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Church of All Hallows, High Hoyland, South Yorkshire

Preliminary Ecological Appraisal (PEA)

September 2022

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1 SUMMARY

This Preliminary Ecological Appraisal (PEA) included a desk study of designated sites and ecological data, and a detailed walkover survey of the site considering habitats and species.

Ecological constraints were identified for amphibians, badgers (*Meles meles*), foraging and commuting bats, breeding birds and other terrestrial mammals as detailed within Section 5.1. No additional survey work is required to better understand the baseline of the site or to determine presence / likely absence of protected species to inform the planning application.

Ecological constraints are to be avoided by implementing Reasonable Avoidance Methods (RAMs), which can be secured through an appropriately worded condition of planning.

Section 5.3 of this report prescribes ecological compensation and enhancement strategies which should be secured post-development.

Recommendation	Timescales
Amphibians Reasonable Avoidance Methods (RAMs) to be undertaken by onsite staff	To be secured as an appropriately worded condition of planning
Biodiversity Net Gain Habitat compensation and enhancements provided within Section 5.3 of this report should be carried out.	To be secured as an appropriately worded condition of planning
Badger Reasonable Avoidance Methods (RAMs) to be undertaken by onsite staff	During construction work
Foraging and Commuting Bats A soft-lighting strategy should be devised by a lighting engineer.	To be secured as an appropriately worded condition of planning
Breeding Birds Pre-commencement check and Reasonable Avoidance Methods (RAMs) to be undertaken.	During construction
Other Terrestrial Mammals Reasonable Avoidance Methods (RAMs) to be undertaken by onsite staff	During Construction

2 INTRODUCTION

2.1 Background

A planning application for the development of the site at the Church of All Hallows, High Hoyland, South Yorkshire is being prepared.

CPL Architects have asked Weddle Landscape Design to carry out a Preliminary Ecological Appraisal (PEA) of the site.

This Preliminary Ecological Appraisal aims to:

- Identify any likely ecological constraints
- Propose any necessary design changes
- Identify any further ecological surveys required to enable an Ecological Impact Assessment (EclA) to be carried out
- Propose any ecological enhancements

This PEA includes a desk study and extended UK Habitat Survey undertaken in July 2022.

This report has been prepared by John Harvey BA (Hons.) ACIEEM. And checked by Neil Northrop BA DipLD MCIHort MARborA CMLI with over 15 years ecological field surveying, scoping, protected species surveys and report writing experience.

This report has been prepared in line with BS 42020:2013 Biodiversity: Code of practice for planning and development and the CIEEM Guidance for Preliminary Ecological Appraisal (2017), Ecological Report Writing (2017) and Ecological Impact Assessment (2022).

2.2 Site Description

The Planning Application site is approximately 0.09ha and is located off Litherop Road (B-Road), within the district of High Hoyland at Grid Reference SE 27488 10675.

The application site pertains to an area of grassland bounded by drystone walls and dense scrub. A static occupied chalet was situated within the site. A number of mature trees were also recorded along the site boundaries. The application site is within the ownership of the Church of All hallows, which is located adjacent to the southern boundary of the site, across a public footpath. The site was situated within an arable crop dominated landscape with patches of mixed deciduous and pine woodland, such as Hoyland Bank situated across Litherop Road to the west and Deep Haigh Wood 400m to the east. Connective vegetative features were recorded within the landscape, comprising field boundary hedgerows, byways, woodland edges and arable field boundaries.

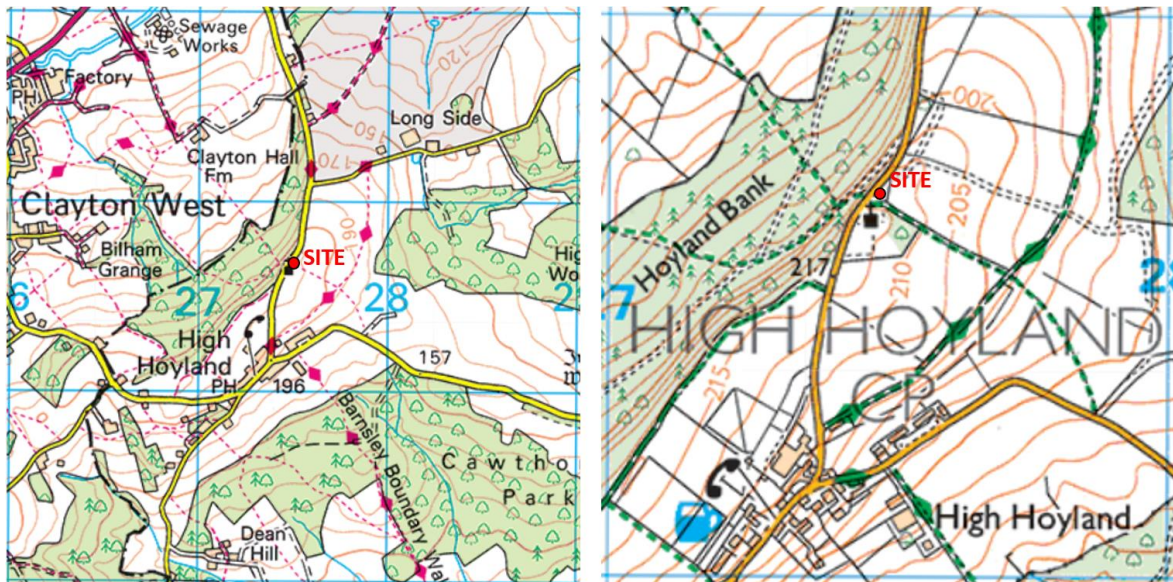


Figure 1 OS Map showing site location

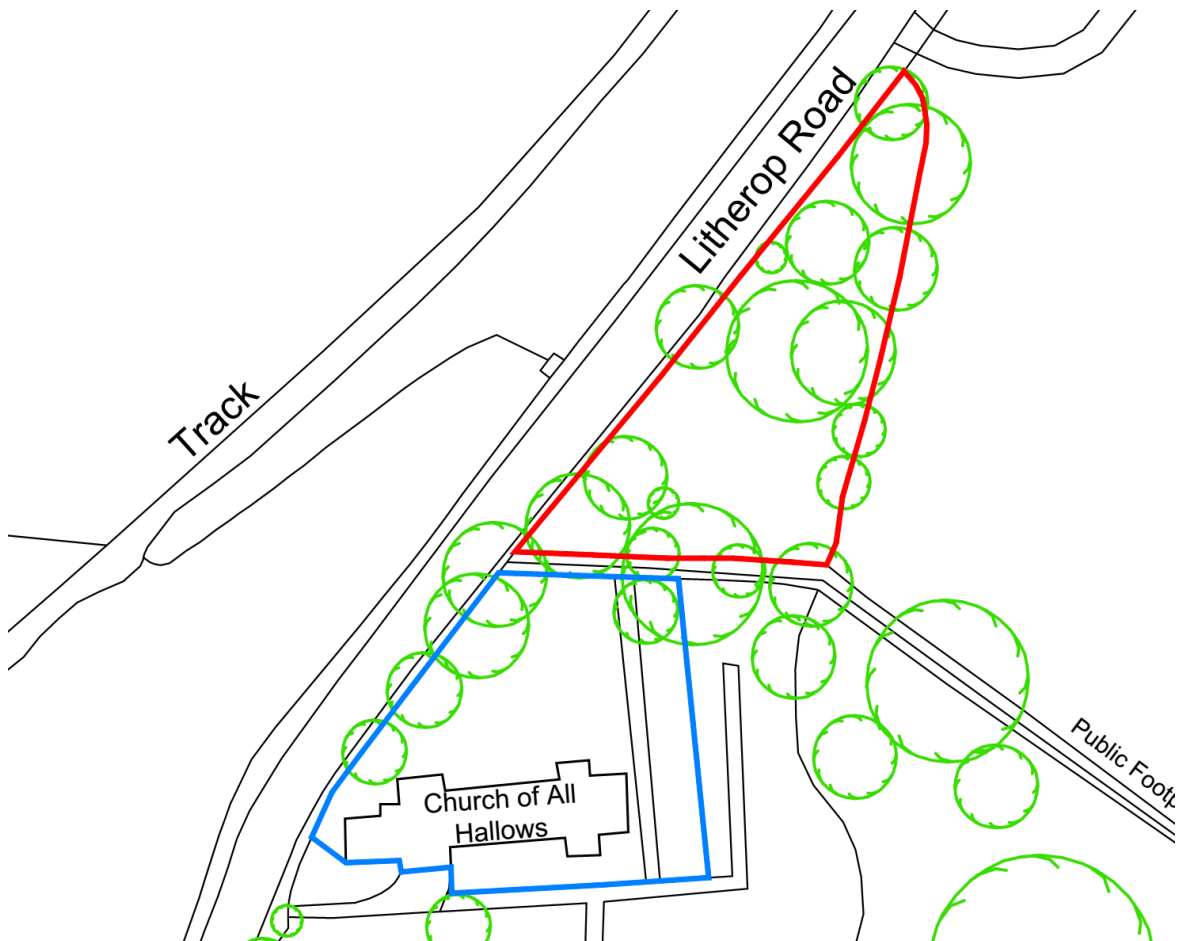


Figure 2 Development site boundary (red) and additional site ownership (blue)

2.3 The Proposals

A full planning application is being prepared for the development of a single residential dwelling. The two-storey dwelling will be positioned to the south of the application area and will include a permeable paved driveway and detached garage.



Figure 3. Site Proposals

2.4 Planning Status

The site is in High Hoyland under the development control of Barnsley Metropolitan Borough Council (BMBC).

3 METHODOLOGY

3.1 Desk Study

A desk study was undertaken to collate any existing ecological data for the site and its surroundings. As part of the desk study process, the following sources of record have been considered:

- Natural England Magic website for geographic information on key environmental schemes and designations. www.magic.gov.uk, August 2022 (see Appendix C).
- Barnsley Biological Records Centre data search

3.2 Field Surveys

3.2.1 Habitat Survey

Habitat surveys were carried out in accordance with the UK Habitat Classification¹ (Professional Edition) at a minimum of Level 4 and at a Minimum Mapping Unit of 25m²/5 linear m. The survey was undertaken as part of the walkover survey (a mild and sunny day). This is considered to be within the optimum period for Habitat Field Surveys, between March and October.

This appraisal includes a:

- Description of each habitat including a general list of species and assessment of general management.
- Condition assessment for each habitat, carried out following the condition criteria of The Biodiversity Metric 3.1 – Technical Supplement²
- Identification of UK BAP Priority Habitats under S41 of NERC Act and Habitats Directive Annex I habitat types.

A UK Habitats Plan of the site showing the various identified habitats is provided as drawing number 1444-001.

3.2.2 Badger Surveys

The site and immediate surroundings (where access was possible), was searched for any evidence of Badger (*Meles meles*) in accordance with Surveying Badgers³ on 4th July 2022, as part of the walkover survey.

During the walkover the site was searched for evidence of badger including setts, paths and prints, latrines, dung pits, snuffle holes, foraging signs, and hairs caught on wire fencing.

3.2.3 Bat Preliminary Roost Assessment of Trees

Trees within the site were inspected from ground level using binoculars and elevated survey by ladder if safe to search for any field signs of bats or potential roost features (PRF's). The survey was undertaken as part of the walkover survey for all accessible trees.

¹ The UK Habitat Classification User Manual, Version 1.1, Butcher et al, UKHab, 2020

² The Biodiversity Metric 3.1 – Technical Supplement, Natural England, 2021
<http://publications.naturalengland.org.uk/file/6089603756064768>

³ Surveying Badgers, Harris, Cresswell and Jefferies, The Mammal Society. 1989.

Each tree was searched for potential bat roost features (PRF's) including; Woodpecker Holes; Cavity's from knots, pruning wounds and cankers; Overlapping forks; Substantial Ivy; Cracks and splits; and Loose Bark.

Each tree was then categorised as the table below which has been structured in accordance with BCT Good Practice Guidelines⁴ (Table 4.1) and BS 8596:2015 Surveying for Bats in Trees and Woodlands⁵.

Category (Potential risk)	Description of Tree and Potential Roost Features
Known or Confirmed Roost	Bats discovered roosting within the tree, or recorded emerging from / entering the tree at dusk and / or dawn. Tree found to contain conclusive evidence of occupation by bats, such as bat droppings within a potential roost feature. A confirmed record (as supplied by an established source such as the local bat group) would also apply to this category.
High risk	Trees with a suitable potential roost feature, or with several features with some bat roost potential. Usually mature or veteran trees with multiple woodpecker holes / deep cracks and /or crevices. Often with a hollow trunk. May support dense ivy.
Medium risk	Trees with few cracks and fissures (of usable depth for low numbers of bats) and /or dense ivy / loose bark. Often semi-mature or mature specimens. Trees tend not to have large splits, hollow trunks or woodpecker holes for example. If present suitable features are likely to be low level or shallower than those in trees with high risk.
Low risk	Trees of sufficient size and age to contain bat roosts but with no obvious potential roost features seen during the ground level survey, or features seen with limited roosting potential only, e.g., small amounts of ivy.
Negligible/No risk	Trees with low or no potential to support bats. Usually without ivy or loose bark and cracks / fissures. Often young or occasionally semi-mature specimens with small girth. Likely to be relatively isolated from suitable foraging habitat or commuting features. May be located in well lit areas.

Table 1: Classification of trees for risk of bat roost presence

3.2.4 Bat Preliminary Roost Assessment of Buildings

A thorough internal and external inspection of the building to look for evidence of bats and assess bat roosting potential was undertaken as part of the walkover survey. Evidence of bats may take the form of droppings, urine stains, feeding remains, live bats, dead bats, grease mark stains, fur and claw marks made by bats regularly roosting in the same location.

During the external survey the roof and walls were inspected from ground level (using binoculars to aid visibility where required) and elevated survey by ladder if safe to search for gaps and voids that would allow bats access to suitable roost sites.

The building was assigned a roost suitability as defined BCT Good Practice Guidelines, as depicted in the Table 2 below.

Suitability	Description of Roosting Habitats
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⁴ Bat Surveys for Professional Ecologists, Good Practice Guidelines, 3rd Edition, Collins J, The Bat Conservation Trust, 2016.

⁵ BS 8596:2015 Surveying for Bats in Trees and Woodlands. BSI Group.

High suitability	A structure with one or more potential roost sites 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 size, shelter, protection, conditions and surrounding habitat.
Moderate suitability	A structure with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only – the assessments in this table are made irrespective of species conservation status, which is established after presence is confirmed).
Low suitability	A structure with one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable for maternity or hibernation).
Negligible suitability	Negligible habitat features on site likely to be used by roosting bats.

Table 2: Classification of building suitability for bats

3.2.5 Foraging and Commuting Bats

Habitat features on site are assessed for their suitability to support foraging and commuting bat activity. This assessment is independent from the suitability of the site to support roosting bats and provides information on the likeliness of bat foraging activity within the local environment, and the dependence of individuals on these features for commuting to alternative roosting sites, foraging and migration.

The site was assigned a habitat suitability as defined BCT Good Practice Guidelines, as depicted in the Table 3 below.

Suitability	Description of Habitat
High suitability	Continuous, high-quality habitat that is well connected to the wider landscape that is likely to be used regularly by commuting bats such as river valleys, streams, hedgerows, lines of trees and woodland edge High-quality habitat that is well connected to the wider landscape that is likely to be used foraging bats such as broadleaved woodland, tree-lined watercourses and grazed parkland. Site that is close to and connected to known roosts.
Moderate suitability	Continuous habitat connected to the wider landscape that could be used by bats for commuting such as treelines and scrub or linked back gardens. Habitat that is connected to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland or water.
Low suitability	Habitat that could be used by small numbers of commuting bats such as a gappy hedgerow or unvegetated stream, but isolated, i.e. not very well connected to the surrounding landscape by other habitat. Suitable, but isolated habitat that could be used by small numbers of foraging bats such as a lone tree (not in a parkland situation) or a patch of scrub.
Negligible suitability	Negligible habitat features on site likely to be used by foraging or commuting bats.

Table 3: Suitability Assessment Criteria for foraging and commuting bats

3.2.6 Breeding Birds

Assessment of the sites overall suitability to support breeding and nesting birds was undertaken. The sites habitat composition, geographic locality and association with designated sites are all relevant considerations. Where habitats are suitable to support locally or nationally protected species, breeding individuals or populations of birds further breeding or wintering bird surveys may be required to understand the impact from a proposed scheme.

3.2.7 Pond Scoping Assessment

A pond scoping exercise was undertaken to identify any ponds or watercourses located within the 250m zone of influence of the site using ordnance survey maps and aerial photography. The zone of influence may be amended based upon the scale of impact at the discretion of the ecologist.

3.2.8 Great Crested Newt Habitat Suitability Index Assessment

Habitat Suitability Index (HSI) assessment was carried out on accessible ponds. The survey was undertaken as part of the walkover survey. The survey was undertaken in accordance with the methodology described in ARG UK Advice Note 5⁶.

The Habitat Suitability Index (HSI) was developed by Oldham et al (2000) in order to provide an index allowing a direct comparison to be made between different water bodies. This index assesses ponds against different criteria, each of which have a bearing on the likelihood of great crested newts (*Triturus cristatus*) being present in the pond under consideration.

⁶ ARG UK (2010), ARG UK Advice Note 5: Great Crested Newt Habitat Suitability Index, Amphibian and Reptile Groups of the United Kingdom.

The criterion are Geographic Location; Pond Area; Permanence; Water Quality; Perimeter Shading; Wildfowl presence; Fish Presence; Pond Count (within a 1.0 km radius); Terrestrial Habitat (within 250 m); and Macrophyte Cover.

The HSI score is used to demonstrate whether a pond is suitable for breeding GCN and therefore, if it requires detailed survey. Generally, ponds with a high HSI score are more likely to support GCN than those with lower scores. Pond suitability is categorised using the following scale:

HSI Score	Pond Suitability
<0.5	Poor
0.5-0.59	Below Average
0.6-0.69	Average
0.7-0.79	Good
>0.8	Excellent

Table 4. HSI Suitability

Dr L Brady⁷ provides further advice on interpreting HSI suitability scores:

- *GCN tend to avoid ponds with low HSI scores. Ponds with relatively low HSI scores (poor to below average) typically only support GCN when they are located close to another occupied pond. Low scoring ponds are therefore only likely to support GCN in areas of high pond density.*
- *GCN do not necessarily avoid ponds with average suitability, but nor do they actively seek them out. The presence of GCN in ponds with an 'average' HSI score appears to be simply down to chance.*
- *GCN appear to prefer ponds with high HSI scores. Ponds with relatively high HSI scores (good to excellent) frequently support GCN. Survey work undertaken in SE England indicates that great crested newt are present in more than 90% of ponds with an 'excellent' HSI score.*

Therefore, any ponds that have an 'average' habitat suitability score or higher, or any low scoring ponds in areas of high pond density are likely to require further surveys to determine whether GCN are present, and if so, to establish population size.

3.2.9 Water Vole

A survey of any watercourses to look for evidence of water vole (*Arvicola amphibius*) was carried out as part of the walkover survey. This includes a search up and downstream beyond the site boundaries where access would allow in accordance with The Water Vole Mitigation Handbook.⁸

Evidence of water vole includes, burrows, lawns, runs, feeding stations, latrines and prints.

3.2.10 Otter

A survey of any watercourses to look for evidence of otter (*Lutra lutra*) was carried out as part of the walkover survey. This includes a search up and downstream beyond the site boundaries

⁷ Brady, L, Habitat Suitability Index; Interpreting HSI Scores, Calluma Ecological Services. Available: <https://www.calumma.co.uk/services/15-information/40-habitat-suitability-index>

⁸ The Water Vole Mitigation Handbook. 3rd Edition. Matthews and Chanin. The Mammal Society. 2011.

where access would allow in accordance with Monitoring the Otter and Conserving Natura 2000 Rivers.⁹

Evidence of otter includes holts, couches, spraints and prints.

3.2.11 Reptiles

An assessment of the onsite habitats was undertaken in order to evaluate the suitability of the habitats to support either episodically occurring or resident populations of reptiles. Habitats such as grasslands, heathland, dunes, brownfields, golf courses are all considered suitable, as are sites featuring a mosaic of habitats with south facing slopes or decreased levels of disturbance. Reptiles can be highly dispersive, so an assessment is also made of the suitability of the connective habitat to additional optimal habitats.

3.2.12 Invasive Species

As part of the walkover survey the site and immediate surroundings were searched for any evidence of invasive non-native plant species (INNS) listed on Schedule 9 of the Wildlife and Countryside Act 1981.

The species which are often encountered are Japanese Knotweed (*Fallopia japonica*), Himalayan balsam (*Impatiens glandulifera*), Giant Hogweed (*Heracleum mantegazzianum*), *Cotoneaster sp.*, *Rhododendron sp.*, and Variegated Yellow Archangel (*Lamium galeobdolon subsp. argentatum*).

3.3 Biodiversity Net Gain – Baseline Assessment

A study of the baseline BNG score was carried out using the DEFRA Small Sites Beta metric providing a summary of the onsite habitat types their relevant Distinctiveness, Condition and Strategic Significance. These are multiplied along with other factors to produce an Ecological Baseline Score, presented in Biodiversity Units (BU). The Baseline Score can then be used by the applicant to inform an appropriate mitigation strategy to reach 10% Biodiversity Net Gain in accordance with the Environment Act (2021).

3.4 Limitations

The top of the retaining walls, adjacent to the railway line could not be closely inspected due to a significant working at height hazard. Photographs could be taken from a vantage point to the west of the site; however, a thorough assessment was not possible. As such, it is considered possible that flora of interest may have been missed (such as WCA 1981 Schedule 9 invasive species). It is very unlikely that this limitation would have limited the identification of material ecological constraints.

⁹ Monitoring the Otter. Conserving Natura 2000 Rivers. Monitoring Series No 10. Chanin. English Nature. 2003.

4 BASELINE ECOLOGICAL CONDITION

4.1 Designations

No sites with statutory designations were recorded within 2km of the application area. The nearest designated site pertained to Denby Grange Colliery ponds located approximately 4.2km north of the site. Denby Grange Colliery ponds is designated for its wetland habitats and its large breeding population of great crested newt. The site is 'Unfavourable – Recovering'.

Two Local Wildlife Sites were returned by Barnsley Biological Records Centre. Hoyland Bank was positioned across from Litherop Road to the west of the site and Margery Wood was positioned approximately 0.8km to the south. Both sites are designated for their ancient woodland characteristics.

4.2 Habitats and Flora

4.2.1 Flora Records

BBRC provided no notable floral, BAP or Wildlife and Countryside Act (1981) species within 2km of the application area.

All higher plant species present were recorded during the site walkover and are provided within the description of each habitat.

No rare or notable plants were recorded during the site walkover.

The table below (Table 6) summarises the habitats present within and immediately adjacent to the site, and their relevant inclusion as a National Habitat of Principal Importance and / or within the Local Biodiversity Action Plan.

Primary Habitat Code	Secondary Code (Where required)	Primary UKHab Habitat	UKBAP Priority Habitat	LBAP	N/A
N/A	38, 47, 67, 300, 310, 330, 1230	Line of Trees			✓
g3c	16, 67	Other Neutral Grassland			✓
h3f	67, 76	Hawthorn Scrub			✓
h3h	76	Mixed Scrub			✓
u1b5	N/A	Buildings			✓

Table 7. UKHabs Habitat Types and their relevant inclusion in NHPI or LBAP

4.2.2 Line of Trees

Two tree lines were recorded to the north of the application area, along the western and eastern boundaries of the site. Each treeline was composed of mature specimens and including Ash (*Fraxinus excelsior*), Wych elm (*Ulmus glabra*), and Sycamore (*Acer pseudoplatanus*). The canopy of the treelines over-arched areas of nettle beds, scrub patches along the boundaries, permeable rubble surface and areas of mown / disturbed other neutral grassland.

Line of Trees Condition Assessment		Pass / Fail
1. More than 70% of trees are native species.		Pass
2. Tree canopy is predominantly continuous with gaps in canopy cover making up <10% of total area and no individual gap being >5 m wide.		Pass
3. Includes one or more mature ¹ or veteran ² tree.		Pass
4. There is an undisturbed naturally vegetated strip of at least 6 m on both sides to protect the line of trees from farming and other anthropogenic operations.		Fail
5. At least 95% of the trees are in a healthy condition (excluding veteran features valuable for wildlife). There is little or no evidence of an adverse impact on tree health by damage from livestock or wild animals, pests or diseases, or human activity.		Pass
Score	Moderate – Passing 4/5 criteria	

Table 8. Condition Assessment Table for Other Neutral Grassland



Figure 4. Western boundary of site, depicting woodland habitat. Cleared land, permeable gravel, other neutral grassland and scrub was all recorded underneath the canopy.

4.2.3 g3c – Other Neutral Grassland (761m²)

The dominant habitat within the application site pertained to other neutral grassland which was dominated by tall herb communities along the boundaries, particularly along the southern boundary which was shaded by the adjacent areas of dense scrub.

The grassland featured a grass to herb ratio of approximately 80:20, featuring a varied sward caused by vehicular disturbance and laid aggregate. Dominant species recorded across the habitat included Perennial rye grass (*Lolium perenne*), Annual meadow grass (*Poa annua*),

Cocksfoot (*Dactylis glomerata*), Common nettle (*Urtica dioica*) and Creeping buttercup (*Ranunculus repens*). Abundant, frequent and occasional species included, but was not limited to white clover (*Trifolium repens*), Broad-leaved dock (*Rumex obtusifolius*) Doves-foot cranesbill (*Geranium molle*) and Bush vetch (*Vicia sepium*).

Moderate Grassland Condition Assessment		Pass / Fail
1. The appearance and composition of the vegetation closely matches characteristics of the specific grassland habitat type (see UKHab definition). Wildflowers, sedges and indicator species for the specific grassland habitat type are very clearly and easily visible throughout the sward. NB - This criterion is essential for achieving moderate condition for non-acid grassland types only.		Fail
2. Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20 per cent is more than 7 cm) creating microclimates which provide opportunities for insects, birds and small mammals to live and breed.		Pass
3. Cover of bare ground between 1% and 5%, including localised areas, for example, rabbit warrens.		Fail
4. Cover of bracken less than 20% and cover of scrub (including bramble) less than 5%.		Pass
5. There is an absence of invasive non-native species (as listed on Schedule 9 of WCA, 1981). Combined cover of species indicative of sub-optimal condition ¹ and physical damage (such as excessive poaching, damage from machinery use or storage, damaging levels of access, or any other damaging management activities) accounts for less than 5% of total area.		Pass
6. There are greater than 9 species per meter squared. NB - This criterion is essential for achieving good condition (non-acid grassland types only).		Fail
Score	Moderate – Passing 3/6 criteria	

Table 9. Condition Assessment Table for Moderate Grassland



Figure 5. Herb-rich other neutral grassland located along the southern boundary of the site

4.2.4 h3f – Hawthorn Scrub (26m²)

Hawthorn scrub was recorded within the south-western corner of the application area which was approximately 5m in height and was closely managed on the southern side adjacent to the public footpath. The scrub was mostly unmanaged with an understorey dominated by Common nettle (*Urtica dioica*) and Dog's mercury (*Mercurialis perennis*).

4.2.5 h3h – Mixed Scrub (30m²)

Mixed scrub comprising species Hawthorn, Ash (*Fraxinus excelsior*), Elder and Ivy (*Hedera helix*) was recorded within the south-eastern corner of the application area. The scrub was approximately 6m in height with shade tolerant wild forbs dominating the understorey.

Dense Scrub Condition Assessment		Pass / Fail
1. Habitat is representative of UKHab description (where in its natural range). There are at least three woody species, with no one species comprising more than 75% of the cover (except common juniper, sea buckthorn or box, which can be up to 100% cover).		Fail
2. There is a good age range – all of the following are present: seedlings, young shrubs and mature shrubs.		Fail
3. There is an absence of invasive non-native species (as listed on Schedule 9 of WCA, 1981) and undesirable species make up less than 5% of ground cover.		Pass
4. The scrub has a well-developed edge with scattered scrub and tall grassland and/or herbs present between the scrub and adjacent habitat(s).		Pass
5. There are clearings, glades or rides present within the scrub, providing sheltered edges.		Fail
Score	Poor – Passing 2/5 criteria	

Table 10. Condition Assessment Table for Dense Scrub



Figure 6. Mixed scrub within the south-eastern corner of the application area.

4.2.6 u1b5 – Buildings

A single occupied temporary chalet was recorded to the east of the application area. Further information regarding its suitability of supporting protected species and can be provided within Section 4.3.3 of this report. No condition assessment is present for this habitat type.

4.2.7 Biodiversity Net Gain – Baseline Assessment

The habitats recorded within the application site were calculated to provide a total of:
0.65 Habitat Biodiversity Units and **0.29 Hedgerow Units**

Detailed Results		
Baseline value	Habitat units	0.6536
	Hedgerow units	0.2880
	River units	Zero Units Baseline

Figure 7. Baseline BNG Headline Results

4.3 Fauna

Species legislation is provided in Appendix A.

4.3.1 Amphibians

BBRC returned 2 amphibian records of two species within the search area, including Common frog (*Rana temporaria*) and Common toad (*Bufo bufo*). No records of newts were returned.

No potential GCN breeding habitat such as standing water or ponds were recorded within the site or the recognised 100m zone of influence for the site. Although suitable terrestrial and hibernacula habitat for this species group was recorded to the north of the application site, in the form of understorey and scrub habitat, they are not considered to be present within a reasonable commuting distance from a suitable breeding pond in the wider surrounding. As such, great crested newts are not considered to be a constraint to the development and are not considered further within this report.

The application site may however support suitability to support intermittently occurring common amphibians such as Common frog or Common toad (*Bufo bufo*).

4.3.2 Badger

BBRC returned 5 records for Badger (*Meles meles*) within the 2km search area, the nearest being 0.5km from the application area from the application area.

No setts or other field signs of badgers were identified on the site. It is considered likely that badgers will intermittently pass through the application as part of their natural dispersal patterns. The immediately surrounding habitats, including woodland and farmland with hedgerow and treelined boundaries within a rural environment are optimal habitats to support this species.

4.3.3 Bats

BBRC provided 5 records of bats within the 2km search area from the site, pertaining to common pipistrelle (*Pipistrellus pipistrellus*), soprano pipistrelle (*Pipistrellus pygmaeus*) and common noctule (*Nyctalus noctula*). Each record was within Cawthorne Park with the nearest being approximately 1km from the site.

Two granted Natural England protected species licences relating to bats were returned within 2km of the site on the Magic website. The nearest was approximately 1.35km to the west for the destruction of a common pipistrelle resting place.

Roosting Bats - Trees

All visible trees within and adjacent to the application site were visually assessed for Potential Roosting Features (PRF's). A single mature ash tree (T1) located along the western boundary of the application site was considered to support Low suitability due to the presence of a large wound caused by a fallen limb within the main stem. Additionally, four occlusions were recorded on branches on the southern elevation and two on the northern elevation.



Figures 7 and 7A. Red circles showing PRFs on the northern elevation and split limb above the main stem.

The tree will be subjected to a small crown pruning on the southern side of the tree to allow to reduce the risk of falling limbs. The two branches to be removed do not support any of the potential roosting features as enclosed above, and works will not directly or indirectly impact roosts. It has been agreed with the appointed arboricultural consultant that the works may proceed without the requirement for a soft-felling methodology or ECoW, proving the tree work is limited only to the removal of these two branches.

The remaining trees within the site were considered to hold negligible bat roosting suitability. As such, this ecological receptor is not considered further within this report.

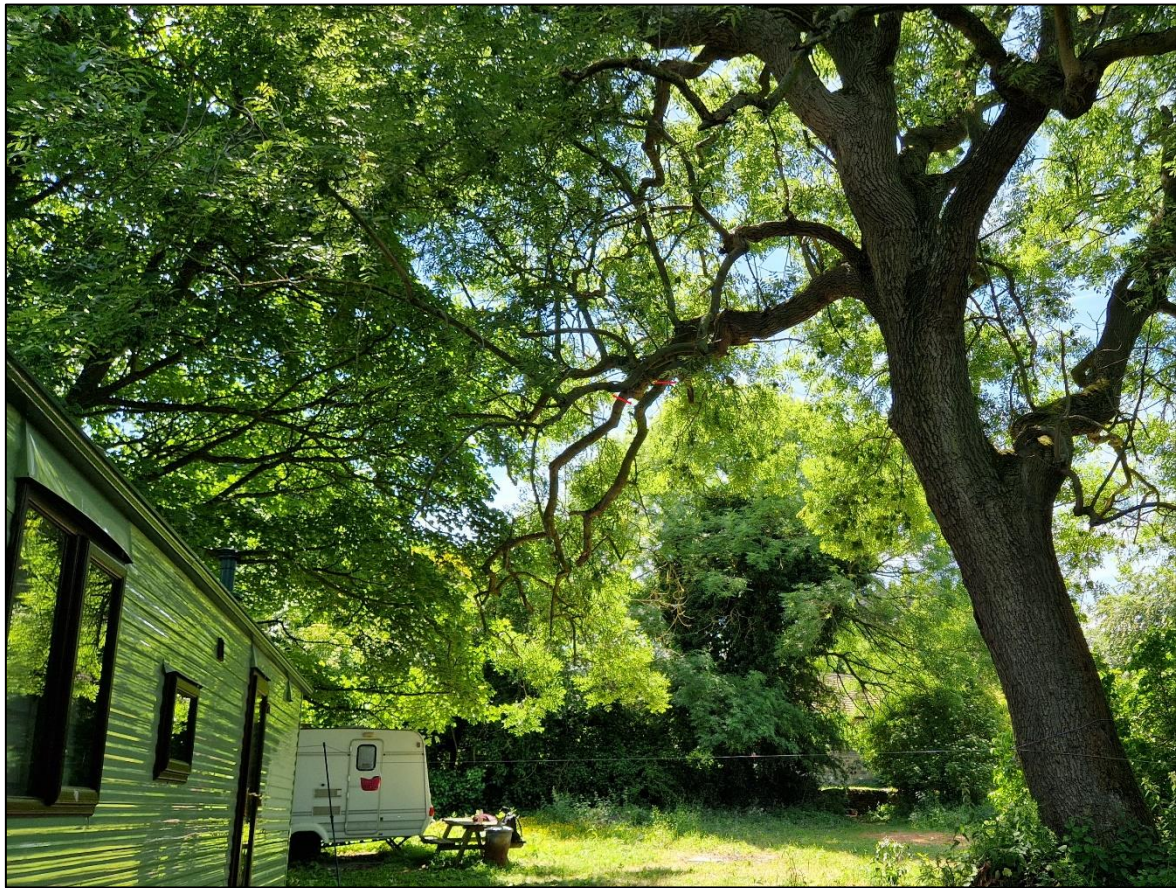


Figure 8. Red lines depict cut sections to allow for the development. Image provided by the appointed tree consultants (AWA Tree Consultants).

Roosting Bats – Buildings and Structures

All buildings within and adjacent to the application site were externally and internally visually assessed for PRFs.

A single building was recorded within the application area, pertaining to a temporary residential chalet. The building was assessed to support Negligible roosting suitability as no external roosting features or access points leading to an internal enclosed space was recorded.

As such, this ecological receptor is not considered further within this report.

Foraging and Commuting Bats

The application site was assessed to support 'Low' suitability to support foraging and commuting bats. The site was positioned along a mature vegetated connective feature generated by the adjacent woodland edge to the west of the site and line of trees along the site's boundaries. Furthermore, the application site offers suitable bat foraging habitat in the form of sheltered areas underneath tree canopies. However, given the relatively limited area of the application site, and ample better or equal habitat recorded in the immediate surroundings, the suitability is reduced.

4.3.4 Birds

BBRC provided 226 individual records for Red and Amber Birds (Birds of Conservation Concern) across 38 species within the 2km search radius.

Three species of birds were recorded within the application site during the assessment, including Woodpigeon (*Palumbus columba*), robin (*Erithacus rubecula*) and blackbird (*Turdus merula*).

No active nesting behaviour or evidence was recorded within the application site. However, the application site did support suitable nesting habitat in the form of dense scrub along the southern boundary of the application boundary.

4.3.5 Invertebrates

BBRC failed to provide records of any invertebrate species listed as a BAP Species or protected under the Wildlife and Countryside Act (1981).

The onsite habitats are likely to support a range of common invertebrate species. However, the lack of diverse habitat mosaic means it is unlikely to support a rare or notable invertebrate population.

4.3.6 Other Terrestrial Mammals

BBRC provided a single record of European hedgehog (*Erinaceus europaeus*) within 2km of the application area, being approximately 1.1km south-west of the site.

No incidental sightings were made and no specific field signs of small mammals were noted during the site walkover.

However, the site provides intermittent cover and some foraging within the scrub for hedgehog and therefore they may occur on site if present in the local area.

4.3.7 Reptiles

BBRC provided no reptile records for the site or the 2km search area.

No reptiles or evidence of presence was identified during the assessment. Although the application site was positioned within a rural environment, the surrounding landscape was dominated by monoculture arable fields or broadleaved woodland, neither being considered conducive to supporting a meta-population of any native reptile species. Given the relatively small scale of the development area and poor suitability of the surrounding environment to support a resident population, the site can be considered negligible to support this species.

4.3.8 Riparian Mammals

No habitats within the application site or zone of influence were considered suitable to support species such as water voles (*Arvicola amphibius*) or otters (*Lutra lutra*). As such, the impact from the development is considered to be negligible, and this species group is not considered further within this report.

5 ECOLOGICAL CONSTRAINTS AND OPPORTUNITIES

5.1 Ecological Constraints

Avoidance, mitigation and/or compensation measures are required for the following constraints. Where ecological receptors are not included, they have been discounted within section 4.3.

5.1.1 Biodiversity Net Gain

Weddle Landscape carried out a BNG Small Sites Metric to support the application (Church of All Hallows, High Hoyland BNG Small Sites Metric – August 2022). The baseline habitats were calculated to provide a total of **0.65 Habitat Biodiversity Units** and **0.29 Hedgerow Units**. The post-development, **0.47 Habitat Biodiversity Units** and **0.29 Hedgerow Units** were calculated.

A total net % change of **-28.28%** was calculated and **0.25 Habitat Biodiversity Units** are required to meet the 10% net gain target.

Given the nature of the proposed development, and limited available land for ecological compensation, it is unlikely the scheme will achieve a 10% gain onsite and offsetting may be required by the local planning authority¹⁰. However, habitat enhancements have been prescribed within Section 5.3 of this report to reduce the net gain deficit in biodiversity units which reflect the Barnsley Biodiversity Policy (BIO1) and supports the Local Biodiversity Action Plan.

Site Name:		Church of All Hallows, High Hoyland		
Sheet Name		Headline Results		
Headline Results				
Headline		BNG Targets Not Met ▲		
Next steps		Scheme alterations or offsite units required		
Total net unit change	Habitat units	-0.1849	▲	
	Hedgerow units	0.0000	✓	
	River units	0.0000	✓	
Total net % change	Habitat units	-28.28%	▲	
	Hedgerow units	0.00%	✓	
	River units	% target not appropriate		✓
Habitats units required to meet target		0.2502		
Hedgerow units required to meet target		0.0288		
River units required to meet target		0.0000		

Figure 9. Baseline and Post-development BNG Headline Results

¹⁰ It should be noted that although reaching 10% BNG would be favourable, it is not mandatory until November 2023. Local biodiversity policies vary greatly from region to region. It is therefore the discretion of the local planning authority reviewer to recommend a compensation or enhancement strategy commensurate to the scheme proposals.

5.1.2 Amphibians

The site is not considered suitable to support a resident population of common frog or common toad given the relatively small scale of the site and distance to suitable breeding ponds. However, it cannot be discounted that individuals may intermittently enter the site. To minimise the risk of killing or injury to amphibians, a precautionary site clearance method will be implemented.

- Any suitable habitat such as brash or log piles will be carefully searched by hand. Any amphibians found during the search will be relocated to an area of retained habitat.
- Trenches or excavations left uncovered overnight will have a suitable means of escape (such as wooden plank).

5.1.3 Trees

Retained trees should be protected in line with BS5837:2012 '*Trees in relation to Design, Construction and Demolition -recommendations*'.

5.1.4 Badger

While no badger setts were identified on site, badgers from the wider area may occasionally be encountered onsite. The following precautionary approach should be implemented:

- A check for badger should be undertaken alongside the scrub clearance and prior to commencement of any development to establish if any badger setts are present and/or been dug in the intervening period.
- Any pipes left uncovered overnight will be capped to prevent any badger getting trapped.
- Trenches or excavations left uncovered overnight will have a suitable means of escape (such as wooden plank).

5.1.5 Bats

Foraging and Commuting Bats

The application site was considered to support 'Low' suitability to support foraging and commuting bats due to the linear onsite mature vegetation connecting with additional suitable bat habitat within the wider surroundings.

The development will see the retention mature vegetation (Treelines and scrub). As such, the development of the site is unlikely to impact foraging and commuting bats in the long-term.

However, artificial lighting during the construction phase of the development and in-use may result in short-term impacts to foraging and commuting individuals.

As such, a sensitive low-level lighting scheme will be prepared by a lighting engineer to ensure no mature vegetative features are subjected to light spill of an unfavourable spectrum wavelength.

5.1.6 Breeding Birds

No active or historic nests were recorded within the application area during the preliminary walkover assessment. However, scrub vegetation habitat to the north and south is considered likely to support nests and breeding, potentially for BoCC Red-List species such as

Greenfinch (*Chloris chloris*) or Sparrow species (*Passer spp.*) during the active periods of the year.

Onsite Reasonable Avoidance Methods (RAMs) should also be followed by all onsite staff during the construction phase of the development. The RAMs will include, but not limited to, the following safe working guidance, in order for the works to proceed in a legal and ecologically sensitive manner:

- Vegetation clearance, building demolition and site clearance activities should only be undertaken outside of the recognised breeding birds' season, which runs between March – September inclusive.
- If this is unachievable a Breeding Birds Check should be carried out by a qualified ecologist within 24hrs prior to the onset of works. If nesting birds are recorded within any vegetation due for removal, the area and surrounding 5m radius of the nest will be protected until the birds have fledged.
- If it is not possible to fully observe or inspect all the vegetation to be cleared, the ecologist will be required to supervise the clearance.

5.1.7 Other Terrestrial Mammals

To minimise the risk of killing or injury to hedgehog a precautionary site clearance method will be implemented.

Any suitable habitat such as brash or log piles will be carefully searched by hand. Any hedgehogs found during the search will be relocated to an area of retained habitat. Trenches or excavations left uncovered overnight will have a suitable means of escape (such as wooden plank).

5.2 Summary of Recommendations

Recommendation	Timescales
Amphibians Reasonable Avoidance Methods (RAMs) to be undertaken by onsite staff	To be secured as an appropriately worded condition of planning
Biodiversity Net Gain Habitat compensation and enhancements provided within Section 5.3 of this report should be carried out.	To be secured as an appropriately worded condition of planning
Badger Reasonable Avoidance Methods (RAMs) to be undertaken by onsite staff	During construction work
Foraging and Commuting Bats A soft-lighting strategy should be detailed by a lighting engineer.	To be secured as an appropriately worded condition of planning
Breeding Birds Pre-commencement check and Reasonable Avoidance Methods (RAMs) to be undertaken.	During construction
Other Terrestrial Mammals Reasonable Avoidance Methods (RAMs) to be undertaken by onsite staff	During Construction

Table 11. Ecological Recommendations

5.3 Ecological Compensation and Enhancement Opportunities

The following ecological enhancements should be incorporated into the proposed development:

- Areas of mature vegetation lining the boundaries of the application site are considered to hold biodiversity value in their own right and should be retained in their current form. Any gaps or breaks within the scrub or mature linear vegetation can be gap filled with heavy standard native trees to create a continuous canopy and increase biodiversity value within the site, commensurate with the Barnsley Biodiversity Policy (BIO1).
- Areas of remaining other neutral grassland within the northern half of the application area should be sown with a shade tolerant wildflower seed-mix including species such as *Geranium spp.*, *Veronica spp.* and *Prunella vulgaris* to attract a range of pollinators to the area. The grassland should be subjected to a single hay cut in late autumn or spring to encourage pollinators to the site area.
- Any proposed new external lighting for the development should be designed to ensure that lights are angled downward and that night-time light levels remain relatively low.
- Wood piles and invertebrate refugia habitats should be placed along the northern boundary of the application site for a range of species.
- A minimum of x2 surface mounted bat boxes (such as the Eco Crevice / Cavity Bat Boxes) should be mounted on the proposed residential unit at a minimum height of 5m, facing the southern or western elevations.
- Suitable bird nesting habitat should be incorporated into the design plans. This should take the form of installing x3 "Swift Boxes" underneath the eaves of the newly constructed residential building **and** x3 generic bird boxes such as 26mm / 32mm and oval hole nest boxes. Each bird box should be positioned on the northern or eastern elevations at a height of no less than 5m from ground level.

5.4 Mechanism to Secure Mitigation and Enhancement

The mitigation measures and enhancement opportunities set out above can be secured through appropriately worded planning conditions as part of any planning consents granted

6 CONCLUSION

This Preliminary Ecological Appraisal has identified a number of ecological constraints as defined within Section 5.1 and 5.2 of this report, and specific avoidance, mitigation and compensation and enhancement measures have been provided.

Each of the identified constraints are able to be remedied by applying the mitigation hierarchy. Avoidance can be applied to amphibians, trees, badgers, breeding birds and hedgehogs by applying onsite Reasonable Avoidance Methods.

Impacts to foraging and commuting bats can be avoided by the production of a soft-lighting strategy devised by a specialist lighting engineer, to be secured via an appropriately worded condition of planning.

Compensation and enhancement opportunities are provided within Section 5.3 which have been prescribed to reduce the net gain deficit and promote positive biodiversity within the application boundary.

Bat and bird box enhancements have been provided within Section 5.3.

APPENDIX A

Species List

Common Name	Scientific Name
Ash	<i>Fraxinus excelsior</i>
Ivy	<i>Hedera helix</i>
Sycamore	<i>Acer pseudoplatanus</i>
Wych elm	<i>Ulmus glabra</i>
Hawthorn	<i>Crataegus monogyna</i>
Elder	<i>Sambucus nigra</i>
Common nettle	<i>Urtica dioica</i>
Dogs mercury	<i>Mercurialis perennis</i>
Common lilac	<i>Syringa vulgaris</i>
Cleavers	<i>Galium aparine</i>
Broadleaved dock	<i>Rumex obtusifolius</i>
Cow parsley	<i>Anthriscus sylvestris</i>
Perennial rye grass	<i>Lolium perenne</i>
Creeping buttercup	<i>Ranunculus repens</i>
Herb robbery	<i>Geranium robertianum</i>
Dandelion	<i>Taraxacum officinale agg.</i>
Wood avens	<i>Geum urbanum</i>
Annual meadow grass	<i>Poa annua</i>
Greater willowherb	<i>Epilobium hirsutum</i>
Bush vetch	<i>Vicia sepium</i>
Red clover	<i>Trifolium pratense</i>
Greater burdock	<i>Arctium lappa</i>
Doves-foot cranesbill	<i>Geranium molle</i>
Ox-eye daisy	<i>Leucanthemum vulgare</i>
Greater plantain	<i>Plantago major</i>

APPENDIX B

Key Species Legislation

Bats

Bats are European Protected Species (EPS) listed on Annex IV of the Habitats Directive 1992 which is transposed into UK law by the Conservation (Natural Habitats &c) Regulations 1994 or “Habitats Regulations” and consolidated within The Conservation of Habitats and Species Regulations 2017. Bats are also protected through Schedules 5 and 6 of the Wildlife and Countryside Act (WCA) 1981 (as amended). Certain species are also listed in Section 41 of the NERC Act 2006, as species which are of principal importance for the conservation of biodiversity in England. A number of Bat species are listed as a Biodiversity Action Plan (BAP) priority species on the UK BAP.

European Otter (*Lutra lutra*)

Otters are an EPS listed on Annex IV of the Habitats Directive 1992 which is transposed into UK law by the Conservation (Natural Habitats &c) Regulations 1994 or “Habitats Regulations” and consolidated within The Conservation of Habitats and Species Regulations 2017. Otters are also a UK BAP priority species and listed as a species of principal importance for the conservation of biodiversity in England under Section 41 of the NERC Act 2006. Otters are also protected through Schedules 5 and 6 of the WCA 1981 (as amended).

European Water Vole (*Arvicola amphibious*)

Water Vole is protected under Schedule 5 of the WCA 1981 (as amended) and is listed as a species of principal importance for the conservation of biodiversity in England under Section 41 of the NERC Act 2006. Water Voles are also listed as a UK BAP priority species.

Eurasian Badger (*Meles meles*)

Badgers are protected in the UK under the Protection of Badgers Act 1992 which protects both the individual animals and their setts. However, habitats used for any other purpose are not afforded any form of protection under this or other legislation. This species is also listed on Schedule 6 of the Wildlife and Countryside Act 1981 (as amended) which outlaws certain methods of taking and killing when this is necessary.

Hazel Dormouse (*Muscardinus avellanarius*)

Hazel Dormouse is an EPS included on schedule 2 of the Habitats Regulations, and on Schedule 5 of the WCA 1981 (as amended). Dormouse is listed as a species of principal importance for the conservation of biodiversity in England under Section 41 of the NERC Act 2006 and is also listed as a UK BAP priority species.

Polecat (*Mustela putorius*)

Polecats are protected under Schedule 4 of the Habitats Regulations and Schedule 6 of the WCA 1981 (as amended). Polecat are also listed as a UK BAP priority species.

Harvest Mouse (*Micromys minutus*)

Harvest mouse is listed as a species of principal importance for the conservation of biodiversity in England under Section 41 of the NERC Act 2006 and is also listed as a UK BAP priority species.

European Hedgehog (*Erinaceus europaeus*)

Hedgehog are listed as a species of principal importance for the conservation of biodiversity in England under Section 41 of the NERC Act 2006 and is also listed as a UK BAP priority species.

Birds

All bird species including their eggs and nests, are protected from harm during the breeding season under the WCA 1981 to varying degrees. Some bird species are also included on Schedule 1 of the WCA 1981 (as amended) and inclusion on this schedule makes it an offence to intentionally or recklessly disturb these birds at, on or near an 'active' nest. A number of birds are listed as species of principal importance for the conservation of biodiversity in England under Section 41 of the NERC Act 2006.

Reptiles

Widespread reptiles; Adder (*Vipera berus*), Grass snake (*Natrix natrix*), Common lizard (*Lacerta vivipara*) and Slow-worm (*Anguis fragilis*) are protected against killing, injuring and sale under UK legislation through their inclusion in Appendix III of the Bern Convention (1979), Schedule 5 of the WCA 1981 (as amended).

Sand Lizard (*Lacerta agilis*) and Smooth snake (*Coronella austriaca*) are also EPS listed on Annex IV of the Habitats Directive 1992 which is transposed into UK law by the Habitats Regulations, and on Schedule 5 of the WCA 1981 (as amended).

All reptiles are listed as UK BAP Priority species and are also listed as a species of principal importance for the conservation of biodiversity in England under Section 41 of the NERC Act 2006.

Amphibians

Widespread amphibians; Smooth newt (*Triturus vulgaris*), Palmate newt (*Triturus helveticus*), Common frog (*Rana temporaria*) and Common toad (*Bufo bufo*) are only protected from sale under Schedule 5 of the WCA 1981 (as amended). Common toad is also listed as a UK BAP Priority species.

Great crested newt (*Triturus cristatus*) and Natterjack toad (*Bufo calamita*) are also EPS listed on Annex II and IV and Annex IV respectively of the Habitats Directive 1992 which is transposed into U.K law by the Habitats Regulations, and on Schedule 5 of the WCA 1981 (as amended). Both are also listed as a UK BAP Priority species and GCN are also listed as a species of principal importance for the conservation of biodiversity in England under Section 41 of the NERC Act 2006.

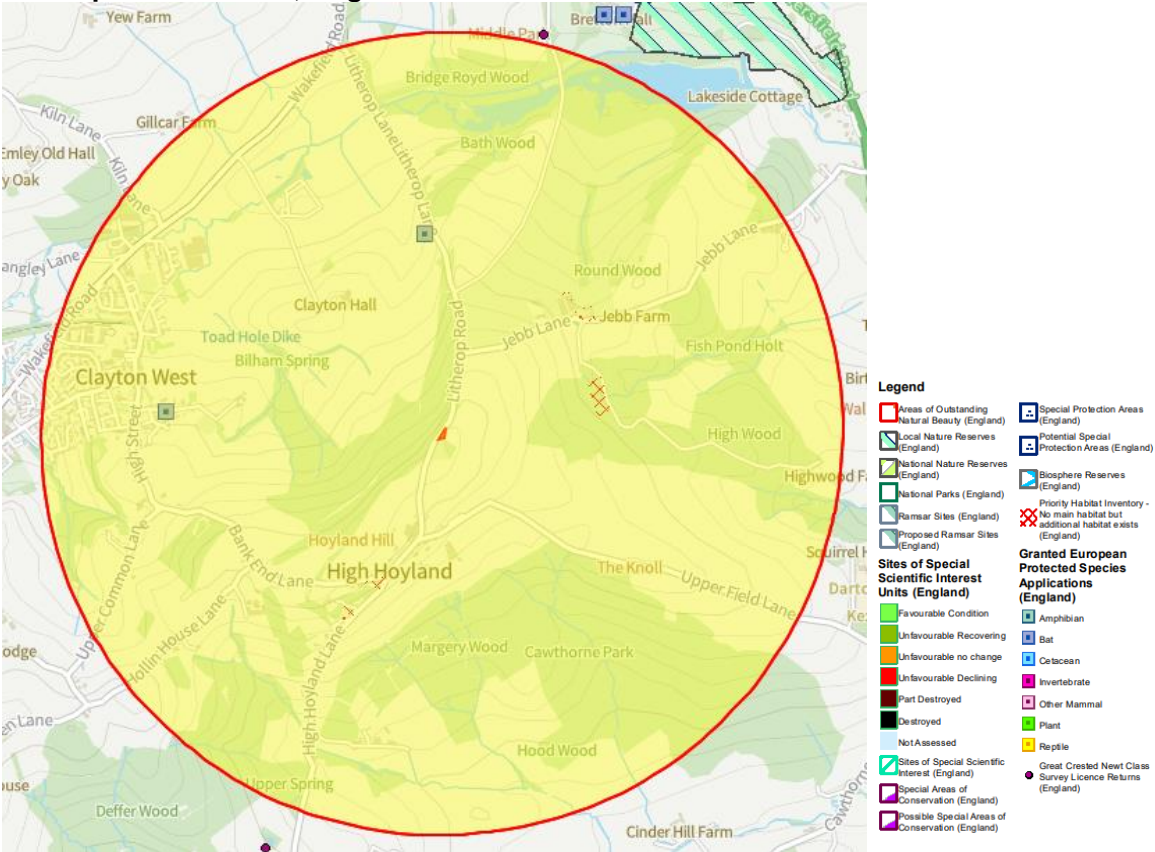
Invertebrates

A large number of British invertebrates are protected under Schedule 5 of the WCA 1981 (as amended). Different species are protected under one, some or all of the parts of Section 9. Hundreds of invertebrate species are of principal importance for the conservation of biodiversity in England under Section 41 of the NERC Act 2006. Similarly, several hundred are also listed as a UK BAP priority species.

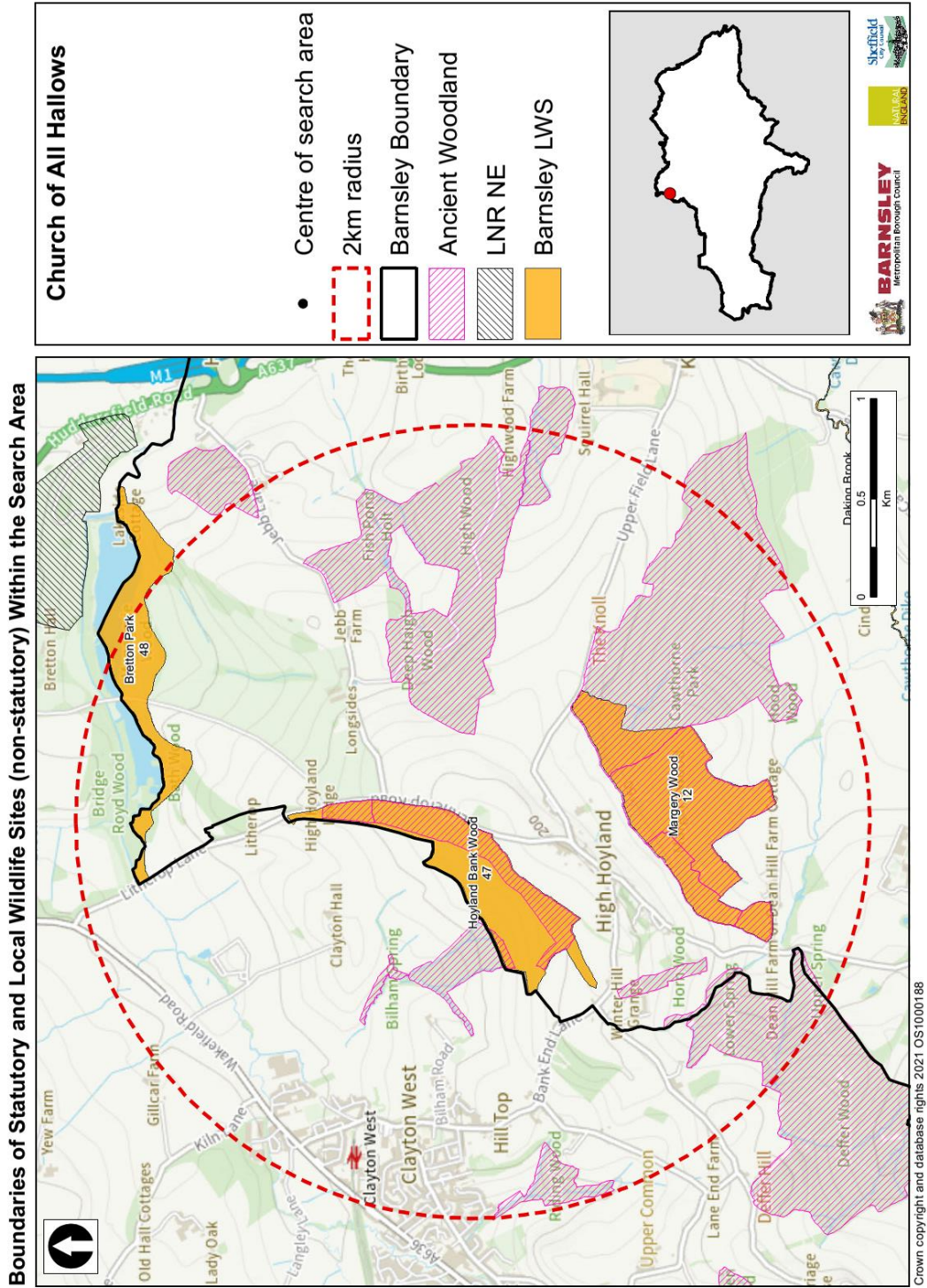
White-clawed crayfish (*Austropotamobius pallipes*)

White-clawed crayfish is listed in Appendix III of the Bern Convention, and Annexes II and IV of the EC Habitats Directive, and is protected under Schedule 5 of the WCA 1981 (as amended) in respect of taking from the wild and sale. White-clawed crayfish is a species of principal importance for the conservation of biodiversity in England under Section 41 of the NERC Act 2006 and is also listed as a UK BAP priority species.

APPENDIX C **Magic Maps, Statutory Land-based Designations, Priority Habitats and EPS** **development licences, August 2022**



APPENDIX D
BBRC Biological Data Records and LWS locations, August 2022



DRAWING – 1444 -01 UK HABS BASELINE SURVEY PLAN

