

Preliminary Ecological Appraisal

(Incorporating an Extended Phase 1 Survey, Preliminary Roost Assessment and Habitat Suitability Index)

Project: Broadway Farm, Ford Heath, Shrewsbury, SY5 9NW

Prepared by D. Williams MArborA, MRSB, MSc, BSc, RFS Cert Arb

On Behalf of: Mr Davies

Foreword

Salopian Consultancy Ltd is an Arboricultural/Ecological consultancy which provides inputs to guide developers and architects during the planning process.

Core services include BS5837:2012 tree surveys, condition assessments, mortgage applications and woodland management. In addition, Salopian Consultancy Ltd have in house ecological expertise enabling them to perform a range of Phase 1 and Phase 2 ecological surveys.

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Executive summary

Brief of the study and context of development

This report has been prepared to identify the key ecological constraints to inform a planning application for two poultry units at Broadway Farm. The focus of the study has been to highlight those ecological constraints to ensure that they have been given due consideration during the design and planning process, whilst identifying opportunity for biodiversity enhancements.

Survey methods

A desk study of historic ecological records and a Phase 1 habitat survey were performed to assess the sites potential to support protected species. This study was extended to include a Habitat Suitability Index (HSI) of ponds within 500m of the site and a Preliminary Roost Assessment (PRA) of those trees on site by a licensed Ecologist.

Findings and recommendations

The proposal involves the construction of two new poultry units set within a field of shortly grazed pasture.

Three waterbodies (Pond 2,4 &5) were identified between 100m-500m of the site, which scored 'below average' in their suitability for Great crested newts derived from HSI scores. Pond 1 which falls 75m to the west, and Pond 3 located 220m south east scored 'average' in their suitability. The site itself supports limited opportunities for species of amphibians given the lack of refuge which is restricted to the boundary hedgerows which will remain intact.

The likelihood of encountering Great crested newts on site is considered very low given the distance from the ponds and poor suitability of terrestrial habitat and that this species was deemed absence during a series of Phase 2 great crested newt surveys performed in 2010. However, given the age of this historic study data and that it is possible for local population to colonise ponds through metapopulation dynamics, its is recognised that there is a small risk newts may be present within these pools. The risk of encountering great crested newt (if present) can be further reduced to an acceptable level by implementing the method statement and timing of works detailed in **Appendix 3**. This position has been agreed for similar applications within the local area.

Further surveys and ecological enhancements

No evidence of protected species or notable habitats were identified on site, further Phase 2 surveys to inform licensing or mitigation measures are not deemed necessary. The proposal has the opportunity to provide enhancements for protected species through the installation of both bird and bat boxes upon those trees adjacent to the boundaries and a net gain in terrestrial habitat through new hedgerow planting to denote the boundaries of the car parking area.

Scope of the study

- 1.6 The primary focus of the study is to;
- Meet the validation requirements of Shropshire Council by presenting the findings of an Extended Phase 1 Survey in a clear and concise manner.
 - Include the content set by the Chartered Institute of Ecology and Environmental Management (CIEEM) guidelines¹, for ecological appraisals.
 - Classify and map those habitat types within and immediately adjacent to the application area.
 - Identify both habitats and species constraints pertinent to the development proposal.
 - Detail European Protected Species Mitigation licensing (EPSML) requirements, Reasonable Avoidance Measures (RAMS) and mitigation measures where required.
 - Identify opportunities for the proposal to provide enhancements to the ecological resource on site.

Limitations

- 1.7 The survey was not considered to be limited by seasonal or climatic factors and was undertaken within a suitable time of the year given the habitats and species likely to be present.
- 1.8 The Extended Phase 1 survey provides a snap shot of the potential of habitats to support protected species. It should be noted that the absence of field signs does not necessarily confirm the absence of a species due to the dynamic and seasonal nature of many protected species. The suitability of a site may also increase with succession over time or with changes in land management practices. Further advice should be sought from Salopian Consultancy Ltd In the event that a protected species or field signs of such species are discovered during works.

¹ Chartered Institute of Ecology and Environmental Management., (2015). *Guidelines for Ecological Report Writing* Appendix A.

Section 2 Planning policy & statutory controls

Statutory legislation

- 2.1 A range of EU and UK legislation offers statutory protection to species and habitats which Local Planning Authorities have a duty to consider whilst determining planning applications. The following EU directives are relevant to protected species, habitats, and designated sites;
- The EC Habitats Directive (92/43/EEC)
 - The Birds Directive (79/409/EEC) and
 - EU Water Framework Directive (2000/60/EC)
- 2.2 Much of the EU legislation is transposed into domestic legislation with respect to protected species and habitats, including;
- The Wildlife and Countryside Act (1981) (as amended)
 - The Protection of Badgers Act (1992)
 - The Natural Environment and Rural Communities Act (2006)
 - The Countryside and Rights of Way Act (2000)
- 2.3 The Association of Local Government Ecologist (ALGE) provides a summary of the criteria and thresholds² to determine when an Ecological survey should be performed. Many Local Planning Authorities have adopted this guidance to ensure that the correct information is presented when considering the impacts upon biodiversity during the planning process.

National and local planning policy

- 2.4 Natural habitats and the species they support provide a range of ecosystem services that have considerable financial, cultural, and recreational benefits. The National Planning Policy Framework (2021) (NPPF)³ highlights the importance of natural habitats, the species they supports and the requirements of development to maintain, promote and enhance the natural environment. The requirements of new development to provide a net gain in biodiversity and establishing ecological networks are clearly set out in para 174, 179 and 180.
- 2.5 Para 175 make specific reference to ‘irreplaceable habitats’ which states that “*development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists;*
- 2.6 Natural England⁴ and the Forestry Commission standing advice is that minimum buffer of 15m should be kept form ancient woodland. There may be instances where this buffer is increased to negate impact associated with air pollution and other non-direct impacts. Individual

² Association of Local Government Ecologist., (2007). *Template for Biodiversity and Geological Conservation*. Table 1.

³ Department for Communities and Local Government., (2021). *National Planning Policy Framework*. Para175 d.

⁴ <https://www.gov.uk/guidance/ancient-woodland-and-veteran-trees-protection-surveys-licences>

Ancient or veteran trees require or a buffer area of 15 times the tree diameter or 5m greater than the edge of the tree canopy, whichever is greater to avoid significant impacts.

- 2.7 Section 40 of the Natural Environment and Rural Communities Act 2006, places a duty on all public authorities in England and Wales to have regard, in the exercise of their functions, to the purpose of conserving biodiversity. A key purpose of this duty is to embed consideration of biodiversity as an integral part of policy and decision making throughout the public sector.
- 2.8 Shropshire Council's Core Strategy CS6 and CS17 encourages development 'which conserves, enhances, connects, restores, or recreates natural assets'. These policies support proposals which contribute positively to the 'special character or local distinctiveness' where development affects biodiversity at a landscape scale.

Section 3: Survey findings

Desk study

- 3.1 The desk study summarised in **Appendix 1** forms an important part of the ecological assessment. It provides contextual information, such as the site's proximity to designated sites and the location of historical protected species records. This information is used when assessing the site's suitability for protected species.
- 3.2 A review of OS maps and online mapping resources was undertaken to identify designations of conservation concern within 1km of the site and waterbodies within 500m.

Figure 2: Waterbodies within 500m radius of the site (site location depicted in red outline).

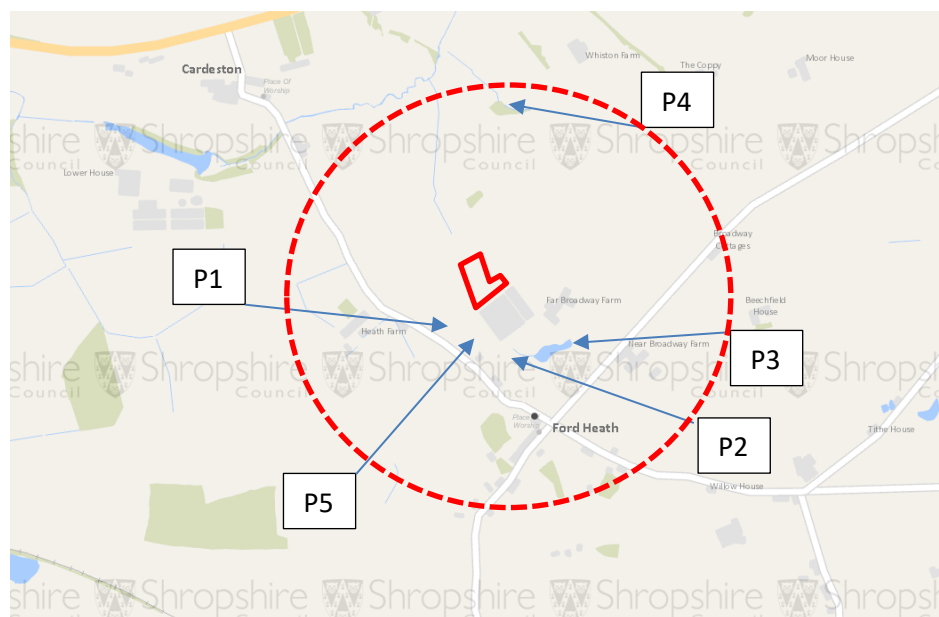


Figure 3: SEN components surrounding the site location (shown as a blue outline), wildlife corridors are shown as green polygons.



Environmental Networks

- 3.3 SEN is defined into a hierarchy of components discussed in Shropshire Councils Guidance Note 11: Environmental Networks⁵. These components form areas of high biodiversity value (core areas depicted in red) and areas that act as connective ‘corridors and stepping stones’ between them (illustrated as green) which includes non-statutory designations. The term connectivity refers to the movement of species between areas thereby aiding geneflow, recolonisation of habitats and bolstering of populations during fluctuations, which is a key aspect of meta population dynamics.

Statutory/ non-Statutory Designation within 1km

- 3.4 No statutory designations of conservation concern were identified during the desk study within 1km of the site, nor were any non statutory designations identified within or adjacent to the site. The site does not fall within a core area, or corridor component of the SEN. Within the wider landscape an area of ancient, replanted woodland is located 790m south west of the site.

Species records

- 3.5 During the desk study, a total of 54 species records were obtained within a 1km search radius of the site which are relatively evenly split between Arthropod records (butterfly and damselfly) and avian records recorded in the Cardeston area, indicating a strong recording effort for and interest in these taxonomic groups.
- 3.6 No records of amphibians or reptiles were returned within 1km of the site. The nearest account of Great crested newts is located 1.4km east of the site within the ground of Cartref Carvan and camping site.

Habitat Suitability Index

- 3.7 A desk-based assessment identified four waterbodies located within 500m from the site illustrated in **Figure 2**. An additional water body referred to as Pond 5 was identified during the Phase 1 survey located 100m of the site.
- 3.8 An assessment of each water body was undertaken using a HSI to determine their potential to support breeding populations of amphibians detailed in **Table 2** overleaf.

⁵ <https://www.shropshire.gov.uk/media/1872/guidance-note-11-environmental-networks-aug13.pdf>

Table 2 HSI scoring of suitable ponds within 500m of the application area

Indices	Pond 1	Pond 2	Pond 3	Pond 4	Pond 5
Location	1	1	1	1	1
Pond area	0.2	0.4	0.8	0.4	0.4
Pond drying	0.9	1	0.9	0.5	0.1
Water quality	1	0.33	0.33	0.33	0.33
Shade	1	0.6	1	0.2	1
Fowl	0.67	0.33	0.33	0.67	0.67
Fish	1	1	1	1	1
Ponds	1	1	1	1	
Terrestrial habitat	0.33	0.33	0.33	0.67	0.33
Macrophytes	0.5	0.3	0.3	0.3	1
HSI score	0.68	0.55	0.62	0.53	0.52
Suitability	Average suitability	Below average suitability	Average suitability	Below average suitability	Below average suitability

Preliminary roost assessment – structures/trees

- 3.9 A ground-based assessment of those trees located upon the eastern boundary of the site did not identify any features capable of supporting roosting bats. The existing poultry sheds located to the south of the site comprises of a steel framed structures with corrugated panel side and roofing sheets. These building are in good condition with no obvious cracks or crevices and are not deemed suitable for roosting bats.

Phase 1 survey

- 3.10 The application area encompasses a sub section of improved pasture grazed by sheep. A mature established field hedgerow forms the western boundary which contains a mix of Holly (*Ilex aquifolium*), Hawthorn (*Crataegus monogyna*), Elder (*Sambucus nigra*), Blackthorn (*Prunus spinosa*) and Dog rose (*Rosa canina*). The northern section of this hedgerow has become sparse and defunct in sections.
- 3.11 Within the field margins common flowering species tolerant of agricultural practices were noted including Cleavers (*Galium aparine*), Nettle (*Urtica dioica*), Spear thistle (*Cirsium vulgare*), and Broad leaved dock (*Rumex obtusifolius*).
- 3.12 Two early mature Pedunculate Oak (*Quercus robur*) trees were noted situated within the eastern field boundary hedgerow.

Figure 5: Area proposed for the construction of two poultry sheds



Figure 6: Existing complex of poultry shed to the south



Section 4: Evaluation of ecological constraints and opportunities

Designations

- 4.1 The site does not fall within or adjacent to any statutory or non-statutory sites of conservation concern, nor does it fall within components of the SEN, therefore no impacts are envisaged upon the functionality of the SEN/designated sites or the species they support.

Habitats

- 4.2 Those habitats on site are restricted to intensively sheep grazed pasture, bound by mixed species hedgerow which contains occasional trees. The primary habitat is considered to be of limited ecological merit given the low species diversity and intensive management of the grassland such that its loss and modification is not considered to be a constraint to development. Consideration should be given to the impacts upon trees/tree roots particularly those associated with the eastern boundary which could be achieved by performing a **BS5837:2012** compliant tree survey and Arboricultural Impacts Assessment.

Protected species

- 4.3 The boundary hedgerow and trees set within provide nesting opportunities for a range of common passerine. All wild birds, their nests and eggs are protected under Section 1 of the Wildlife and Countryside Act 1981 (as amended), this makes it an offence to:
- Intentionally kill, injure or take any wild bird;
 - Take, damage or destroy the nest of any wild bird while it is in use or being built;
 - Take, damage or destroy the egg of any wild bird; or
 - To have in one's possession, or control, any wild bird (dead or alive) or egg or any part of a wild bird or egg.
- 4.4 It is understood that these features will remain as part of the proposal. If any tree/hedgerow removal or pruning is required as part of the ongoing maintenance and management of the site such works must be timed to fall between September and February outside of the bird nesting season to avoid contravening the legislation above, or immediately after a pre-commencement check by suitably qualified personnel.
- 4.5 The PRA confirmed that the site does not support suitable buildings or trees capable of supporting roosting bats.
- 4.6 No evidence or fields signs of badger (such as setts or scraps) were identified within 30m of the site boundaries. Given the mobile and dynamic nature of badgers, if any excavation is discovered prior or during works an update survey should be completed by a competent ecologist should to confirm the cause of the excavation before works continue.

- 4.7 Five waterbodies were identified within 500m of the sites boundaries. These waterbodies scored 'below average' in their suitability for Great crested newts with the exception of Pond 1 and Pond 3 which provide an 'average' suitability. The HSI scoring for Ponds 2-4 are largely attributable to the water quality, low macrophyte cover which is essential as an egg laying substrate for breeding newts and limited suitable terrestrial habitat beyond the pond margins.
- 4.8 Conversely Pond 5 does provide a variety of aquatic vegetation but was noted to be ephemeral/season in it's nature, whilst Pond 1 scored higher than the other ponds due to not having the same limitations of shade, permeance and lesser impacts from the presence of water fowl.
- 4.9 No historic records of Great crested newts were returned within 1km of the search area. It is understood that Phase 2 presence absence surveys for great crested newts were undertaken in 2010 in relation to the planning application 10/02963/FUL for four poultry sheds to the south. The surveys showed that at the time of the study these ponds did not support any evidence or signs of great crested newts
- 4.10 Great crested newt are listed as an EPS on Schedule 2 of the Conservation Regulations (Annex IV(a) to the Habitats Directive), affording it protection under the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019, It is an offence to;
- Deliberately capture, injure or kill a wild animal of an EPS;
 - Deliberately disturb wild animals of an EPS wherever they are occurring, in particular any disturbance which is likely to impair their ability to survive, to breed or reproduce, or in the case of hibernating or migratory species, to hibernate or migrate; or to affect significantly the local distribution or abundance of the species to which they belong;
 - Deliberately take or destroy the eggs of a wild animal of an EPS; or
 - Damage or destroy a breeding site or resting place of a wild animal of an EPS.
- 4.11 Mindful of the below average scores of the ponds (with the exception of Pond 1 and Pond 3) and that the previous Phase 2 surveys did not show any evidence of this species it is deemed highly unlikely that Great crested newt would be encountered during the proposed works. This position is considered even more relevant when taking into account the poor suitability of the terrestrial habitat within the construction area (intensively grazed pasture), in combination with the distance from known historic records of this species are >1.4km.
- 4.12 Acknowledging that the previous 2010 study are now considered out of date, and that it is possible for great crested newts to travel considerable distances over subsequent years/decades where connectivity allows recolonisation as part of metapopulation dynamics; it is advised that the proposed works are undertaken in line with the Method Statement detailed in [Appendix 3](#). As long as these provisions are adhered to, the need for further Phase 2 surveys to inform an EPS license is not anticipated on the basis that:
- The risk of inadvertently injuring or killing Great crested newt(s) during works is further minimised through precautionary working methods.

- No net loss of suitable Great crested newt habitat (aquatic or terrestrial) is lost as a result of the proposed works.

- 4.13 The same position has been agreed during the neighbouring application 17/00407/FUL which fell within 500m of a pond with confirmed presence of Great crested newts.
- 4.14 No field signs or habitats considered suitable to support other protected species such as dormice (*Muscardinus avellanarius*) or water vole (*Arvicola amphibious*) were identified on the site or highlighted during the desk study.

Artificial Lighting

- 4.15 All new Artificial lighting will need take into account those measures recommended in the 'Bat Conservation Trusts Guidance Note 08/18 Bats and artificial lighting in the UK to ensure dark corridors remain for nocturnal commuting/foraging wildlife.
- 4.16 Lighting should be directed to where it is needed to avoid unnecessary light spillage. All proposed new lighting should be directed away from any vegetated boundary features to retain dark corridors for commuting bats across the site.
- 4.17 Artificial lighting should lack UV element the use of LEDs is advised due to their sharp cut-off, lower intensity, good colour rendition and dimming capability. Metal halide, fluorescent sources should not be used.
- 4.18 Lighting should adopt a warm white spectrum, ideally below 2700 kelvin with a peak wavelength higher than 550nm, thus avoiding emitting those wavelengths of light most disturbing to bats⁶ (Stone 2012). Security lighting should be activated by movement sensors to reduce the amount of time the lights are activated, set on a short timer (maximum of 1 minute), and orientated towards the ground. The use of accessories such as hoods/cowls or shields is advised to help direct light to the required area only.

Biodiversity enhancements

- 4.19 It is recommended that enhancements to the site for bats are provided through the erection of a 2F Schwegler bat box upon one of the mature oak trees upon the eastern boundary. In addition similar provision for nesting birds can be achieved through the erection of Schwegler 1B Nest Boxes with a 32mm entrance hole upon those remaining trees on site. This bird box is designed to attract Great tit (*Parus major*), Blue tit (*Cyanistes caeruleus*), Marsh tit (*Poecile palustris*), Coal tit (*Periparus ater*), Crested Tit (*Lophophanes cristatus*), Redstart (*Phoenicurus phoenicurus*), Nuthatch (*Sitta europaea*), Collared flycatcher (*Ficedula albicollis*) Pied Flycatcher (*Ficedula hypoleuca*), Wryneck (*Jynx torquilla*), Tree Sparrow (*Passer montanus*) and House Sparrow (*Passer domesticus*).

⁶ Stone, E.L., Jones, G., Harris, S. (2012). Conserving energy at a cost to biodiversity? Impacts of LED lighting on bats. *Glob. Change Biol.* 18, 2458–2465

- 4.20 In addition to roosting provisions for bat and birds there is the opportunity to incorporate new hedgerow and tree planting to increase the level of biodiversity across the site. New planting such should include a minimum 60% of native species with a focus of those known to be beneficial to pollinators as described in RHS plant for pollinators guidance.
- 4.21 All Tree and hedgerow planting should meet the requirements of **BS8545: 2014 Trees: from nursery to independence in the landscape. Recommendations** with specific reference to the procurement of new trees, species selection, aftercare and maintenance. This could be achieved via planning condition through a formal Tree Planting Scheme.

Section 5 Conclusion

- 5.1 The application area comprises exclusively of improved grassland which is intensively grazed by sheep bound by and established mixed species hedgerow.
- 5.2 Four ponds fall between 100m-500m from the site which score below average in their suitability for Great crested newts. An additional pond located 75m to the west scores average in it's suitability for this species. The site itself supports limited opportunities for species of amphibians given the lack of refuge which is restricted to the boundary hedgerows which will remain intact.
- 5.3 The likelihood of encountering Great crested newts on site is considered very low given the distance from the ponds and poor suitability of terrestrial habitat. This position is supported by the previous 2010 Phase 2 studies which concluded the absence of Great crested newt within these pools. However, given the age of this historic study which is now considered out of data, and that it is possible for local populations to colonise ponds through metapopulation dynamics, there is a small risk newt could be present within these pools. The risk of encountering great crested newt (if present) can be further reduced to an acceptable level by implementing the Method Statement and timing of works detailed in **Appendix 3**. This position has been agreed for similar applications within the local area.
- 5.4 No evidence of other protected species were identified during the course of the study, therefore the proposal is not considered to be limited by any other ecological constraints.
- 5.5 The proposal has the potential to provide significant enhancements to the site as an ecological asset through the incorporation of both bird and bat boxes into the built form and new hedgerow planting.
- 5.6 The site should be maintained in its current context to ensure its suitability for protected species does not inadvertently increase prior to development.
- 5.7 Subject to the implementation of those recommendations set out within **Section 4** and **Appendix 3** of this report, no significant impacts upon protected species are considered likely to arise. In the event of a protected species being encountered during works; all works will halt, and further advice shall be sought from Salopian Consultancy Ltd.

- 5.8 The findings of this report are valid for up to two years from its date. In the event the development proposals/application area alters significantly a re-assessment of the likely impacts by a suitably experienced Ecologist will be required.

Appendix 1 Summary of Extended Phase 1 Habitat Survey

Desk Study

The desk study is an integral role in the ecological assessment. This desk-based study provides contextual information, such as the sites' proximity to designated sites and known records of protected species. This information is used to supplement the findings of the Extended Phase 1 Survey, and used to inform the recommendations and conclusions in **Section 2 & 3**.

Shropshire Ecological Data Network via NBN network

- Protected/UK BAP species records (1km)

MAGIC website⁷

- International statutory designations (1km)
- National statutory designations (1km)
- Waterbodies within 250m radius
- Protected species records

Shropshire Environmental Network (SEN)⁸

- Review Core areas and wildlife corridors in immediate area

Extended Phase 1 Survey

The aim of the survey is to record and map the main habitat types and dominant plant species present in accordance with those classifications detailed in Handbook for Phase 1 Habitat Survey, JNCC, 2010⁹. The survey was extended to include an assessment of the suitability of those habitats for protected species undertaken by an experienced ecologist holding appropriate protected species licences, and membership with Chartered Institute of Ecology and Environmental Management and the Royal Society of Biology.

The survey does not aim to provide a complete floral and faunal inventory but seeks to identify field signs and/or habitats with the potential to support protected species. The need for further detailed Phase 2 Survey(s) were determined on this basis.

⁷ Multi-Agency Geographic Information for the Countryside website (www.magic.gov.uk/)

⁸ Shropshire Councils Guidance Note 11: Environmental Networks

⁹ Joint Nature Conservation Committee (JNCC) (2010) Handbook for Phase I Habitat Survey – a Technique for Environmental Audit. JNCC Peterborough.

Bat Roosting Assessment: Trees

An assessment of all suitable trees located on site was undertaken by a Natural England licensed bat worker to determine their potential to support roosting bats. This assessment was undertaken from ground level using binoculars and/or endoscopes.

All trees examined were categorised based on the number and types of features known to be suitable to support roosting bats, summarised in **6.2.4 of “Bat Surveys for Professional Ecologist: Good Practice Guidelines”¹⁰**. These features include but are not limited to;

- Cracks and splits in limbs,
- Cavities,
- Woodpecker holes,
- Loose bark thick-stemmed ivy.

Preliminary Bat Roost Assessment: Buildings

A daytime external assessment of all structures on site was undertaken to determine their potential to support roosting bats, including but not limited to;

- Cracks and crevices in brick work, timber joist/purlins.
- Slipped or missing roof and ridge tiles.
- Gaps between soffits and barge boards.

An internal assessment of all accessible loft voids was undertaken by a Natural England licensed bat worker for evidence of roosting bats such as droppings, feeding remains and urine staining within accessible areas.

Potential suitability of the structures are assessed by assigning a rating of low to high based on the number and type of external features considered suitable for roosting bats. The need for Phase 2 Emergence Surveys is decided on this basis.

Reptiles

Terrestrial searches were undertaken during the Extended Phase 1 Survey for reptiles seeking refuge beneath debris, including log piles and brick/rubble where present.

Nesting Birds

An assessment from the ground of all trees and boundary vegetation located on or immediately adjacent to the site boundary was undertaken by an experienced ecologist, to determine the suitability of habitats for nesting birds.

¹⁰ Collins, J. (ed) (2016) *Bat Surveys for Professional Ecologist: Good Practice Guidelines (3rd edn)* The Bat Conservation Trust, London

Badgers

An experienced ecologist undertook a thorough site walkover to identify any evidence/field signs of badgers including setts, scrapings produced during foraging behaviour, latrines, paths and prints.

Where present, an assessment of excavations was made taking into account the shape of the entrance, quantity of spoil and presence of badger hair/claw marks. A classification of sett type are made (Main Sett, Annex, Subsidiary, Outlier) based on the level of activity, number of entrances and proximity to other Setts in accordance with Harris et al (1989)¹¹.

Great crested newts - Habitat Suitability Index (HSI) Assessment

A desk-based study was undertaken using OS maps and online mapping resources to identify waterbodies within 5000m of the site's boundaries. These ponds (where accessible) were assessed for their potential to support great crested newts using the Habitat Suitability Index developed by Oldham *et al.* (2000)¹². The HSI scoring was performed in accordance with ARG UK (2010)¹³.

The assessment uses a scoring system based on ten factors such as water quality, presence of fish/waterfowl and quality of surrounding terrestrial habitat. Water bodies with higher scores are considered more likely to support great crested newts compared to those with low scores.

Table A1: Pond suitability for great crested newts determined using HSI scoring system.

HSI Score	Pond suitability to support great crested newts
<0.5	Poor suitability
0.5 – 0.59	Below average suitability
0.6 – 0.69	Average suitability
0.7 – 0.79	Good suitability
> 0.8	Excellent suitability

In addition to the HSI assessment a terrestrial hand search was undertaken to identify any amphibians seeking refuge beneath debris. This was completed by a great crested newt licence holder during the Extended Phase 1 Survey.

¹¹ Harris, S., Cresswell, P., and Jefferies, D. (1989). Surveying Badgers. Occasional publication of the Mammals Society.

¹² Oldham R.S., Keeble J., Swan M.J.S. & Jeffcote M. (2000). *Evaluating the suitability of habitat for the Great Crested Newt (Triturus cristatus)*. Herpetological Journal 10 (4), 143-155.

¹³ ARG UK (2010) Advice Note 5 Great Crested Newt Habitat Suitability Index.

Appendix 2 Target notes

TN1 Hedgerow trees

Appendix 3 : Precautionary method statement (Great crested newts)

Summary of the site's ecological significance

The site itself is considered to be of low ecological merit for Great crested newts comprising of improved grassland, grazed by sheep, with limited terrestrial habitat restricted by the boundary hedgerow.

Three waterbodies (Pond 2,4 &5) were identified between 100m-500m of the site, which scored 'below average' in their suitability for Great crested newts derived from HSI scores. Pond 1 which falls 75m to the west, and Pond 3 located 220m south east scored 'average' in their suitability

Mindful that the sites falls within the first 100m of the core area of terrestrial habitat from Pond 1 (where the majority of a breed population would be anticipated to be found¹⁴), the likelihood of encountering this species during construction is considered very low considering that the previous 2010 Phase 2 Great crested newt surveys in connection with planning consent 10/02963/FUL did not show the presence of this species. In addition to this not historic record shave been revealed within 1km of the site.

Impacts of the works

The proposed works will require excavation to install foundations for two steel framed poultry units equating to 1.1 hectares in it's footprint when also accounting for the hard standing surrounding the units

Licensing requirements

The likelihood of encountering, killing, injuring, or disturbing this species during the construction phase is considered unlikely. This is due to poor suitability of the habitats present, findings of previous Phase 2 surveys and distance from historic records. Further survey work to support a European Protected Species licence (EPS) issued from Natural England is not considered necessary, subject to this level of risk being further minimised.

To further negate the risk to Great crested newts, RAMs have been proposed overleaf, which are to be adopted during the construction phase. These sensitive working methodologies will ensure a precautionary approach is adhered to during the implementation of construction activities.

¹⁴Müllner, A. (2001) *Spatial patterns of migrating Great Crested Newts and Smooth Newts: The importance of the terrestrial habitat surrounding the breeding pond*. Rana

Reasonable Avoidance Measures

The following sensitive working methodologies (referred to as Reasonable Avoidance Measures (RAMs)) are recommended to ensure impacts upon Great crested newts are avoided during the period of the proposed works:

Pre-construction

- Prior to the commencement of works, the ongoing management of pasture to the north and grassland within the site will continue to ensure connectivity of the site and suitability of terrestrial habitat does not inadvertently increase.
- The developer should appoint an experienced Ecological Clerk of Works (ECoW) to undertake a walkover of the work area to determine any changes in status of the habitats on site prior to the commencement of construction activities.
- A hand search for protected species of any debris or vegetation proposed for removal should be undertaken by the ECoW prior to removal of surface vegetation.
- Protective 'heras' type fencing should be installed prior to the commencement of the works. The purpose of the fencing will be to define the working area whilst ensuring protection to all off site habitats and boundary features.
- The installation and maintenance of such fencing is the responsibility of the developer, which should be checked by the appointed ECoW for its suitability and location.
- The protective fencing should demarcate a minimum of a 2m buffer between the development footprint and suitable terrestrial habitat.
- A tool box talk should be given to all personnel on site to make them aware of the possibility of encountering a Great crested newt (albeit very low), the statutory protection afforded to the species and the course of action to take in this unlikely event (i.e. leave it in situ, stop works and contact the ECoW).

During construction works

- The duration of works will be limited to daylight hours when newts are less active.
- All excavations should be filled in on the same day as excavated or covered daily. The ECoW will check excavations immediately prior to backfilling.
- All materials should be palletised and kept on areas of hardstanding or bare earth within a secure site compound. All hazardous materials should be stored within an area determined by the ECoW.
- Following completion of the works the sensitive landscaping of all disturbed areas should be undertaken, including the suitable new planting of, hedgerows and trees incorporating native species of local provenance, thereby ensuring no net loss of suitable terrestrial habitat.

In the unlikely event a protected species is encountered during the proposed works; all works will temporarily cease, and further advice sought from a suitably qualified ecologist.

Subject to the implementation of the RAM`s described above no significant impacts upon protected species 'potentially' utilising the site are considered likely to arise

Salopian Consultancy

doug@salopianconsultancy.co.uk
M:07939947631 T:01743243225

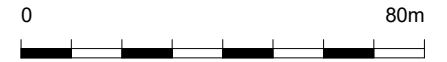
Plan 1:Phase 1 Habitat map

SCALE :
1 : 1500 @ A4








DATE :
05/03/2022



MAP FILENAME :
Broadway Farm



Key

-  Broad-leaved Tree
-  Hardstanding
-  Buildings
-  Survey Area
-  Species Poor Hedgerow
-  Improved Grassland
-  Target Note

