus europaeus*
European Turtle Dove *Streptopelia turtur*
Grey Partridge *Perdix perdix*
Hawfinch *Coccothraustes coccothraustes*
Hedge Accentor *Prunella modularis*
Herring Gull *Larus argentatus*
House Sparrow *Passer domesticus*
Lesser Redpoll *Carduelis cabaret*
Lesser Spotted Woodpecker *Dendrocopos minor*
Marsh Tit *Poecile palustris*
Northern Lapwing *Vanellus vanellus*
Reed Bunting *Emberiza schoeniclus*
Sky Lark *Alauda arvensis*
Song Thrush *Turdus philomelos*
Spotted Flycatcher *Muscicapa striata*
Tree Pipit *Anthus trivialis*
Willow Tit *Poecile montanus*
Wood Warbler *Phylloscopus sibilatrix*
Yellow Wagtail *Motacilla flava*
Yellowhammer *Emberiza citrinella*

Flowering Plants

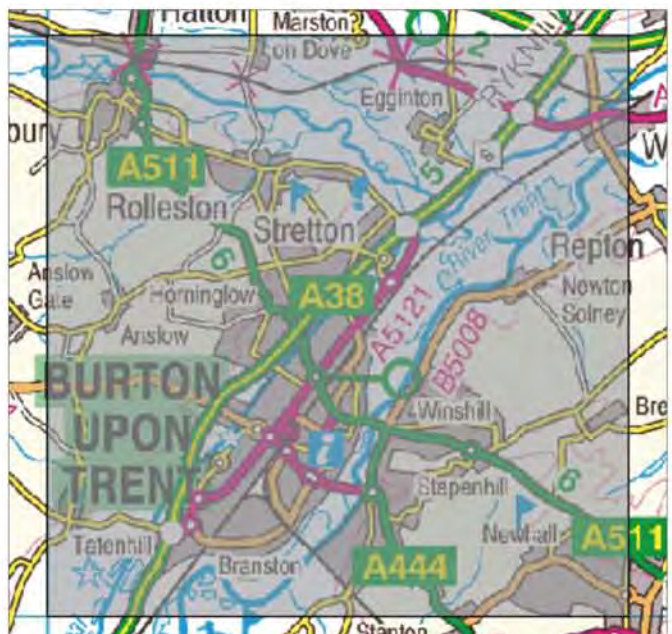
Annual Knawel *Scleranthus annuus*
Burnt Orchid *Orchis ustulata*
Corn Buttercup *Ranunculus arvensis*
Corn Cleavers *Galium tricornutum*
Cornflower *Centaurea cyanus*
Grape-hyacinth *Muscari neglectum*
Grass-poly *Lythrum hyssopifolia*
Grass-wrack Pondweed *Potamogeton compressus*
Marsh Stitchwort *Stellaria palustris*
Red Star-thistle *Centaurea calcitrapa*
Sea Barley *Hordeum marinum*
Small-white Orchid *Pseudorchis albida*
Spreading Hedge-parsley *Torilis arvensis*
Spring Speedwell *Veronica verna*
Stinking Goosefoot *Chenopodium vulvaria*
Thorow-wax *Bupleurum rotundifolium*
Tubular Water-dropwort *Oenanthe fistulosa*
Upright Goosefoot *Chenopodium urbicum*

Butterflies

Dingy Skipper *Erynnis tages*
Grizzled Skipper *Pyrgus malvae*
Small Heath *Coenonympha pamphilus*
Small Pearl-bordered Fritillary *Boloria selene*
Wall *Lasiommata megera*
White-letter Hairstreak *Satyrion w-album*

Moths

Autumnal Rustic *Eugnorisma glareosa*
Beaded Chestnut *Agrochola lychnidis*
Blood-vein *Timandra comae*
Brindled Beauty *Lycia hirtaria*
Broom Moth *Melanchra pisi*
Brown-spot Pinion *Agrochola litura*
Buff Ermine *Spilosoma luteum*
Centre-barred Sallow *Atethmia centrago*
Chalk Carpet *Scotopteryx bipunctaria*
Cinnabar *Tyria jacobaeae*
Crescent *Celaena leucostigma*
Dark-barred Twin-spot Carpet *Xanthorhoe ferrugata*
Deep-brown Dart *Aporophyla lutulenta*
Dot Moth *Melanchra persicariae*
Dusky Brocade *Apamea remissa*
Dusky Thorn *Ennomos fuscantaria*
Feathered Gothic *Tholera decimalis*
Figure of Eight *Diloba caeruleocephala*
Flounced Chestnut *Agrochola helvola*
Garden Tiger *Arctia caja*
Ghost Moth *Hepialus humuli*
Green-brindled Crescent *Allophyes oxyacanthae*
Grey Dagger *Acrionicta psi*
Knot Grass *Acrionicta rumicis*
Latticed Heath *Chiasmia clathrata*
Mottled Rustic *Caradrina morpheus*
Mouse Moth *Amphipyra tragopoginis*
Oak Hook-tip *Watsonalla binaria*
Powdered Quaker *Orthosia gracilis*
Rosy Minor *Mesoligia literosa*
Rosy Rustic *Hydraecia micacea*
Rustic *Hoplodrina blanda*
Sallow *Xanthia icteritia*
Shaded Broad-bar *Scotopteryx chenopodiata*
Small Phoenix *Ecliptopera silaceata*
Small Square-spot *Diarsia rubi*
Spinach *Eulithis mellinata*
White Ermine *Spilosoma lubricipeda*



APPENDIX 4

Colin Plant Associates Consultant Entomologists report entitled 'Burton-upon-Trent, Land at St Hawkins Lane, Invertebrate Appraisal,' dated August 2010

Commissioned by
ASPECT ECOLOGY
Hardwick Business Park
Noral Way
Banbury
OX16 2AF

BURTON-UPON-TRENT

LAND AT HAWKINS LANE

INVERTEBRATE APPRAISAL

Report number BS/2568/10
August 2010

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1 INTRODUCTION AND METHODOLOGY

- 1.1 **Colin Plant Associates (UK)** was commissioned by **Aspect Ecology** to undertake a preliminary examination of invertebrate habitats on an area of post-industrial land adjacent to Hawkins Lane, Burton-upon-Trent in Staffordshire.
- 1.2 A single site visit was commissioned. This was undertaken on 26th August 2010. The entire site was walked and terrestrial invertebrate habitats were examined in detail with a view to appraising their overall potential for the support of a diverse or important assemblage of invertebrates and to scope any specific survey work deemed to be necessary.

2 RESULTS

- 2.1 The site is situated within the town of Burton-upon-Trent and so has a lightly urban setting, but sits also in the valley of the River Trent which is a known area of wildlife interest (including invertebrates). It is flanked by a railway line along the north-western boundary and this provides a means of relatively unimpeded physical movement of invertebrates between town and adjacent countryside.
- 2.2 The site is of a post-industrial nature and is more or less level, albeit somewhat uneven in places. It is dominated by three distinct habitat types.
- There are small areas of sparsely-vegetated or bare ground on which a relatively diverse ruderal flora has developed. These dominated near the access gate area where parts of the ground are covered by concrete.
 - In the central area, the vegetation tends to be taller and is evidently larger established. The grassy sward is diversified by a number of tall ruderal herbs; although we did not undertake a botanical inventory it is evident that the flora is relatively diverse and this in turn is likely to support an equal variety of insects and other invertebrate groups.
 - Towards the north-west, there is an extensive area of scrub that is dominated by non-native *Buddleia* and a lesser number of self-sown native birch saplings.
- 2.3 Individually, these different habitat components will have a unique associated fauna. Together, on the other hand, they are likely to act to provide a far more diverse habitat mosaic that will be of value to a much wider range of invertebrate species. The value of the site is likely to be greater if there are other similar habitat features in the Burton district and reduced if it is an isolated example. This is because most invertebrates have evolved to persist at the landscape level, depending on a number of sites for their survival. Thus, a bumble bee, for example, might depend exclusively upon one site for a source of nectar or pollen for foraging males in August, but may utilise flowers elsewhere in the landscape in June when worker castes dominate the population and yet another for the provision of micro-habitat suitable to permit breeding.
- 2.4 In urban areas, the multiple facilities required by many species remain provisioned at that scale, but the different areas of the landscape providing individual components of the forage and breeding resources have become separated and isolated at discrete sites.
- 2.5 This community structure is known as a meta-population; small sites that are part of the required mosaic, providing one or more parameters of interest to the invertebrates, are part of a wider meta-habitat. This is the situation at the present site.
- 2.6 This principal explains the well-known and extremely high value to invertebrates of small, even tiny, post-industrial sites in eastern London, for example. However, in that area of the south-east of England the effects of the Thames Estuary microclimate also play a significant role – it is most unlikely that the invertebrate biodiversity at Burton will be as high as that on a similar, or even identical, site in East London. Additionally, there are certainly fewer species resident in this part of the Midlands in comparison with the south-east of England.
- 2.7 We have not undertaken detailed surveys of post-industrial sites in Burton. Examination of satellite imagery suggests that there may be a rather small number of such sites in the area, though the role of “green” (rather than “brown”) sites, including domestic gardens, in the meta-habitat may also be important.

3 DISCUSSION

- 3.1 It is, of course, in the nature of any ruderal site that it will eventually become altered as the natural vegetation change converts bare ground to woodland over a period of years. As this progression takes place, the associated invertebrate fauna inevitably alters and at each stage the fauna will have a different composition. It therefore follows that if such sites are ignored the high invertebrate interest associated with the early stages of ruderal succession will decline and ultimately vanish.
- 3.2 By definition, rare species depend on the rarest (that is, the shortest-lived) habitats; if they were able to thrive anywhere else then they would not be rare! In this system of natural change from bare ground to woodland, the shortest-lived phases are those dominated by bare ground and then sparsely-vegetated ground; it is no surprise that these support the greatest rarity component.
- 3.3 Nevertheless, as woodland develops the interest might be said to change rather than decline. Regrettably, however, on many post-industrial sites the invading scrub tends to be dominated by non-native *Buddleia* species which supports almost no invertebrates other than nectaring butterflies, bumble bees and hoverflies and so does in truth *reduce* the invertebrate interest. This is not yet the situation at Burton.
- 3.4 Thus, the meta-habitat is, by definition, fluid. It follows that if a site in the early stages of the succession is removed from the system by development for an alternative human use, then this has no greater or lesser effect on the meta-habitat than does a site becoming naturally degraded by invading *Buddleia*. However, when new sites are not being created at a rate sufficient to keep pace with losses at the other end, the loss of any site is likely to have a raised negative impact on the wider meta-habitat and on the overall invertebrate ecology of the district.
- 3.5 The development of the present site would undoubtedly cause local (site-specific) extinctions of invertebrate populations. However, as long as these lost populations are duplicated on other sites in the area then there should be no net loss to the meta-population. In order to monitor losses and gains some limited species survey of invertebrates would be necessary. This should be aimed at examining a representative sample of species with very specific micro-habitat requirements – species least likely to also be present elsewhere – in the May to July period.
- 3.6 The key to providing necessary human developments in harmony with brownfield wildlife interest is, simply, a matter of maintaining the fluid meta-habitat by the provision of new areas of ground in mitigation for the required land take. Thus, in order to maintain the meta-habitat in the Burton district, any loss of part or all of the present site ought to be mitigated by replacement.
- 3.7 We recommend that whichever part of the mosaic is removed from the present site by any future development, the replacement area created should mimic the early stages of the succession as this is the most vulnerable and is also the precursor for all subsequent stages. Thus, the loss of bare ground and the loss of tall ruderal grassland should both be replaced by providing new bare ground areas.
- 3.8 It is critical that the following three factors are taken into account in drawing up details of any proposed mitigation works:
- Avoid eutrophication of the substrate by, for example, the insertion of topsoil. Nutrient-poor ground is critical for the desired vegetation to become established. If the mitigation area selected is already nutrient-rich, the topsoil should be removed to expose the relatively nutrient-poor subsoil.
 - Avoid any form of tree-planting. Trees should be allowed to colonise naturally from seed brought in by the wind or wildlife.

- Avoid artificial seeding of nutrient-poor bare ground; it is the natural colonization and succession of plants that provides the critical micro-habitat features for the development of an ecologically important assemblage of invertebrates.

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