

Technical Appendix 14.1

Branston Locks, Burton upon Trent

Ecology Baseline Report – Habitats & Scoping

Nurton Developments (Quintus) Ltd

15 November 2012



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Version	Date	Status
6801/R03/Rev 1	15 th November 2012	Draft for Client Team review
6801/R03/Rev 1	15 th November 2012	Final report



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1 Introduction

1.1 Terms of Reference

Atmos Consulting Ltd has been retained to provide ecology consultancy services in respect of the Branston Locks site since 2007. In 2009 the company was commissioned by Nurton Developments (Quintus) Ltd (NDQL) to undertake an extended Phase I habitat survey and to advise on any additional specialist surveys necessary to gain an understanding of the site's ecology in sufficient detail to inform a Parameters Plan and more detailed illustrative Masterplan for the site. A suite of specialist surveys was duly undertaken in 2009, and the findings used to inform submissions to East Staffordshire Borough Council (ESBC) in respect of the Local Development Framework and Core Strategy strategic planning processes.

Having undertaken site walkovers to monitor ecological conditions in 2010 and 2011, and participated in Workshops with consultees that were hosted by NDQL in 2011, in 2012 a further extended Phase I habitat survey of the site was undertaken, to confirm whether any additional surveys were needed to inform an Ecological Impact Assessment (EclA) of the site in 2012.

This report provides a description of ecological baseline conditions at the site in April 2012, and sets out the scope of further specialist surveys that were then undertaken in April to August 2012. It is presented here as a Technical Appendix to the main EclA chapter in the Environmental Statement (ES) for the proposed development, which will be submitted with an outline application for the site during late 2012. Further specialist Technical Appendices to the ES that are relevance to the EclA are as follows:

- Technical Appendix 2.2 Tree Survey Report
- Technical Appendix 14.2 Great Crested Newt Survey Report
- Technical Appendix 14.3 Bat Survey Report
- Technical Appendix 14.4 Breeding Bird Survey Report

1.2 Objectives of the Study

The objectives of this study were as follows:

- to document the baseline conditions within the site through consultations, and extended Phase I habitat survey;
- to provide an early confirmation of, or update on, potential constraints to the development posed by the ecology of the site and its surroundings;
- to outline the scope and timing of any future ecological survey that would be recommended in 2012 in order to inform final design iterations and, ultimately, a robust EclA of the proposed development for submission to ESBC.

1.3 Site Description

The Branston Locks site is approximately 136.19ha in size and is situated to the north west of Burton upon Trent, adjacent to the A38 Trunk Road, which forms the eastern boundary. It is a generally linear site which is at its widest in the south west where it is bounded by Branston Road, and tapers to the north east where it ends at Shobnall Road.

The site supports large flat arable fields which are surrounded by mostly intact hedges with standard trees, and occasional ditches. It is bisected by the Trent and Mersey Canal and the private access road Anglesey Street, which leads to Lawns Farm, the main farmstead on the site, and adjacent 'The Bungalows'. Also included in the application site are the residential property at 225 Shobnall Road at the north end of the site and, at the southern end next to the Branston Interchange, a field used for horse grazing, including a small stable block and covered ménage.

The open fields rise in the west up to Battlestead Ridge, which is a steep-sided spine of wooded land running adjacent to and parallel with the site boundary. The highest point on the ridge, known as Battlestead Hill supports a small area of mature trees, and much of the rest of the ridge supports scrub and dense plantations of mainly deciduous tree species, which were planted in approximately 1996 under the National Forest Initiative, and are collectively known as the Bass Millennium Wood. Pockets of grassland, bramble scrub and tall ruderals are also present, as well as three ponds, situated on the top of ridge. A further nine waterbodies are present within 500m of the site boundary.

2 Legislative & Planning Policy Context

2.1 Legislation & National Policy Context

The National Planning Policy Framework (NPPF) was published by the government on 27th March 2012 and provides new guidance for local authorities, focusing on helping to produce planning policies that are clear and easier to understand. The NPPF became effective immediately and replaced existing planning policy guidance, including that relating to Biodiversity, Planning Policy Statement 9 (PPS9): Biological and Geological Conservation. However, the government circular 06/05: Biodiversity and Geological Conservation - Statutory Obligations and Their Impact within the Planning System, which accompanied PPS9, remains valid at the time of writing.

Section 11 of the NPPF specifies the requirements for conserving and enhancing the natural environment. While a key aim of the NPPF is to assist plan-makers, it also provides advice for the determination of planning applications, much of which reaffirms the protection previously afforded by PPS9 to designated sites, priority habitats and species and ancient woodland. The NPPF places a greater emphasis on ecological networks and states that the planning system should provide net gains for biodiversity: *“by minimising impacts on biodiversity and providing net gains in biodiversity where possible, contributing to the Government’s commitment to halt the overall decline in biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures”* (Paragraph 118).

While the implementation of the NPPF at the local level is yet to be fully determined, the guidance in relation to biodiversity provided by Circular 06/05 remains valid and the nature conservation legislation relating to protected species is unchanged. This guidance sets out a number of key principles, which include the need for baseline information; the need for biodiversity to be taken into account at all scales of development planning; the need for appropriate weight to be attached to biodiversity in decision-making; the need to prevent harm to biodiversity and geological interests and the need to promote opportunities for enhancement.

In considering biodiversity issues, there is a requirement for public authorities to pay due regard to the conservation and enhancement of habitats and species through section 40 of the Natural Environment and Rural Communities Act 2006 (NERC), which states, *“Every public authority must, in exercising its functions, have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity”*. To this end, section 41 of the NERC Act provides for the establishment of a list of habitat and species that are considered to be of *“principal importance for the conservation of biodiversity in England”*. The lists of habitats of principal importance (HPIs) and species of principal importance (SPIs) can be viewed on the DEFRA website at www.defra.gov.uk.

The above guidance indicates that the presence of a statutory protected species is a material consideration when a planning authority is considering a development proposal which, if carried out, would be likely to result in harm to the species or its habitat. National legislation for the special protection of selected species is provided in the Wildlife and Countryside Act 1981, as amended. Under Section 1(1) and 1(2), all British bird species, their nests and eggs (excluding some pest and game species) are protected from intentional killing, injury or damage. Under Sections 1(4) and 1(5),

special penalties are applied to bird species included in Schedule 1 of the Act and protection is extended for these species to disturbance to birds whilst building, in or near a nest and disturbance to dependant young. Schedule 5 provides special protection to selected animal species other than birds, through Section 9(4) of the Act, against damage to “any structure or place which any wild animal (included in the schedule) uses for shelter and protection” and against disturbance whilst in such places. The Countryside and Rights of Way Act 2000 (CRoW) amended Section 1(5) of the Wildlife and Countryside Act 1981 by introducing a new offence of “reckless” disturbance to protected wildlife and making certain offences punishable by imprisonment.

The Protection of Badgers Act 1992 provides protection to badgers and their setts.

A number of animal species are provided full protection through inclusion in Schedule 2 of The Conservation of Habitats and Species Regulations 2010, as amended. The Regulations, commonly referred to as the 'Habitats Regulations', extend protection against deliberate disturbance to those animals wherever they are present, and provides tests against which the permission for a development that may have an effect on a Schedule 2 protected species must be assessed before permission can be given. Bats, otter and great crested newt are species in this 'European protected species' (EPS) category which are known to be present in the vicinity of the Branston Locks site.

In addition to species protection, the Habitats Regulations also make provision for the statutory designation of Special Areas of Conservation (SACs) and Special Protection Areas (SPAs), which are sites that are recognised as being of international importance to nature conservation. SACs and SPAs are also known as 'European sites', as they contribute to the European-wide network of sites, known as 'Natura 2000'.

Special Areas of Conservation (SACs) are designated to protect sites supporting examples of natural habitats in Annex 1 to EC Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (the 'Habitats Directive') and populations of animal species in Annex 2 to the Directive (which excludes birds). Annex 1 habitats and Annex 2 species at a site may represent either a “primary reason for [its] selection” as a SAC, or being, “present as a qualifying feature, but not a primary reason for site selection”.

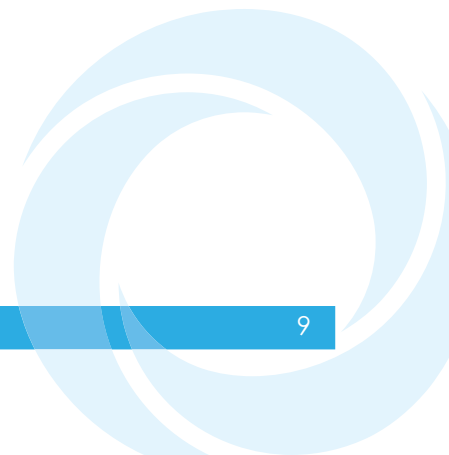
For each SAC and SPA, Natural England (NE) publishes site-specific conservation objectives that relate to the features for which it has been designated as a European site. Under Regulation 48 (1), if a significant effect on a European site is predicted as a result of a project, either alone or in combination with other projects or plans; it is against the conservation objectives that potential implications of development proposals must be assessed by a Competent Authority before the granting of planning consent, permission or other authorisation.

In making such an assessment, termed an “appropriate assessment”, the Competent Authority must take into consideration whether, subject to the impact avoidance and mitigation measures proposed the scheme will adversely affect the integrity of the European site. The term integrity is defined as the, “coherence of the site's ecological structure and function, across its whole area, or the habitats, complex of habitats and/or populations of species for which the site is ... classified”.

2.2 Other Initiatives - UK & Staffordshire BAPs

Biodiversity Action Plans (BAPs) were developed as part of the British government's strategy for the implementation of the 1992 Convention on Biological Diversity, to which it is a signatory. BAPs developed for the UK and devolved to local levels (LBAPs) as a result of the original convention are in place to protect a number of rare species and habitats and reverse the declines of more widespread, but declining, species and habitats. Under the biodiversity duty enshrined in the NERC Act, it is good practice for BAP and LBAP species and habitats to be taken into consideration in the planning of a development scheme. Many UK and local BAP habitats and species are also listed on the NERC s.41 list of HPs and SPs.

In addition to the overall UK BAP, the area affected by the proposed development at Branston Locks is covered by the Staffordshire LBAP.



3 Desk-Based Review of Existing Information

3.1 Statutory designated sites

Designated sites within approximately 2km radius of the Branston Locks site are shown in Figure 14.1.

3.1.1 International & National Sites

Review of the government website <http://www.magic.gov.uk> confirmed that the Branston Locks does not lie within or close to any statutory site designated for international or national nature conservation value.

In its consultation response, Natural England (NE) mentioned that the site's geographical proximity to the River Mease Special Area for Conservation (SAC) meant that consideration should be given to the potential for impacts to this designated European site. Review of the location of the SAC indicated that its catchment lies entirely on land to the south of the application site, on the opposite side of the River Trent. As such, there is no potential for the River Mease to be affected – either directly or indirectly – by drainage water discharges from the Branston Locks site. On this basis, the River Mease SAC is not considered in detail in the EclA.

Two further statutory sites with the nationally-important Site of Special Scientific Interest (SSSI) designation were also present within a 10km radius of the Branston Locks site and thus mentioned by NE in its scoping response. These were the Braken Hurst SSSI and the Old River Dove SSSI.

Braken Hurst SSSI is an area of Ancient Woodland with a particularly noteworthy variety of woodland types as a result of its management history. Lying at a distance of 6.4km to the west of the Branston Locks site, there is no viable pathway by which the proposed development would be predicted to have either direct or indirect effects on this SSSI, and it is thus not considered in detail in the EclA.

The Old River Dove SSSI is a small meander cut-off in the floodplain of the River Dove that is designated for its good range of aquatic and marginal habitats, including plant species and dragon- and damsel-fly populations of significance, which lies approximately 5km north of the Branston Locks site. At this distance, and with no aquatic pathways linking the application site with the SSSI, it is considered that there is no potential for any impacts to its special interest as a result of the proposed development. The Old River Dove SSSI is not therefore considered in detail in the EclA.

3.1.2 Local Statutory Sites

A single Local Nature Reserve (LNR), which is a statutory designation for sites of less than national value, is present at Branston Water Park, where the Branston Water Park LNR covers one of the waterbodies that is well-used public amenity, including water sports. The designation lies approximately 300m to the south west of Branston Locks.

The LNR designation is awarded for more than just nature conservation reasons, and as the LNR waterbody is part of a wider non-statutory nature conservation designation in this area of former gravel workings, its biodiversity interest and potential for impacts to it

are considered in relation to that (Site of Biological Importance) designation in this chapter.

3.2 Non-statutory designated sites

3.2.1 Sites of Biological Importance

Two waterbodies (including the LNR above), are covered by a second-tier non-statutory nature conservation designation, known as a Site of Biological Importance (SBI). This designation is awarded to sites of County level nature conservation value. Information provided by Staffordshire Environmental Record (SER), the County biological records centre, indicated that the Branston Gravel Pits SBI is designated primarily on the basis of its aquatic habitats and use by birds.

A second SBI, Battlestead and the Rough, is present on the steep slopes of Battlestead Hill above the Branston Locks site. The designation covers a 2.5ha block of mature secondary woodland on an ancient woodland site, which is owned and managed by the Woodland Trust. Also included in this SBI is a narrow strip of secondary woodland that extends downslope from Battlestead Hill Wood to the rear of Lawns Farm Cottage. This strip of woodland towards the bottom of the slope lies just inside the southernmost boundary of the application site.

3.2.2 Biodiversity Alert Sites

Also present locally are a number of Biodiversity Alert Sites (BASs). Whilst BAS is not a designation as such, these are areas currently of less than local value that have been identified through the county's regular biodiversity site review process as having potential to develop to SBI status, if they can be subject to enhancement measures to improve their biodiversity value. As such they are therefore a particular focus for site biodiversity enhancement measures. The BASs with potential to be affected by the proposed development are as follows:

- 'Branston Lock', which covers the Trent and Mersey Canal, which runs across the centre of the site;
- the hedges and verges along Branston Road, which bounds the southernmost end of the application site; and,
- the verges of the A38 trunk road at Branston Interchange.

3.3 Existing Biological Records

Consultations with Staffordshire Ecological Record (SER), which is the county's biological record centre, did not reveal any records for the Branston Locks site itself when consulted in 2009 or 2012. It did however, provide details of non-statutory designated sites (see above) and a range of records for protected, SPI and UK/LBAP habitats and species for a 2km radius around the site. These records have been referred to in the relevant sections of this report, the ES Chapter and the other Technical Appendices 14.2 to 14.4.

4 Methodology

4.1 Extended Phase I Habitat Survey

An “extended” Phase I habitat survey, as described in the *Guidelines for Baseline Ecological Assessment* (IEA, 1995), was undertaken on 11th April 2012. Phase I habitat survey is a standardised method of recording habitat types and characteristic vegetation, as set out in the Handbook for Phase I Habitat Survey – a technique for Environmental Audit (JNCC, 1993). This survey method is extended through the additional recording of specific features indicating the presence, or likely presence, of protected species or other species of nature conservation significance.

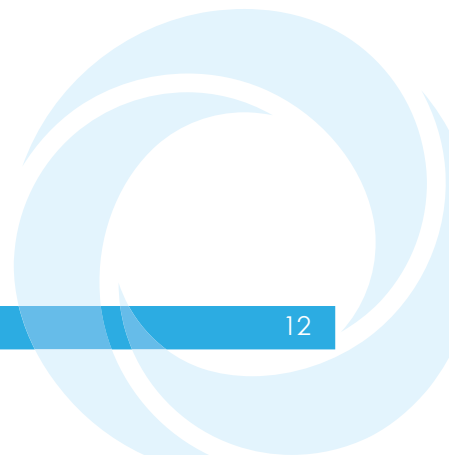
Target notes are made to describe characteristic habitats, features of ecological interest, or any other features which require ecologically sensitive design or mitigation.

Whilst not a full protected species or botanical survey, the extended Phase I method enables a suitably experienced ecologist to obtain sufficient understanding of the ecology of a site that it is possible either:

- to confirm the conservation significance of the site and assess the potential for impacts on habitats/species likely to represent a material consideration in planning terms; or,
- to ascertain that further surveys of some aspect(s) of the site's ecology will be required before such confirmation can be made.

In this case the extended Phase I habitat survey included a preliminary hedgerow survey, a survey to verify the condition of trees within the site, and a badger and otter/water vole survey of the application site. The hedgerow survey and tree survey verifications were finalised during site walkover visits on 6th and 31st August.

There were no limitations to the surveys of the Branston Locks site that would compromise the robustness of the data gathered there, or the conclusions and recommendations that can be drawn from it.



5 Survey Results

5.1 Habitats within the Branston Locks Site

The habitats within and around the Branston Lock site and the adjacent ponds are shown on the Phase 1 habitat plan (Figure 14.2) and described below. The Pond Location Figure (14.3) shows the location of the ponds on site and the land surrounding the site, with 250m and 500m buffers to illustrate the intermediate and distant zones considered in respect of great crested newts around each pond. Tree numbers are provided on the Tree Survey Plan in the ES (Technical Appendix 2.2) and also included in Technical Appendix 14.3 on bats.

The habitats recorded within the application site boundary are listed below, in order of abundance, from the most to the least extensive:

- Arable land;
- Species-poor semi-improved neutral grassland;
- Improved grassland;
- Boundary features – hedges and dry ditches;
- Mature trees – individuals and groups;
- Woodland;
- Tall ruderals and scrub;
- Trent and Mersey Canal;
- Running water – drain through site; and,
- Buildings and tracks.

5.1.1 Arable Land

The majority of the application site is intensively managed arable used for winter cereal production, with no winter stubbles present. It is ploughed to within the regulation 2m limit of the midline of all boundary features. As a man-made, intensively managed and regularly disturbed habitat that is common and widespread, the arable land is of negligible intrinsic conservation value under its current management regime. The only faunal species of note observed in these habitats within the site were breeding skylark *Alauda arvensis*, and a brown hare *Lepus europaeus*.

5.1.2 Field Boundaries

The field boundary features, which are mainly species-poor hawthorn *Crataegus monogyna* or blackthorn *Prunus spinosa*-dominated hedges, are also heavily managed through annual cutting to a low (mainly 1.5 – 1.8m) height, with hedge bases open and gappy and only limited ground flora or cover for small animals. Some of the hedges are associated with ditches, but these were dry or barely damp during all survey visits. All of the hedges have a narrow fringe of species-poor rank grassland between their base and the ploughed edge of the field, and the tracks through the site also have narrow verges of this species-poor grassland. Although these hedgerows and grass verges have been managed in a way that limits their conservation value at present, they are used by a range of breeding farmland birds and small mammals.

Arable field margins and hedgerows are both HPLs, i.e. habitats that have been listed by the government as being of principal importance for the conservation of biodiversity in England, but at the Branston Locks site – as is common across most of lowland England – the nature conservation value of these features is limited by the intensity of agricultural management that they are subject to.

5.1.3 Semi-improved Grassland

In addition to the poor semi-improved grassland verges, there are two small blocks of semi-improved grassland within the application site. One is in the main part of the site, just north of Lawns Farm Cottage, and had a variable sward including occasional bare areas, and comprised mainly perennial rye-grass, cock's-foot, creeping bent and other bent grasses, Yorkshire-fog and red fescue, with white clover and some self-heal, with creeping thistle in evidence around the margins when surveyed. The second field could not be accessed due to there being no permission, but it was observed from just outside to be a mainly grass-based sward with relatively few broadleaved species, but extremely over-grazed and dry. In both cases this grassland is assessed as being of negligible intrinsic nature conservation value.

Off-site, at target note TN8, is an unmanaged field that retains fragments of more diverse semi-improved grassland. These patches remain open where grazed by rabbits, but the majority of the field has been unmanaged for so long that it now largely supports tall ruderals and bramble scrub.

5.1.4 Improved Grassland

There are small blocks of improved agricultural grassland, mainly perennial rye-grass, with cock's-foot and false oat-grass in the northernmost field, within the application site; mainly located around the properties at Shobnall Grange. The fields are unfenced and less intensively managed than the arable fields, and of negligible intrinsic nature conservation value, although the sward does contain some tall ruderals and provides potential cover for a range of small mammals and amphibians. A local resident has reported great crested newts to be present in a garden pond at Shobnall Grange (P12 in Figures 14.2 and 14.3) and, if this is the case, it is likely that this species will forage and take daytime shelter in this neighbouring area of grassland.

5.1.5 Mature Trees

The application site supports approximately 161 individual mature trees, most of which are of deciduous species and are concentrated along field boundaries. The predominant species across the site as a whole is common oak *Quercus robur*, with some mature and veteran ashes *Fraxinus excelsior*, but locally in wetter areas there are lines or groups of willow *Salix* species. At the north end of the site is a visually prominent line of Lombardy poplars *Populus nigra* var 'Italica', part of which lines the access to Shobnall Grange.

Most of the oaks, ashes and poplars were assessed by an arboriculturist as being in satisfactory condition and suitable for retention if they could be accommodated in the layout of any future development, whereas the willows were generally of lower retention value. A small number of Scots pine *Pinus sylvestris* are also present along the western boundary of the site; including three good specimens associated with Lawns Farm.

Considered individually, each mature tree is a feature of negligible nature conservation value, but as mature trees cannot be replaced in a human timescale they collectively represent a non-renewable resource of less than local value, i.e. of value in the context of the site. In addition to oaks and willows being species that support good invertebrate diversity and biomass, the trees within the site – especially the veteran ashes along the foot of the Needwood Scarp (Ts 6 – 11 inclusive on the Tree Survey Plan presented as Appendix A to the Bat Survey Report) – include a number with cavities, fissures or cladding of ivy *Hedera helix* that provide habitat suitable for use by breeding birds or roosting bats.

5.1.6 Woodland

The only part of the site where the tree cover and habitat structure is sufficiently developed to be considered as woodland is the narrow strip of SBI-designated secondary oak woodland running up towards Battlestead Hill from behind Lawns Farm Cottage, along the southern edge of the site (see G1, in Figure 14.2). Bounded on its northern edge by a dry shallow ditch, this wooded strip is approximately 20m wide, with the canopy formed by the largest trees, which are mainly oaks positioned in a line immediately south of the ditch. There are smaller broadleaved trees behind the oaks, including ash, sycamore *Acer pseudoplatanus* and cherry *Prunus avium*.

The understory consists predominantly of leggy hawthorns and elder *Sambucus nigra*, but the narrow width of this wooded strip means that it receives too much light at ground level to have developed true woodland ground flora. Whilst there is some dog's mercury *Mercurialis perennis*, the other main herbaceous species present were herb-Robert *Geranium robertianum* and common nettle *Urtica dioica*. Although considered on its intrinsic characteristics this woodland strip is evaluated as being of less than local ecological value, for the purposes of the impact assessment process it is evaluated as being of County value because it is within the SBI designation.

The rest of this designated SBI is off-site and consists of a small (2.5ha) area of mature secondary woodland on an Ancient Woodland site on the summit of Battlestead Hill. Battlestead Hill Wood (TN9) is owned and managed as a reserve by The Woodland Trust.

5.1.7 Tall Ruderals & Scrub

Tall ruderals such as common nettles, thistle *Cirsium* species, dock *Rumex* species, great willow herb *Epilobium hirsutum* and common hogweed *Heracleum spondulifera* are present throughout the site in areas that had been unmanaged for a number of years. Bramble *Rubus fruticosus* and elder or willow scrub are also starting to colonise these areas. The main areas for these tall ruderal and scrub communities are under the trees around the edges of wooded areas; along the drain and northern banks of the canal; around the farm buildings and in two unmanaged fields of former semi-improved grassland within the site.

TN7 is a field corner that may once have supported a pond as its centre is a depression in the ground that supports great willowherb and bitterweet (indicating damp ground) as well as nettles, thistles and (increasingly) brambles, with some willow saplings evident.

These habitats provide areas of greater species and structural diversity than surrounding farmland, and are thus of some value to nature conservation at the level of the site; particularly where they offer sources of nectar. They are however of negligible intrinsic

conservation importance and the resource they provide could be readily replicated in any future development.

5.1.8 Trent & Mersey Canal

The section of the Trent and Mersey Canal, designated as a BAS, that runs through the centre of the site (TN1 in Figure 14.2) is well-used by boat traffic and, as such, the water is highly turbid, devoid of aquatic vegetation and in places has a discernible thin film of hydrocarbons on its surface. The bank on the southern side has a tow path backed by a species-poor hawthorn-dominated hedgerow (H29 in Figure 14.2), and the bank has no fringe of marginal vegetation. The northern bank had no marginal fringe of vegetation during the 2012 survey either, as it appeared to have been removed during maintenance operations since the previous survey in 2010. However, it has been observed in the past to have developed a narrow fringe of marginal vegetation, including common reed *Phragmites australis*, yellow iris *Iris pseudocorus* and reed sweet-grass *Glyceria maxima* in between episodes of maintenance. Other than at the location of Branston Lock itself, where the canal banks on both sides support short amenity grassland, the canal banks are densely vegetated with tall ruderals.

5.1.9 Drain at TN2

The only running water habitat within the Branston Locks application site is a slow-flowing drain in a deep ditch (see TN2 in Figure 14.2) that crosses the site sub-parallel to, and one field north of, the Canal. The water had a barely perceptible flow whenever surveyed, and its depth varied between 10 - 30cm, with a silty bed visible through water that was mainly clear. In some areas the drain flows under the dense shade of the hedge and/or trees along its southern side and is unvegetated, but for most of its length the channel is overhung by rank grasses and tall ruderals growing on its densely-vegetated banks, with the channel also well-vegetated with stands of marginal species including greater pond-sedge *Carex riparia*, lesser water-parnsip *Berula erecta*, common reed *Phragmites australis* and bulrush *Typha latifolia*. Water-starwort *Callitriche* species were the only aquatic species recorded, in the limited areas where unshaded open water was present.

Parts of the drain were so slow-flowing when surveyed that they were suitable for amphibian breeding, and thus this feature was surveyed for great crested newts in both 2009 and 2012.

5.1.10 Buildings

The buildings within the application site are at Lawns Farm (TN4); 'the Bungalows' (TN5) slightly further north; a further bungalow at 225 Shobnall Road and a small stable block and indoor ménage near the Branston Interchange. Lawns Farmhouse and adjacent The Bungalows both occupy sheltered sites on the western boundary of the application site, immediately below the slopes of the Needwood Scarp, with the farm outbuildings extending slightly further into the site. The riding complex in the lee of the elevated Branston Interchange was also sheltered, with the presence of livestock ensuring a reliable source of invertebrates for bat feeding, although the area was affected by night time illumination from the road.

All buildings were subject to an exterior inspection by a licensed and suitably experienced bat ecologist, who is also experienced in the identification of barn owl signs.

As a result of the extended Phase I habitat survey, Lawns Farmhouse (which has no loft space) was assessed as having high potential as a bat roost site for crevice-dwelling species. The Bungalows was assessed as having medium bat roost potential, and the property on Shobnall Road and all buildings at the riding stables low potential.

The four brick-built outbuildings on the farmyard were in too advanced a state of disrepair and open to the elements to be suitable for void-dwelling bat species, but were assessed as having medium potential as a roost site for crevice-dwelling species. The remaining buildings on site were all constructed from corrugated metal and were assessed as having little or no potential to support roosting bats.

5.2 Habitats adjacent to the Branston Locks Site

The habitats outside of the application site boundary but with potential to be affected by the proposed development are listed below, in order of abundance, from the most to the least extensive.

- Plantation woodland (Bass Millennium Wood, The Rough, and A38 verges);
- Standing water – waterbodies P1 – P12; and,
- Running water – Shobnall Brook.

5.2.1 Plantation Woodland

Bass Millennium Wood & The Rough

Bass Millennium Wood (TN10), which abuts the south west boundary of the application site, is 30.27 ha of densely planted mainly native deciduous plantation. It does not form part of the formal Description of Development but falls within the ownership of NDQL. The compartments are generally blocks of single species, planted in closely spaced rows. The woodland is now approximately 16 years old, with trees measuring 5+ m in height, which means that the canopy is entirely closed. The light levels below the trees are so low that there is no understorey, ground layer, epiphytes, climbers or regeneration in evidence – just bare ground with leaf litter.

To the north of TN10, land outwith the ownership of NDQL is habitat that is a mixture of self-sown scrub and maturing woodland with occasional large trees. This area (TN11) is known as The Rough.

The woodland throughout this part of the Needwood Scarp is used by a good range of nesting birds and provides cover for mammals that include badgers, and its extent is such that it is a resource of local nature conservation value, i.e. of value in the context of East Staffordshire Borough. However, it is now at a point where it requires active management in order for the trees to develop into healthy larger specimens, and its ecological value could also be enhanced through sensitive management.

A38 Branston Interchange

The plantation woodland BAS on the verges of the A38 Branston Interchange (TN12) is dominated by mature specimens of non-native sycamore trees, with the trees planted close together, with some growth of hawthorn and elder below and behind the trees,

but minimal ground flora. It is a feature of negligible ecological value, but provides an important visual screen and was thus evaluated as having a high retention value in the Tree Survey Report.

5.2.2 Standing Water

Although the OS base maps of the Branston Locks site shows a pond to the south east of the farm (TN3); a lagoon in the east side of the farmyard; and a pond in a field corner to the rear of Shobnall Grange, these features have always been dry when the site has been surveyed, and their vegetation, which is dominated variously by creeping-bent *Agrostis stolonifera*, common nettle, great willowherb and bittersweet *Solanum dulcamara* indicates that these are damp rather than aquatic habitats.

There are, however, a series of waterbodies off-site, and all of these within 500 m of the site boundary were considered during the extended Phase I habitat survey, to assess whether or not they had potential to support great crested newts. In accordance with good practice, a schedule of all waterbodies within this distance, which is the extent around a waterbody in which most great crested newts will range if they are breeding there, was drawn up and a Habitat Suitability Index (HSI) assessment¹ undertaken. The pond numbers are indicated in Figure 14.3.

The canal and large, open lakes at Branston Water Park LNR (P1) and the Branston Gravel Pit SBI (P2) were entirely unsuitable for great crested newts, and the moat at Sinai Park (P11) could not be seen. The garden pond reported to be present at Shobnall Grange (P12) was not known of until October 2012, and at the time of writing has not been seen. All of the other off-site waterbodies were field ponds, and the HSI assessment resulted in the following estimates of habitat quality for great crested newts at each:

P1	unsuitable	Branston Water Park LNR
P2	unsuitable	Branston Gravel Pit SBI
P3	HSI = 0.8 (excellent)	West Battlestead Ridge
P4	HSI = 0.79 (good)	Central Battlestead Ridge
P5	HSI = 0.57 (below average)	East Battlestead Ridge
P6	HSI = 0.62 (average)	North of Battlestead Ridge
P7	HSI = 0.62 (average)	West of Sinai Park
P8	HSI = 0.51 (below average)	West of Sinai Park
P9	HSI = 0.53 (below average)	West of Sinai Park
P10	HSI = 0.62 (average)	South west of Shobnall Grange
P11	HSI = unknown	Moat at Sinai Park
P12	HSI = unknown	Shobnall Grange garden pond

Access permission to survey for great crested newts in 2012 was available for ponds P3 to P5 inclusive, but permission was not available for ponds P6 to P11. Pond P12 was not

¹ ARG UK (May 2010). *Great Crested Newt Habitat Suitability Index*.

suspected at the time of surveys. Further information on these waterbodies, and the results of the HSI and great crested newt surveys is provided in the Great Crested Newt Survey Report at Technical Appendix 14.2.

5.2.3 Shobnall Brook

Shobnall Brook is a small watercourse in a deeply incised and heavily overgrown channel between 1.5 – 4 m below ambient ground level, which forms part of the northern boundary of the application site and will need to be crossed by the main access to Shobnall Road.

5.3 Flora

5.3.1 Species of Conservation Value

No records of plant species of conservation significance were identified during either desk study or surveys of Branston Locks. Given the impoverished and highly modified habitats at the site, it would not be anticipated that any would be present.

5.3.2 Invasive Species

In terms of invasive species, whose spread in the wild would constitute an offence under the terms of the Wildlife and Countryside Act 1981, as amended, none were recorded at the Branston Locks site.

5.4 Fauna

5.4.1 Bats

The only EPS whose presence within the application site had been confirmed during surveys in 2009 were bats, as a small roost of common pipistrelles *Pipistrellus pipistrellus* was identified as being present in the roof of Lawns Farmhouse in July of that year. The 2009 survey work on use of the site by bats for foraging and commuting had informed the design of the Parameters Plan and illustrative Masterplan, and guided the retention and enhancement of the proposed development's 'green fingers'. The location, design in acceptability in principal of these features had been a specific focus of one of the consultee workshops held in 2011, and as the site's habitats had not changed since 2009, it was appropriate that the focus of bat surveys for the 2012 update surveys would be to check the roost at Lawns Farmhouse more closely. Surveys were originally scheduled for July 2012, but due to unsuitably wet and cold weather conditions in July the first visit was in early August, with a second visit in late August. The Bat Survey Report is provided as Technical Appendix 14.3.

5.4.2 Otters

No field signs confirming the presence of otters *Lutra lutra* were found during otter surveys carried out within the application site as part of the extended Phase I habitat surveys during 2009 or 2012. However, SER provided records of this EPS having been recorded in recent years at the Branston Gravel Pits SBI, and having left spraint (dung) at Branston Bridge, where Branston Road crosses the Trent and Mersey Canal. As otters have become well-established in Staffordshire, it can be stated with certainty that this

species will range through the site at times. The most likely habitat to be used by otters would be the corridor of riparian habitat along the Trent and Mersey Canal, although the possibility of individuals also using the slow-flowing drain (TN2 in Figure 14.2) or Shobnall Brook on occasion cannot be entirely ruled out.

In none of these areas, however, is there suitable cover within which holts (dens) could be excavated without having been detected during the surveys. No spraint was found at the canal, the drain across the site or on the section of Shobnall Brook that mark the northern boundary of the application site in either 2009 or April 2012. It is therefore concluded that otters are not resident within the application site.

5.4.3 Great Crested Newts

In 2009 great crested newts had been confirmed as breeding at ponds P3 and P4 on the summit of Battlestead Ridge. None of the features within the site were considered suitable for great crested newt breeding, but small areas of open water in the drain (TN2) were nevertheless also surveyed for this EPS in 2009, even though this feature had a HSI score of 0.46 (indicating poor quality habitat for newts). As the plantations and grassland surrounding the ponds on the Needwood Scarp and land use on the far (west) side of Battlestead Ridge had altered since 2009, and given the importance of EPS issues, it was determined that the great crested newt surveys should be updated in 2012.

Ponds P3 and P4 on the summit of Battlestead Ridge and within the ownership of NDQL were surveyed, but pond P5, also on the ridge, could not be surveyed as physical access was impossible due to the impenetrable nature of the encircling thorny scrub. Ponds P7 – P11 inclusive were not surveyed as there was not permission to access third party land for this purpose, and in October 2012 a resident reported great crested newts being present in a previously unknown garden pond at Shobnall Grange, which has therefore been referred to in the ES and all Technical Appendices as pond P12.

The findings of the great crested newt surveys are provided in Technical Appendix 14.2. (A single) smooth newt *Lissotriton vulgaris*, common frogs *Rana temporaria* and adult common toad *Bufo bufo* were all recorded within the application site, with more individuals of these species, as well as palmate newts *L. helveticus* and a medium size-class great crested newt population confirmed during the surveys of ponds P3 and P4 on Battlestead Ridge.

5.4.4 Water Voles

No burrows or other evidence of water voles was recorded within either the Trent and Mersey Canal or any of the drains or ditches within the application site during the extended Phase I survey visits in either 2009 or 2012, and nor were any records of the species reported by SER within 2km of the site. On this basis, it is reasonable to assume that this species is not present at Branston Locks.

5.4.6 Reptiles

The habitats at Branston Locks are sub-optimal for reptile species, and SER consultation data did not indicate any known records within 2km of the application site. As the most suitable habitats, e.g. those along the woodland edge along the west side of the site and the banks of the Trent and Mersey Canal, are to be retained and enhanced, it was considered sufficient to assess for these species through vigilance during site walkovers and all other surveys. Over the many survey visits to the site in 2008, 2009, 2010, 2011 and 2012, no sign of any reptile species has been observed either within the site or an adjacent land at Battlestead Hill, and on this basis it is considered reasonable to assume that reptile species are not present at Branston Locks.

5.4.7 Breeding Birds

Although the bird survey data was almost three years old at the time of the 2012 scoping exercise, the habitats within the site, and thus the bird populations likely to be present, were unchanged since the original survey in 2009. On this basis, it was considered that the existing data, which had been used to inform the ecologically sensitive design of the Parameters Plan and the illustrative Masterplan in the intervening time, provided an acceptable basis for the 2012 EclA. Full details of the survey method and findings are presented in the Breeding Bird Survey Report at Technical Appendix 14.4, and illustrated in Figure 14.5. A summary is provided below.

The breeding bird surveys were undertaken on 21st April, 12th May, 17th May and 23rd June 2009, and covered both the application site and a buffer of land on the south east-facing lower slopes of the Needwood Scarp to the west of the application site.

A total of 48 species were observed in the survey area, of which 42 were considered to be breeding. Of these, five were recorded only in the woodland in the survey buffer area.

Of the breeding species, there were no Annex 1 (EU Birds Directive) or Schedule 1 (Wildlife and Countryside Act, 1981) protected species recorded. Common tern *Sterna hirundo*, an Annex 1 species, was recorded feeding over the Trent and Mersey Canal, but was not breeding in the survey area. The Schedule 1 species barn owl *Tyto alba*, which consultees reported as breeding approximately 3 – 500 m to the west, was observed twice during 2009. None were seen incidentally during any of the 2012 dawn/dusk bat visits.

Seven species of principal importance in England (SPI) and UK BAP species were recorded to be breeding within the application area, as follows:

Dunnock* *Prunella modularis*
 House sparrow** *Passer domesticus*
 Linnet** *Carduelis cannabina*
 Reed bunting* *Emberiza schoeniclus*
 Song thrush** *Turdus philomelos*
 Skylark** *Alauda arvensis*
 Yellowhammer** *Emberiza citronella*

Of these, five species (**) were on the 'red list' of conservation concern², and two (*) on the 'amber list'. Five were also listed in the Staffordshire Local BAP (linnet, house sparrow, skylark, yellowhammer, and reed bunting).

The populations of these SPI/UK BAP bird species have been assessed as a feature of the application site that is of local nature conservation value, i.e. of value in the context of East Staffordshire Borough.

5.4.8 Species of Principal Importance

A brown hare was observed once, in the arable field at the narrowest point of the application site during a bat survey on 11th May 2009, at which time it was observed to make for cover in the adjacent woodland and scrub on the side of the Needwood Scarp that is known as 'The Rough'. Despite vigilance being maintained for signs of other SPIs, e.g. hedgehogs and harvest mice; no evidence of these was found at the Branston Locks site, although SER provided records of both being present at Tatenhill.

Of the many invertebrate species listed as SPIs, none were amongst the records in the consultation data provided by the SER, although it was apparent that an expert in Hymenoptera (the animal Order that includes sawflies, wasps, bees and ants) had surveyed habitats at Battlestead Hill and the Rough (at the time an SBI) in 1998/99 and recorded 28 species from this time that are now UK BAP species. These were all species with a preference for open flowery grassland, of the type present on the Needwood Scarp before the National Forest planting of the Bass Millennium Wood, but which has since been reduced in extent so that it remains only in the residual grassland just outwith the site at TN8 and around the motocross track (within TN10). None of these species would be present in the very different agricultural habitats within the application site, but populations may persist in residual areas of open grassland habitat on the scarp.

² RSPB (2009). *Birds of Conservation Concern* 3.

Appendix A. Hedgerow Descriptions

Hedge number (see Figure 14.2)	Description	Grade
H1	Roadside hedge along Branston Road between Branston Bridge and Lawns Farm Cottage. Designated as a BAS. More or less continuous hawthorn-dominated but with some holly, blackthorn, elder, dog-rose, bramble. No gaps except for occasional field gate. Vegetation on road side mainly ivy in the dense base, with some 'woodland' species including lords-and-ladies evident. More grassy on the field side. Six trees, including mature oaks and willows (T82-T87).	Very good
H2	Low, thin hawthorn hedge with some elder with poor continuity and one tree (T80 – grade B oak) at western end.	Poor
H3	Formerly laid but overgrown hedge of flailed hawthorn with some elder and bramble, and tall elm scrub at the southern end.	Poor
H4	Low, wide hawthorn hedge over dry ditch with some elder and bramble with tall ruderals in base. Good continuity and connectivity. No trees.	Moderate
H5	Low, narrow hawthorn hedge with some elder and bramble with tall ruderals in base. Good continuity and connectivity. No trees.	Poor
H6	Low, narrow hawthorn hedge next to dry ditch along Anglesey Street. Also contains some holly, sycamore, elder and bramble with tall ruderals in base. Poor continuity and no connectivity with other hedges. No trees.	Poor
H7	Tall (>2m) almost continuous hawthorn dominated hedge with some blackthorn and privet. Dense at the base with tall ruderals.	Good
H8	Excellent tall hawthorn-dominated hedge with blackthorn and other woody species. Dense base with ruderals and bramble. Two trees, both grade B (an ash T110 and oak T111). Poor connectivity with hedge network but marks boundary of application site with mixed habitats at TN8.	Good
H9	Overmanaged gappy hedgerow of both flailed and overgrown hawthorns with some elder and bramble on dry ditch. One overmature oak tree (grade C, T103). Not connected to any other hedges, although west end is at entrance to Bass Millennium Wood (TN10).	Poor
H10	Formerly laid, low flailed hawthorn hedge with some elder. Sparse base with tall ruderals. Only connected to network at northern end.	Poor
H11	Formerly laid, low flailed hawthorn hedge on ditch with some elder. Sparse base with tall ruderals. Well connected.	Poor

Hedge number (see Figure 14.2)	Description	Grade
H12	Wide tall double hawthorn hedge over dry drain. Species poor but size makes it better than some, and is well connected into wider network. No trees.	Moderate
H13	Wide low double hawthorn hedge over dry drain. Species poor but width makes it better than some, and is well connected into wider network. One tree (T25 – an ash recommended for removal).	Moderate
H14	Long hawthorn-dominated hedgerow with two trees (a grade A oak T23 and grade B hawthorn T24) that runs beside dry ditch for northern half of its length. Overmanaged and with substantial gaps throughout, with open base dominated by rank grasses and ruderals.	Poor
H15	Single hawthorn hedge with some elder and hazel. Low and open at base, although relatively continuous with few gaps. No trees.	Poor
H16	Single hawthorn-dominated hedge with some mature trees (T2, T3 and T4). Low and short in length, although relatively continuous with few gaps. Some additional species but no 'woodland' type of ground flora.	Moderate
H17	Single hawthorn hedge with dry ditch, thin and low and open at base, although relatively continuous with few gaps. Two trees (T19 and T20) at northernmost end, near to scrubby depression TN7)	Poor
H18	Wide low double hawthorn hedge with some oak, elder and bramble over dry ditch. Species poor but no gaps and not connected at west end, but density makes it better than some. No trees.	Moderate
H19	Low flailed hawthorn hedge with gaps next to dry ditch with rank grassland and metalled track. Contains one tree (an ash T5 with substantial damage).	Poor
H20	A38 boundary hedge north of canal. 2m tall, hawthorn, laid in past. Continuous with only odd break where car has come through (no crash barrier).	Good
H21	Broken, very low flailed hawthorn hedge.	Poor
H22	Line of tall leggy hawthorn bushes in unmanaged hedge.	Poor
H23	Gappy line of tall leggy hawthorn bushes in unmanaged hedge.	Poor
H24	Long hedge with only occasional gaps at the north end and more at the southern end along east side of drain D2 north of the mobile phone mast. Hawthorn-dominated but with some dog-rose, elder, holly and bramble. Well connected to other hedges and next to TN7 with several trees, mainly oaks.	Very good
H25	Low almost continuous hawthorn-dominated hedge with some elder, oak and dog-rose. Base open but with dense tall ruderals. Well connected. No trees.	Poor
H26	Low almost continuous hawthorn-dominated hedge with some elder and blackthorn. Base open with tall ruderals.	Poor

Hedge number (see Figure 14.2)	Description	Grade
	Connected at both ends. Two trees, T75 (oak, grade B) and T76 (recommended for removal)..	
H27	Long low hedge with only occasional gaps along east side of drain D2 south of the mobile phone mast. Hawthorn-dominated but with some dog-rose, elder, field maple, oak, ash, holly and bramble. Well connected to other hedges and with many trees, especially towards its southern end, although many of these are willows and recommended for removal in the tree survey.	Good
H28	Thick continuous hawthorn hedge that marks boundary with adjacent residential property. Well connected, gappy base with tall ruderals and no trees.	Moderate
H29	Long almost continuous hawthorn-dominated hedge with blackthorn, elder, dog-rose and bramble along east side of canal tow path. Cut higher than some and well connected with poor hedgerow network to the east and with some trees.	Moderate
H30	Low but almost continuous hawthorn-dominated hedge with some elder and bramble next to deep ditch. Base open with tall ruderals. Connected at west end only. Several trees in middle stretch.	Poor
H31	Remnants of hawthorn hedge now isolated sections strung across field.	Very poor
H32	A38 boundary hedge south of canal. 2m tall, hawthorn, laid in past. Continuous with only odd break where car has come through (no crash barrier).	Moderate
H33	Wide low double hawthorn hedge over dry drain. Species poor but width makes it better than some, and is well connected into wider network. One tree (T26 – a grade A oak).	Moderate