

PRELIMINARY ECOLOGICAL APPRAISAL

(inc. THIRD-PARTY DATA SEARCH)

LAND AT UPPER STANBRIDGE FARM,
SHERSTON, WILTSHIRE, SN16 0NJ

for

STANBRIDGE PARK (SHERSTON) LIMITED,
a subsidiary of the Acorn Property Group

Focus Ecology

Unit 2

Ball Mill Top Business Park

Worcester

WR2 6PD

Email: quotes@focus-ecology.com

Tel. 01905 780700

CONTROL SHEET

Stanbridge Park (Sherston) Limited, a subsidiary of the Acorn Property Group

Land at Upper Stanbridge Farm, Sherston, Wiltshire

Preliminary Ecological Appraisal

	Name	Position
Surveyor	Jessica Stuart-Smith	Ecologist
Author	Jessica Stuart-Smith	Ecologist
Checked by	Graham Davison	Director

Contract No.	Project Contact	Revision No.	Date of Issue
1295	Jessica Stuart-Smith	01	9 April 2018

Disclaimer

Please Note that all reasonable care and attention is made by Focus Ecology to produce reports and advice to a high, professional standard. However, no responsibility is accepted for any consequences howsoever caused, by the release of this report to third parties. Focus Ecology Limited operates a bespoke Quality Assurance System in order to maintain the high standards of report writing that our clients and peers expect. Completed reports are appraised using a detailed Quality Assurance Checklist focussing not just on grammar and formatting but also sense and scientific argument before they are issued. The reports of all staff are quality-assessed on a prescribed, regular basis to ensure that these high standards are maintained.

Template Version: V9 (January 2018).

TABLE OF CONTENTS

CONTROL SHEET	1
1. RECOMMENDATIONS	3
2. SUMMARY OF RESULTS	4
2.1 Overview	4
2.2 Designated Sites	4
2.3 Protected / Notable Habitats	4
2.4 Protected / Notable Species	5
3. DISCUSSION & CONCLUSIONS	7
3.1 Designated Sites	7
3.2 Protected / Notable Habitats	7
3.3 Protected / Notable Species	8
3.4 Opportunities	10
4. ANNEXES	12
4.1 Photographs	13
4.2 Plans	14
4.3 Survey & Third-party Data	17
4.4 Survey Objectives	19
4.5 Limitations	19
4.6 Methods	20
4.7 References & Bibliography.....	22
4.8 Legislation & Best Practice	25
5. QUALIFICATIONS & EXPERIENCE	32

1. RECOMMENDATIONS

1. No further specialist survey work is recommended at this juncture.

2. Once the development proposals are confirmed, a detailed Ecological Mitigation & Enhancement Strategy should be written and agreed with the Local Planning Authority. The strategy will ensure that any future development of this site retains existing features and habitats of ecological value (*e.g.* mature, species-rich hedgerows), minimises the impact upon protected species (*e.g.* nesting birds) and maximises the potential of retained habitats to enhance biodiversity and contribute towards local and national biodiversity targets. The following are considered to be key elements of this plan:
 - Retention and protection of mature trees and hedgerows within future development and landscaping proposals;
 - A strategy for sensitive clearance of habitats (*e.g.* rough grass headlands) to ensure adequate protection of legally protected fauna (*e.g.* amphibians and reptiles (if present));
 - A sensitive scheme of night-lighting to specifically minimise nocturnal illumination of retained wildlife habitats;
 - Specific management of retained habitat areas (*e.g.* hedgerows) to maximise biodiversity and wildlife value;
 - Use of native plant species including trees, shrubs, flowers and grasses within future landscaping proposals wherever possible, using species lists agreed in collaboration with the appointed ecologist;
 - The inclusion of new species-rich hedgerow planting and management along site and new property boundaries, utilising at least six native species, agreed in collaboration with the appointed ecologist;
 - Incorporation of wildlife-friendly features to facilitate species dispersal across the site post-development (*e.g.* hedgehog-friendly gravel boards);
 - The incorporation of a range of bird, bat, invertebrate and hedgehog boxes into future landscaping proposals.

2. SUMMARY OF RESULTS

2.1 Overview

Focus Ecology was commissioned by LRM Planning Limited, on behalf of their clients Stanbridge Park (Sherston) Limited, a subsidiary of the Acorn Property Group, to undertake a Preliminary Ecological Appraisal of the Lane at Upper Stanbridge Farm, Sherston in Wiltshire (centred on Ordnance Survey grid reference ST 850 862).

1. The site was surveyed by an ecological consultant from Focus Ecology on 27 March 2018. This report has been completed to inform the preparation of the Sherston Parish Neighbourhood Development Plan. No set proposals for the site have yet been confirmed. However, it is understood that the client is seeking to explore the potential residential development of the site.
2. The site is approximately 3.30ha in size and comprises a large field currently used for arable farming. At the time of the survey, the site was ploughed. The site is bounded by species-rich hedgerows to the west and south, a mixture of species-poor hedgerow and metal rail fencing to the north and neighbouring garden boundaries to the east.

2.2 Designated Sites

1. There are no statutory designated sites located within 1km of the site.
2. The third-party data search has identified six Local Wildlife Sites (LWS) within 1km of the site. The closest of these sites is Manor Farm Meadows, which is located 150m to the south.

2.3 Protected / Notable Habitats

1. **Hedgerows:** The hedgerows on site are considered to qualify as '*habitats of principal importance*' under Section 41 (S. 41) of the Natural Environment and Rural Communities (NERC) Act, 2006.

2.4 Protected / Notable Species

1. **Bats:** The habitats within the site and the wider landscape were considered to offer **high suitability** for foraging and commuting bats (with reference to Collins, 2016). A variety of species would be expected to occur within the surrounding area.
2. **Birds:** blackbird, blue tit, carrion crow, chaffinch, collared dove, dunnock, goldcrest, goldfinch, great tit, house sparrow, jackdaw, pheasant, robin, rook, starling, woodpigeon and wren were recorded on site. The hedgerows provide nesting and foraging opportunities for birds.
3. **Great crested newts:** The site is considered unlikely to support great crested newts. The development footprint offers some limited terrestrial habitat suitable for the species. However, the nearest suitable waterbody (shown on an Ordnance Survey map) is located approximately 150m to the north of the site.
4. **Reptiles:** The site is considered unlikely to support reptiles, due to the majority of the site comprising a ploughed agricultural field and the small area of potential suitable habitats on site (*e.g.* rough grass headlands).
5. **Badgers:** No setts or evidence of badger activity (latrines, snuffle holes, tracks *etc.*) was observed within the site boundaries.
6. **Hazel dormice:** The hedgerows on site may be considered to provide broadly suitable habitat for hazel dormice. However, it is anticipated that the hedgerows will remain intact within the post-developed site.
7. **Other mammals:** No evidence of any other mammal species was recorded within the site during the survey. The hedgerow bases offer some shelter and foraging opportunities for mammals such as the hedgehog, bank vole and wood mouse. The site and surrounding habitats provide broadly suitable habitat for brown hare.

8. **Invertebrates:** A full assessment of the invertebrate assemblage at the site is beyond the scope of this survey. However, no triggers were identified to indicate that the site supports an interesting or notable assemblage of terrestrial invertebrates.

9. A number of ornamental species were noted along the survey boundaries. However, no legally-notifiable plant species (*e.g.* Japanese knotweed) were recorded within the development footprint. The site is unsuitable or offers no habitat for other protected/notable species such as riparian mammals and white-clawed crayfish.

3. DISCUSSION & CONCLUSIONS

A draft neighbourhood plan for Sherston is currently being prepared. It is understood that the feasibility of residential development of the site is being explored. The potential development of the site would include up to 45 homes, a new GP surgery, an extension to the primary school car park and a retained area to the west of the primary school for future expansion. An indicative layout is to be prepared at the earliest opportunity. The following have been identified which may represent constraints or opportunities (e.g. for biodiversity enhancement and green infrastructure) within a future development at this site.

3.1 Designated Sites

Given the distance and isolation of the proposed development footprint from designated sites within the surrounding area, it is considered highly unlikely that any future development at this site will impact on the functionality or integrity of these sites or have any adverse effect on their conservation status, provided that standard construction procedures are followed during the works.

3.2 Protected / Notable Habitats

Hedgerows: The hedgerows on site are managed to approximately 1-2m in height. A number of species were recorded within the hedgerows including hawthorn, privet, elder, rose sp., hazel, wayfaring tree, holly, willow sp., field maple and elm, with bramble and ivy interspersed throughout. Tree species within the hedgerow included ash, cherry and Turkey oak. Hedgerow 1, Hedgerow 4 and Hedgerow 5 meet the criteria to be defined as '*species-rich*' as they each contain five or more woody species. All of the hedgerows on site meet the environmental criteria (BRIG (ed. Ant Maddock), 2008) to be listed as a '*habitat of principal importance for the purpose of conserving biodiversity in England*' as listed under S.41 of the NERC Act, 2006.

It is likely that some minor hedgerow removal will need to occur in order to facilitate the development (exact length to be confirmed). As compensation for the loss of any sections of hedgerow, new hedgerow planting will be incorporated into the development scheme.

3.3 Protected / Notable Species

Bats: No buildings are present on site. A number of mature and semi-mature trees are present within the boundary hedgerows and were considered to have **low potential** for roosting bats due to their size (Group 1). The trees will be retained as part of any development proposals. The habitats associated with the site are considered to offer **high potential** for foraging and commuting bats (with reference to Collins, 2016).

The hedgerows provide an invertebrate food source for bats as well as commuting habitat and connectivity to the wider landscape. The River Avon is located 100m to the south, whilst open countryside and small patches of broadleaved woodland are present within the surrounding landscape. As such, it would be expected that a wide variety of bat species would be present within the local area. Where hedgerows remain intact within future development proposals at the site, with an appropriate habitat buffer and a suitable scheme of night-lighting (all designed and agreed in collaboration with an appointed Ecologist), the likelihood of the proposed development activities giving rise to an offence under wildlife legislation or resulting in any measurable impact on the '*favourable conservation status*' of bats at this site is considered **negligible**.

Birds: The starling and house sparrow are both Red-Listed birds of conservation concern owing to a significant decline in population of over 50% since recording began in 1969 (Eaton *et alii*, 2015), whilst the dunnock is Amber-Listed due to moderate longer term declines in breeding populations of more than 20% but less than 50% since 1969 (Eaton *et alii*, 2015). Both the starling and house sparrow are listed as a '*species of principal importance in England*' under Section 41 of the Natural Environment and Rural Communities (NERC) Act, 2006. It is likely that starlings forage within the surrounding habitat, although it is not anticipated that they would nest directly on site (Brown and Grice, 2005). It is likely that the house sparrow and dunnock utilise the hedgerows for both nesting and foraging and these species are therefore likely to be directed affected by any future proposals for the site. Suitable mitigation and enhancement measures have been recommended accordingly.

Amphibians: No suitable breeding habitat for great crested newts is located on site. The closest suitable waterbody is located approximately 150m to the north of the

survey boundary. The rough grass headlands offer broadly suitable terrestrial habitat for amphibians such as the common frog and common toad and may be considered to provide a '*place of shelter*' for great crested newts. However, the majority of the site has been ploughed and the small and isolated nature of the areas of suitable habitat, mean it is highly unlikely that great crested newts are present on site. Therefore the likelihood of the proposed development activities giving rise to an offence under wildlife legislation or resulting in any measurable impact on the '*favourable conservation status*' of great crested newts at this site is considered negligible. Nevertheless, a precautionary approach to habitat clearance should be adopted, to ensure compliance with the Wildlife and Countryside Act, 1981 (as amended).

Reptiles: The rough grass headlands offer some limited suitable habitat for common reptile species, such as the slow-worm. However, the area of this suitable habitat is small (<1ha) and the majority of the site is currently ploughed. Given the limited amount of suitable habitat, it is considered highly unlikely that the site would support a significant population of reptiles. The hedgerows are to be retained as part of any future development of the site, providing continued refuge habitat for this faunal group. Given the above, it is considered highly unlikely that reptiles would be impacted upon by any future development of this site. The implementation of a precautionary approach to habitat clearance (as above), will ensure compliance with Wildlife and Countryside Act, 1981 (as amended).

Hazel dormice: Hazel dormice are known to be widespread in southern and central England, although populations are patchily distributed where suitable habitat exists (Bright & Morris, 2005). The hedgerows on site are broadly suitable for hazel dormice and connect the site to small pockets of broadleaved woodland within the wider landscape. However, no records for hazel dormice have been returned from the 1km data search, and it is understood that the majority of the hedgerows are to be retained as part of any future proposals. It is therefore not anticipated that any future site development will impact upon the species.

Brown hare: The brown hare is a '*species of principal importance for the purpose of conserving biodiversity in England*' as listed under S.41 of the Natural Environment and Rural Communities (NERC) Act, 2006, due to undergoing significant and ongoing

declines in numbers (Cresswell *et al.*, 2012). The brown hare used to be common and widespread throughout lowland Britain, but is now much more patchily distributed, and less abundant where they still occur (Hutchings & Harris, 1996). The brown hare population in Wiltshire is considered to be locally variable and within pockets (Wiltshire Mammal Group, 2014). The open arable and grassland habitats within and surrounding the site are considered to be largely suitable for brown hare and a single record for the species has been returned from the 1km data search (located 500m to the west of the site). However, the record returned is not recent (>10 years old) and the species are known to have a large annual range of 20-190ha, travelling up to 1.7km between feeding sites and resting sites (Cresswell *et al.*, 2012). It is therefore considered that the loss of suitable habitat for brown hare as part of any future development at the site is considered highly unlikely to significantly affect the status of brown hares at a local or county level.

3.4 Opportunities

Opportunities for biodiversity enhancement will be secured through the completion of a detailed Ecological Mitigation and Enhancement Strategy, which could be conditioned to any consent for this site. Opportunities may include:

- Retention of vegetated field margins to hedgerows, facilitating wildlife dispersal across the site and into neighbouring habitats;
- New species-rich hedgerow and native tree planting (*e.g.* between new property boundaries). Once established, they will provide further nesting and foraging habitat for a range of bird species, as well as commuting and foraging opportunities for bats and other small mammals, creating new connectivity between the site and the surrounding habitats;
- Creation of a mixture of habitats in areas of open space (*e.g.* in structure and through management) to provide opportunities for a range of species;
- Use of native species, or those with a known benefit to wildlife within future landscape proposals. This may include tree planting (specifically fruit trees such as apple, plum, pear *etc.*) which may provide an important winter food source for birds;

- Inclusion of scented night-flowering plants which would enhance the post-developed site by attracting night-flying insects, providing a food resource for bats;
- The addition of wildlife boxes (*e.g.* bird, bat, hedgehog and invertebrate boxes) into the post-developed site.

Implementation of these opportunities will contribute to meeting the environmental requirements of the Core Strategy for Wiltshire (specifically Core Policy 50: Biodiversity and Geodiversity)¹, providing both continued and enhanced biodiversity within any post-developed site.

¹ **Wiltshire Core Strategy (2015)**. Available online at: <http://www.wiltshire.gov.uk/adopted-local-plan-jan16-low-res.pdf>

4. ANNEXES

4.1 Photographs

4.2 Plans

4.3 Survey & Third-Party Data

4.4 Survey Objectives

4.5 Limitations

4.6 Methods

4.7 References & Bibliography

4.8 Legislation & Best Practice

4.1 Photographs

All photographs taken on 27 March 2018.



Plate 1: Showing typical view of the site. Photograph looking north.



Plate 2: Showing view of Hedgerow 1. Photograph looking north.



Plate 3: Showing typical view of the northern site boundary. Photograph looking east.



Plate 4: Showing typical view of the eastern site boundary. Photograph looking south.



Plate 5: Showing typical view of the southern site boundary. Photograph looking east.



Plate 6: Showing typical view of Group 1 along the northern site boundary.

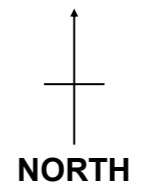
4.2 Plans

Plans:

4.2.1 Location Plan

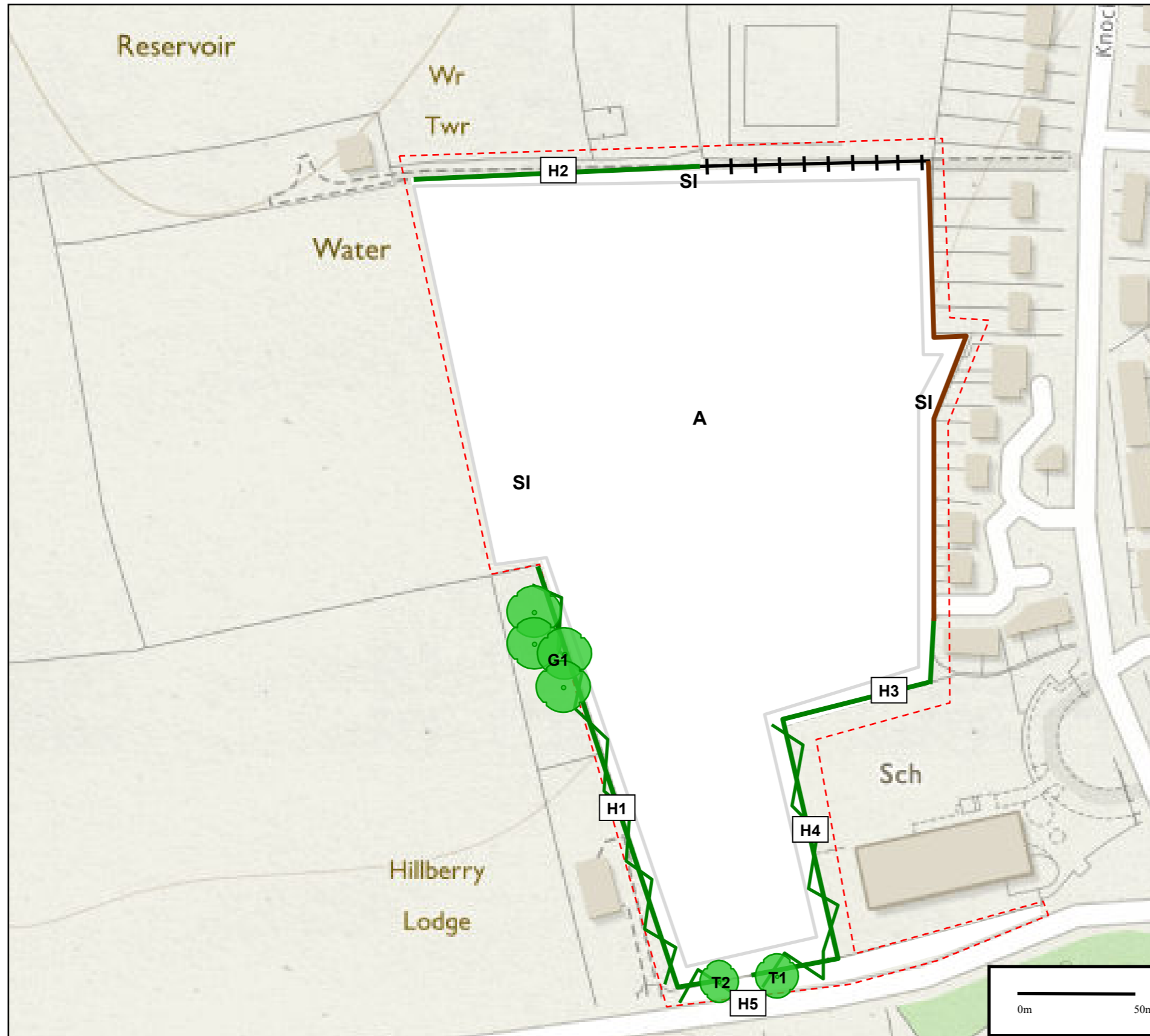
4.2.2 Phase 1 Habitat Survey Plan

Site Location



Client: Stanbridge Park (Sherston) Limited, a subsidiary of the Acorn Property Group
Site: Land at Upper Stanbridge Farm, Sherston, Wiltshire, SN16 0NJ
Title: Location Plan
Contract: 1295

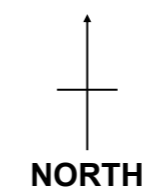
Contains Ordnance Survey data © Crown copyright and database right 2018. Unauthorised reproduction infringes Crown Copyright and may lead to prosecution or civil proceedings. Please note: this plan is intended only to indicate the approximate location of features and should therefore, not be treated as an accurate scale plan.



KEY:

- H1 Hedgerow Number
- A Cultivated/disturbed land (arable)
- SI Poor semi-improved grassland
- Notable tree
- ▲ Intact Hedgerow (species-rich)
- Intact Hedgerow (species-poor)
- Wooden panel fencing
- ⊥⊥⊥ Post and rail fencing
- ⋯ Survey Boundary

Contains Ordnance Survey data © Crown copyright and database right 2018. Unauthorised reproduction infringes Crown Copyright and may lead to prosecution or civil proceedings. Please note: this plan is intended only to indicate the approximate location of features and should therefore, not be treated as an accurate scale plan.



Client: Stanbridge Park (Sherston) Limited, a subsidiary of the Acorn Property Group
Site: Land at Upper Stanbridge Farm, Sherston, Wiltshire, SN16 0NJ
Title: Phase I Habitat Survey Plan
Contract: 1295

4.3 Survey & Third-party Data

All surveys have been completed by appropriately qualified and experienced ecologists from Focus Ecology.

Third-party data has been obtained from Wiltshire & Swindon Biological Records Centre (WSBRC) and the Government's multi-agency website 'magic' (www.natreonthemap.naturalengland.org.uk). Copies of raw survey and third-party data are available on request. Please contact the Project Contact at Focus Ecology for more details.

Table 1: Summary of Habitat Features

Phase 1 Habitat Feature	Phase 1 Code	Size / Extent	Condition	Qualifies as S.41 Habitat	Qualifies as EC Habitats of Community Interest (Annex I)
Cultivated/disturbed land (arable)	J1.1	2.70ha	The majority of the site is dominated by a ploughed, arable field.	No	No
Poor semi-improved grassland	B6	0.6ha	The headlands are dominated by unmanaged, rough grassland. Species recorded include false oat-grass, perennial rye-grass and Yorkshire fog with occasional forbs such as cleavers, common nettle, herb-Robert, dock sp., lords and ladies, white dead-nettle and hogweed.	No	No
Intact hedgerow (species-rich)	J2.3.1	290m	3 species-rich hedgerows are located along the site boundaries (hedgerow 1, 4 and 5). Hedgerow 1 is managed to a height of approximately 1m and is comprised of elder, privet, rose sp., hawthorn and ash with ivy interspersed throughout. Hedgerow 4 is comprised of elm, hazel, hawthorn, wayfaring tree, rose sp.,	Yes	No

			holly and willow with occasional bramble. Hedgerow 5 is dominated by elm, with hazel, hawthorn, privet and <i>Rose</i> sp. Semi-mature cherry and Turkey oak were also recorded.		
Intact hedgerow (species-poor)	J2.3.2	230m	Species-poor hedgerows are present to the north and south (hedgerow 2 and 3). Hedgerow 2 is dominated by hawthorn with occasional hazel and beech (encroaching from neighbouring land). Ivy was interspersed throughout. Hedgerow 3 is of recent origin and forms part of the school boundary. Species recorded includes blackthorn and hawthorn with occasional bramble.	Yes	No
Fence	J3.6	350m	Mixed fencing is present along the site boundaries.	No	No

Table 2: Summary of Preliminary Roost Assessment

Tree	Potential Roost Features	Evidence of Bats	Category (Collins 2016)
Group 1 (G1)	Group of mature poplar sp., (within hedgerow 1). No potential roost features observed, but trees >6m tall.	No.	Low
Tree 1 (T1)	Semi-mature cherry tree within hedgerow 5. No potential roost features observed.	No.	Negligible
Tree 2 (T2)	Semi-mature Turkey oak within hedgerow 5. No potential roost features observed.	No.	Negligible

4.4 Survey Objectives

The objectives of the survey were:

1. to carry out a Preliminary Ecological Appraisal of the site to identify any habitats, species or features of nature conservation significance;
2. to undertake a daytime preliminary roost assessment for bats, following best practice survey guidelines (Mitchell-Jones, 2004; Collins, 2016);
3. to undertake a “third-party data” search to acquire details of any protected species records held by third parties and information on nature conservation designations relevant to the site, to collate and comment upon the responses;
4. to produce a concise report identifying known and likely ecological constraints associated with a project. The report will identify any additional surveys that may be required to inform an Ecological Impact Assessment (EclA). It will also indicate mitigation measures that may be required, applying the ‘mitigation hierarchy’, to ensure compliance with wildlife law and recognised best practice. Intrinsic opportunities offered by a project to deliver ecological enhancement will be identified within the report.

4.5 Limitations

The Preliminary Ecological Appraisal was carried out by a suitably experienced ecologist from Focus Ecology. The month of survey (March) is outside the optimal survey period for most habitats and species in England.

Many fauna species become inactive and their field signs less apparent in the winter months. Similarly some plant species may also become less evident in the winter as a consequence of their annual growth pattern or natural process of die-back to roots, corms, bulbs and tubers.

The reader is reminded that an ecological survey that is based on a single site visit will typically under-represent the biological diversity of a site, owing to seasonal variations in animal activity and plant growth form in particular. However, a Preliminary Ecological Appraisal such as this can be completed by an experienced ecologist at any time of year subject to suitable weather conditions.

No significant survey limitations were encountered.

4.6 Methods

4.6.1 Third-Party Data Trawl

A third-party data trawl was conducted in March 2018, to collect any existing site records and protected/notable species data records for within the site boundary and a 1km area around the site. The following third-party consultees were contacted: Wiltshire & Swindon Biological Records Centre. The government's multi-agency website 'magic' was also consulted (www.magic.gov.uk).

4.6.2 Preliminary Ecological Appraisal

An experienced ecological consultant undertook a field survey on 27 March 2018 in accordance with the Guidelines for Preliminary Ecological Appraisal (CIEEM, 2017 2nd Edition) and the Handbook for Phase 1 Habitat Survey (JNCC, 2010). The extent of each habitat type was mapped and details of relative plant species abundance within homogenous areas were recorded. Species abundance was measured on the DAFOR scale (Dominant, Abundant, Frequent, Occasional and Rare), with the addition of the term 'Local' to describe variation on a small-scale.

Higher plant nomenclature follows Stace (3rd Edition), 2010 with common (English) names being used for ease of reading and accessibility. Bryophyte nomenclature follows Atherton *et al.* (Eds), 2010, with English names being used in line with this publication. Scientific names are used for fungal identification, with authorities referenced in the text, for reasons of clarity.

The survey method was extended to include a search for fauna of ecological importance, including those that are afforded legal protection.

Target Note descriptions were recorded for features of ecological importance, these may include areas of species-rich vegetation and field signs of protected and/or notable species.

4.6.3 Preliminary Roost Assessment

A ground-based tree assessment was undertaken of mature and semi-mature trees within the site boundary. Survey methods followed the guidelines and techniques recommended in Mitchell-Jones (2004), Collins (2016) and Cowan, (2003). Binoculars were used as required to obtain better views of potential roost features in trees. Features that can provide roosting sites for bats in trees include:

- woodpecker holes;
- cracks, splits and fissures in trunk and limbs;
- rot holes;
- trunk cavities;
- loose bark;
- dense ivy growth.

Trees were assessed as having either ‘high’, ‘medium’, ‘low’ or ‘negligible’ potential to support roosting bats, and categorised using definitions in Collins (2016) (see Table 3, below).

Table 3: Guidelines for Assessing the Potential Suitability for Roosting Bats of Trees within a Development Site²

Suitability	Description: Structure
Negligible	Negligible features on the tree that are likely to be used by roosting bats.
Low	A tree of sufficient size and age to contain potential roosting features but with none seen from the ground or features with only very limited roosting potential.
Moderate	A tree with one or more potential roost features that could be used by bats due to their appropriate condition (<i>i.e.</i> size, shelter, protection) and surrounding habitat. However, it is unlikely to support a roost of high conservation value (with respect to roost type only).
High	A tree with one or more potential roost features that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their condition (<i>i.e.</i> size, protection, shelter) and surrounding habitat.
Confirmed Roost	Tree with confirmed bat roost.

² Taken and adapted from: **Collins, J. (ed.) (2016)**. *Bat Surveys for Professional Ecologists: Good Practice Guidelines, 3rd Edition*. The Bat Conservation Trust, London, UK.

4.7 References & Bibliography

Altringham, J. D. (2003). *British Bats*. Harper Collins Publishers, Glasgow, UK.

Bat Conservation Trust (2009). *Bats and lighting in the UK- Bats and the built environment series*. Bat Conservation Trust, London, UK

Battersby, J. (Ed) & Tracking Mammals Partnership (2005). *UK Mammals: Species Status and Population Trends. First Report by the Tracking Mammals Partnership*. JNCC/Tracking Mammals Partnership, Peterborough, UK.

Blamey, M., Fitter, R. & Fitter, A. (2003). *Wild Flowers of Britain & Ireland*. A&C Black, London, UK.

BRIG (ed. Ant Maddock) (2009) (Updated Dec 2011). *UK Biodiversity Action Plan. Priority Habitat Descriptions*. [online] JNCC. Available at: <http://jncc.defra.gov.uk/page-5706> [Accessed February 2018].

Bright, P., Morris, P., Mitchell-Jones, T. (2006). *The Dormouse Conservation Handbook (2nd Edition)*. English Nature (now Natural England), Northminster House, Peterborough, UK.

Burfield, I. (2004). *Birds in Europe – Population Estimates, Trends & Conservation Status*. BirdLife Conservation Series 12. BirdLife International.

Brown, P & Grice, P. (2005). *Birds in England*. T&AD Poyser, UK.

Byron, H. (2000). *Biodiversity and Environmental Impact Assessment: A Good Practice Guide for Road Schemes*. The RSPB, WWF-UK, English Nature and the Wildlife Trusts, Sandy, UK.

CIEEM (2017). *Guidelines for Preliminary Ecological Appraisal, 2nd edition*. Chartered Institute of Ecology and Environmental Management, Winchester, UK.

CIEEM (2017). *Guidelines on Ecological Report Writing*. Chartered Institute of Ecology and Environmental Management, Winchester, UK.

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

Cowan, A. (2003). *Trees and Bats*. Arboricultural Association Guidance Note 1 (Second Edition). AborEcology Ltd, UK.

Cresswell, W J. et al. (Eds) (2012). *UK BAP Mammals: Interim Guidance for Survey Methodologies, Impact Assessment and Mitigation.* The Mammal Society, Southampton, UK.

Eaton M A, Aebischer N J, Brown A F, Hearn R D, Lock L, Musgrove A J, Noble D G, Stroud D A and Gregory R D (2015). *Birds of Conservation Concern 4: the population status of birds in the United Kingdom, Channel Islands and Isle of Man.* British Birds 108, 708–746.

English Nature (2004). *Reptiles: guidelines for developers.* English Nature (now Natural England), Peterborough, UK.

Gent, A.H., and Gibson, S.D., eds. (1998). *Herpetofauna Workers' Manual.* Peterborough, Joint Nature Conservation Committee, UK.

Hawkswell, S. (Ed.) (1997). *The Wildlife Sites Handbook - Version 2.* Royal Society for Nature Conservation, Lincoln, UK.

Her Majesty's Stationary Office (1981). *The Wildlife and Countryside Act.* Her Majesty's Stationary Office, London, UK.

Her Majesty's Stationary Office (1992). *The Protection of Badgers Act.* Her Majesty's Stationary Office, London, UK.

Her Majesty's Stationary Office (1997). *The Hedgerows Regulations.* Her Majesty's Stationary Office, London, UK.

Her Majesty's Stationary Office (2000). *The Countryside and Rights of Way (CROW) Act.* Her Majesty's Stationary Office, London, UK.

Her Majesty's Stationary Office (2006). *The Natural Environment and Rural Communities (NERC) Act.* Her Majesty's Stationary Office, London, UK.

Her Majesty's Stationary Office (2017). *The Conservation of Habitats and Species Regulations.* Her Majesty's Stationary Office, London, UK.

Hutchings, M.R. and Harris, S., (1996), *The current status of the brown hare (Lepus europaeus) in Britain* (no longer available in print). Online: <http://jncc.defra.gov.uk/page-2816> (accessed April, 2018).

Institute of Environmental Assessment (1995). *Guidelines for Baseline Ecological Assessment.* E & FN Spon, London, UK.

Institution of Lighting Professionals (2011). Guidance Notes for the Reduction of Obtrusive Lighting. GN01:2011. [online] Institution of Lighting Professionals. Available at <https://www.theilp.org.uk/documents/obtrusive-light/> [Accessed April 2018].

Joint Nature Conservation Committee (2004). *Bat Worker's Manual (3rd Edition)*. Joint Nature Conservation Committee, Peterborough, UK.

Joint Nature Conservancy Council (2010). *Handbook for Phase 1 Habitat Survey - a technique for environmental audit*. Nature Conservancy Council, Peterborough, UK.

Mathews F, Roche N, Aughney T, Jones N, Day J, Baker J, Langton S. (2015). *Barriers and benefits: implications of artificial night-lighting for the distribution of common bats in Britain and Ireland*. Phil. Trans. R. Soc. B 370: 20140124. <http://dx.doi.org/10.1098/rstb.2014.0124>

Mitchell-Jones, A.J. (2004). *Bat Mitigation Guidelines*. English Nature, Peterborough, UK.

Natural England & DEFRA (2015). *Guidance - Bats: Surveys and Mitigation for Development Projects. Standing advice for local planning authorities to assess impacts of development on bats*. <https://www.gov.uk/guidance/bats-surveys-and-mitigation-for-development-projects> (Accessed April 2018).

Office of the Deputy Prime Minister (2005). *Circular 06/2005: Biodiversity and Geological Conservation – Statutory obligations and their impact within the planning system*. Her Majesty's Stationary Office, London, UK.

Office of the Deputy Prime Minister (2012). *National Planning Policy Framework (NPPF)*. Her Majesty's Stationary Office, London, UK.

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.

Ratcliffe, D. (Ed.) (1977). *A Nature Conservation Review*. Cambridge University Press, Cambridge, UK.

Rodwell, J. S. (Ed) (1991 *et seq.*). *British Plant Communities*. Cambridge University Press, Cambridge, UK.

Stace, C. (2010 3rd Edn.). *New Flora of the British Isles*. Cambridge University Press, Cambridge, UK.

Wiltshire Mammal Group (2014). *Wiltshire Mammals – Brown Hare* [online]. Available at: <https://wiltshiremammals.files.wordpress.com/2014/06/march-brown-hare.pdf>

4.8 Legislation & Best Practice

4.8.1 The Conservation of Habitats and Species Regulations 2017

<http://www.legislation.gov.uk/ukxi/2010/490/contents/made>

These regulations, referred hereafter as “the Habitats Regulations”, represent the primary method by which Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora (the “Habitats Directive”) is transposed for England and Wales and their territorial seas. The Habitats Directive, in conjunction with the Birds Directive (Council Directive 2009/147/EEC) forms the basis for implementation of Europe’s nature conservation policy through both habitat and species level protection. The Habitats Directive requires the designation of strictly protected European sites known as Special Areas of Conservation (SACs). Together with the Special Protection Areas (SPAs) established by the Birds Directive, these collectively form the Natura 2000 Network of protected sites. The Habitats Directive also requires the strict protection of animals and plants of Community Interest listed under Annex IV. Habitat types requiring strict protection as SACs are listed under Annex I. The conservation of animals and plants listed under Annex II requires the designation of SACs.

The Habitats Regulations require that public bodies must exercise their nature conservation responsibilities to ensure compliance with the Habitats Directive. These regulations also require the conservation of natural habitats and habitats of species through the selection, designation and notification of marine and terrestrial ‘European Sites’ to be afforded protection under the Habitats Directive. The habitats and species of European Importance are listed under Annexes I and II of the Habitats Directive. The regulations also contain provision for the appropriate management of these European Sites including the control of damaging operations, special nature conservation orders and restoration orders, for example. The Habitats Regulations afford strict protection to European Protected Species of animals under Schedule 2 and plants under Schedule 5. Offences (subject to certain exceptions) include the deliberate capture, killing, disturbance or trade in these animals. Similarly plants listed under Schedule 5 are protected (subject to exceptions) from picking, collection, cutting, destruction or trade.

4.8.2 The Wildlife and Countryside Act 1981 (as amended)

While the Habitats Regulations provide the basis for nature conservation policy in Europe, the Wildlife and Countryside Act 1981 (as amended) (WCA) is still a major mechanism for the legislative protection of wildlife and countryside/national parks in the UK. The WCA, and its various amendments, draw on from pre-existing legislation and support the Habitats Regulations in implementing the Bern Convention (1979) and Directive 2009/147/EC on the conservation of wild birds. Schedules within the WCA provide a list of protected species and habitats, in addition to prohibited actions. Further details are provided

below for specific species relevant to the report. The WCA also contains measures for controlling invasive non-native species and amendments to a number of laws, including in relation to public rights of way.

4.8.3 The Countryside and Rights of Way (CROW) Act 2000

The CROW Act amends existing WCA legislation in accordance with the 1992 Convention on Biological Diversity (Rio Earth Summit). The Act applies to England and Wales only and encompasses public access, rights of way, nature conservation and Areas of Outstanding Natural Beauty (AONBs). Schedule 9 of the Act provides increased powers for the protection and management of SSSIs while Schedule 12 strengthens the legal protection for protected species via arrestable offences and heavier penalties.

4.8.4 The Natural Environment and Rural Communities (NERC) Act 2006

The Natural Environment and Rural Communities Act imposes a *Biodiversity Duty* (S.40) on all public bodies to conserve biodiversity at both species and habitat levels (S40). “*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.*”

S.41 of the Act requires the publication of a list of “*living organisms and types of habitat which in the Secretary of State’s opinion are of principal importance for the purpose of conserving biodiversity.*” The list generated under S.41 of the Act contains a number of types of habitats and species of animal and plant that have the potential to be affected by development projects of a range of sizes and impacts.

S.47 of the Act establishes special protection for the nest sites of certain birds that are known to re-use their nests and creates an additional Schedule containing these birds, namely golden eagle, white-tailed eagle and osprey. It is an offence to take, damage or destroy the nest of these three birds at any time.

The Act also establishes Natural England as the independent body “to ensure that the natural environment is conserved, enhanced and managed for the benefit of present and future generations, thereby contributing to sustainable development”. 943 species and 56 habitats of principal importance are included on the S41 list as guidance for public bodies on decisions that affect biodiversity.

4.8.5 The Hedgerow Regulations 1997

On 1 June 1997, the Hedgerow Regulations came into force under section 97 of the Environment Act 1995 to address the dramatic decline in UK hedgerows. The regulations protect important hedgerows by limiting removal through a system of notification via local planning authorities.

The regulations are aimed at countryside hedgerows in England and Wales “on or adjoining, common land, village greens, Site of Special Scientific Interest (which include National Nature Reserves, Special

Protection Areas under the Birds Directive and Special Areas of Conservation under the Habitats Directive), Local Nature Reserves, or land used for agriculture, forestry or the breeding or keeping of horses, ponies or donkeys” (Section 3.6).

Written permission is required from the local planning authority before the removal of any hedgerow over 20 metres and more than 30 years old. Hedgerows less than 20 metres long may also be considered if they form part of a continuous network of hedges. Garden hedges, however, are not protected. Once the LPA has received a written request they will issue either a Hedgerow Retention or Hedgerow Removal Notice within 42 days depending on whether they define the hedgerow as *important* or not. This is determined by the following;

- “They have been in existence 30 years or more; and”
- “They satisfy at least one of the criteria set out in Part II of Schedule 1 of the Regulations.”

Exemptions to the Regulations fall into three categories:

- “small scale works;”
- “works approved under other procedures which ensure careful assessment and consideration of the impact on the local environment; and”
- “works authorised under other legislation which justify the removal of a hedgerow without first establishing its importance.”

It is an offence to remove a hedgerow subject to a retention notice, or to remove a hedgerow protected under the Hedgerow Regulations without first obtaining the required removal notice.

4.8.6 The UK Post-2010 Biodiversity Framework

As of 17 July 2012, the UK Post-2012 Biodiversity Framework replaced the UK level Biodiversity Action Plan to deliver the outcomes of the Government’s Biodiversity 2020 Strategy. This was in response to the 2011 EU Biodiversity Strategy (EUBS) and the 2010 United Nations Convention on Biological Diversity (CBD) whereby five “*Aichi*’ *strategic goals and supporting targets*” have been internationally agreed.

The UK Framework is a collaborative effort between Defra and JNCC on behalf of the Four Countries’ Biodiversity Group to achieve the ‘*Aichi*’ strategic goals through focused supporting targets and follows on from policies contained within the Natural Environment White Paper (2011).

4.8.7 National Planning Policy Framework

The National Planning Policy Framework (NPPF) was published on 27 March 2012 and acts as guidance for planning authorities (LPAs) in England to form Local Plan policies in favour of sustainable development as part of the government’s reforms to increase the accessibility of the planning system and promote long term sustainable growth. Along with the Circular 06/205, the NPPF consolidates the

Planning Policy Statements and Guidance Notes, many of which are now obsolete, including *Planning Policy Statement 9: Biodiversity and Geological Conservation (PPS9)*.

The framework states that “*planning policies and decisions should be based on up-to-date information about the natural environment and other characteristics of the area*” (Environment, Paragraph 165).

Chapter 11 of the framework advises on:

“conserving and enhancing the natural environment” wherein Paragraph 118 states that “*when determining planning applications, local planning authorities should aim to conserve and enhance biodiversity by applying the following principles:*”

“*if significant harm resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts) adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;*”

“*proposed development on land within or outside a Site of Special Scientific Interest likely to have an adverse effect on a Site of Special Scientific Interest (either individually or in combination with other developments) should not normally be permitted. Where an adverse effect on the site’s notified special interest feature is likely, an exception should only be made where the benefits of the development, at this site, clearly outweigh both the impacts that it is likely to have on the features of the site that make it of special scientific interest and any broader impacts on the national network of Sites of Special Scientific Interest;*”

“*development proposals where the primary objective is to conserve or enhance biodiversity should be permitted*”

“*opportunities to incorporate biodiversity in and around developments should be encouraged;*”

“*planning permission should be refused for development resulting in the loss or deterioration of irreplaceable habitats, including ancient woodland and the loss of aged or veteran trees found outside ancient woodland, unless the need for, and benefits of, the development in that location clearly outweigh the loss;*”

“*the following wildlife sites should be given the same protection as European sites:*

- *potential Special Protection Areas and possible Special Areas of Conservation;*
- *listed or proposed Ramsar sites; and*
- *sites identified, or required, as compensatory measures for adverse effects on European sites, potential Special Protection Areas, possible Special Areas of Conservation, and listed or proposed Ramsar sites.*”

4.8.8 Circular 06/205: Biodiversity and Geological Conservation

The Circular 06/205 complements the NPPF by advising on how the law relates to planning and nature conservation in England, with particular reference to designated sites and protected species;

“It is essential that the presence or otherwise of protected species, and the extent that they may be affected by the proposed development, is established before the planning permission is granted, otherwise all relevant material considerations may not have been addressed in making the decision” (Paragraph 99). However, *“developers should not be required to undertake surveys for protected species unless there is a reasonable likelihood of the species being present and affected by the development.”*

Part IV also reminds LPAs and developers that licences and mitigation measures may be required in addition to planning permissions if protected species are to be affected by the development. *“The breach of protected species legislation can often give rise to a criminal offence”* (Paragraph 101).

4.8.9 BS42020:2013 Biodiversity. Code of Practice for Planning and Development

BS 42020 was developed by BSI with input from a variety of organisations (in all sectors) and experts in the field of biodiversity. It is fundamentally engaged with the incorporation of biodiversity into all stages of the planning process. The standard aims to identify a suite of recommendations and advice to ensure that decision-making and activities undertaken from inception to fruition of planning applications are adequately informed by appropriate and robust ecological knowledge. BS42020 aims to:

- give decision-makers (and specifically planning authorities and other regulatory bodies) more confidence that the ecological audits and assessment of impact on biodiversity provided in support of development proposals is fit for purpose;
- encourage greater consistency and transparency in the quality, scientific robustness and transparency of ecological reports that are submitted with planning applications and other forms of regulatory approval; and
- foster an approach that is proportionate and retains and positive environmental legacy following development.

4.8.10 Bats

All British bats are “European Protected Species” (EPS) and listed on Annex II and Annex IV of the EC Habitats Directive. The Directive is transposed into UK law through the Conservation of Habitats and Species Regulations 2017. The following actions affecting bats are prohibited under the legislation:

- deliberate capture, injury or killing of a bat;
- deliberate disturbance of a bat and in particular disturbance which is likely to impair their ability:
 - to survive, to breed or reproduce, or to rear or nurture their young, or

- in the case of animals of a hibernating or migratory species, to hibernate or migrate;
- or to affect significantly the local distribution or abundance of the species to which they belong.
- damage or destruction of a breeding site or resting place;
- possessing, controlling transporting, selling or exchanging, or offering for sale or exchange, any bat or any part of a bat or anything derived from one.

Bats are also afforded protection from intentional or reckless ‘disturbance’ by the Wildlife and Countryside Act 1981 (as amended). The deliberate or reckless obstruction of access to a structure or place used by bats for shelter and protection is also an offence under the Act.

4.8.11 Birds

All wild birds in the UK are afforded protection under the Wildlife and Countryside Act 1981 (as amended). This protection includes killing, injuring or taking wild birds as well as taking, damaging or destroying bird nests in use or being built, and taking or destroying eggs. Birds listed under Schedule 1 of the Act are afforded additional protection from disturbance during nesting and offences relating to these birds are subject to special penalties. The nest sites of birds listed under Schedule ZA1 of the act (golden eagle, white-tailed eagle and osprey) are afforded strict, year-round protection even when the nests are not in active use.

A small number of derogated bird species, principally members of the genus *Corvus* (crows), *Larus* (gulls) and *Columba* (pigeons), may be killed by authorised persons (landowner/occupier or otherwise authorised by the landowner or relevant conservation body or fisheries board) under a ‘general licence’. The general licence is issued by Natural England (in the case of English usage). The general licence can only be exercised for reasons of preserving public health or public safety and cannot be lawfully used in the case of damage to property or nuisance.

4.8.12 Great Crested Newts

The great crested newt (*Triturus cristatus*) (Laurenti, 1758), is a “European Protected Species” (EPS) and listed on Annex II and Annex IV of the EC Habitats Directive. The Directive is transposed into UK law through the Conservation of Habitats and Species Regulations 2017. The following actions affecting great crested newts are prohibited under the legislation:

- deliberate capture, injury or killing of a great crested newt;
- deliberate disturbance of a great crested newt and in particular disturbance which is likely to impair their ability:
 - to survive, to breed or reproduce, or to rear or nurture their young, or
 - in the case of animals of a hibernating or migratory species, to hibernate or migrate;
 - or to affect significantly the local distribution or abundance of the species to which they belong.
- damage or destruction of a breeding site or resting place;

- possessing, controlling transporting, selling or exchanging, or offering for sale or exchange, any bat or any part of a great crested newt or anything derived from one.

Great crested newts are also afforded protection from intentional or reckless 'disturbance' by the Wildlife and Countryside Act 1981 (as amended). The deliberate or reckless obstruction of access to a structure or place used by great crested newts for shelter and protection is also an offence under the Act. This applies to both aquatic and terrestrial habitat.

4.8.13 Reptiles

All common reptile species (grass snake, adder, common lizard and slow-worm) native to Britain are protected by Schedule 5 the Wildlife & Countryside Act, 1981 (as amended). It is illegal to:

- deliberately kill, injure a reptile or
- sale, barter, exchange, transport for sale and advertising to sell or to buy a reptile.
- In Northern Ireland they are fully protected against killing, injuring, capturing, disturbance, possession or trade.

In addition sand lizard and smooth snake are protected under the Conservation of Habitats and Species Regulations 2017 (with protection as described above).

5. QUALIFICATIONS & EXPERIENCE

Focus Ecology was formed in 2010 and has the expertise to provide sure-fire ecological and arboricultural solutions to a wide range of projects. The company ethos forges the highest standards of professional scientific practice with a best value approach for our clients. Our core area of expertise is in the production of specialist ecological and arboricultural reports and advice to support planning applications. However, our flexible approach, range of skills and broad project experience from major infrastructure contracts to smaller projects allows us to adapt to your individual requirements. Focus Ecology is situated in Worcestershire, providing a convenient and central UK location.

Jessica Stuart-Smith BSc (Hons) GradCIEEM AMRSB

Jessica is an Ecologist who joined Focus Ecology in 2015. She holds a BSc (Hons) degree in Zoology from the University of Roehampton. Her ecological experience includes Preliminary Ecological Appraisals, breeding bird surveys and surveying for European Protected Species including great crested newts, bats, otters and hazel dormice. Jessica is also a competent surveyor of reptiles and badgers. Jessica holds a Natural England survey licence for bats (Class 2) and great crested newts and is a Graduate member of the Chartered Institute of Ecology and Environmental Management (CIEEM).

This report has been checked for quality and content by:

Graham Davison BSc (Hons) MSc MCIEEM MRSB

Graham is an ecologist with over sixteen years of experience in the field of applied ecology. He holds a BSc (Hons) degree in Zoology and an MSc with distinction in Law and Environmental Science. Graham's Masters paper on legal and practical implications for mammal reintroductions was published by the IUCN. His ecological experience includes surveys to identify nationally and locally important sites for wildlife, ecological services to local planning authorities and provision of ecological reports to accompany major infrastructure projects, housing schemes, industrial developments and mineral extraction. Graham is a skilled botanical surveyor specialising in Phase I and Phase II (NVC) Habitat Surveys. Graham has considerable expertise in protected species surveys, holding protected species licenses for bats, great crested newts, white-clawed crayfish and barn owls as well as competency in the survey of badgers, reptiles, otter, water vole, breeding and over-wintering birds. Graham has held Natural England Mitigation (development) licences for bats (including being a Registered Consultant for the new Bat Low Impact Class Licence) and great crested newts, and numerous Natural England licences to close or disturb badger setts. Graham is highly skilled in the production of reports and Nature Conservation Management Plans providing advice to ensure legal compliance and consistency with recognised best practice. Graham has appeared and delivered evidence as an expert witness for Planning Appeals and Public Inquiry. Graham has been interviewed for BBC local radio and TV programmes to provide specialist expertise on ecological topics.