Glaven Ecology

Barn at The Old Rectory Sculthorpe

Ecological Impact Assessment

Prepared by
Glaven Ecology

on behalf of
Sworders

July 2021

Reference: 2172-GE-Sw

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Contents

Version	Status	Changes	Date	Author
1.1	Draft	-	07/07/2021	Carolyn Smith BSc (Hons), MCIEEM
1.2	Draft	Maps added	10/07/2021	Carolyn Smith BSc (Hons), MCIEEM
1.3	Issued	Reviewed	16/07/2021	Carolyn Smith BSc (Hons), MCIEEM

The data contained within the report are accurate to the best of our knowledge and have been prepared and provided in accordance with the Chartered Institute of Ecology and Environmental Management's Code of Professional Conduct.

The report conforms to the British Standard 42020:2013 Biodiversity – Code of practice for planning and development.

We confirm that any opinions expressed are our best and professional true opinions. This report has been prepared by an ecology specialist and does not purport to provide legal advice.

1 Summary

1.1 Glaven Ecology was commissioned to undertake a Preliminary Roost Appraisal on a barn at The Old Rectory, Creake Road, Sculthorpe, NR21 9NJ. The survey work was completed by Carolyn Smith BSc. (Hons) MCIEEM on 6th July 2021.

1.2 Planning is sought to replace the existing barn with a building which will accommodate an art gallery with artists accommodation.

1.3 The site sits within a SSSI Impact Risk Zones for The River Wensum. However, the proposal does not fall within the categories requiring further consultation with Natural England.

1.4 The barn was wooden framed with a breeze block base and wooden slatted upper walls. The northern end and gable were to corrugated fibre board walls with a small wooden lean-to at the rear.

1.5 The barn was assessed as having negligible potential to support roosting bats.

1.6 No further surveys for protected species are required.

1.7 Mitigation measures recommended include

Timing of works to any site clearance on site.

Installation of replacement barn owl box prior to works starting.

External lights associated with the orangery or cartshed should use warm white lights at <2700k.

1.8 Based on successful implementation of mitigation measures and other safeguards, no significant adverse effects are predicted as a result of the proposals.

1.9 Further enhancements recommended for the site include the installation of bat and bird boxes and a bat friendly planting scheme.

2 Introduction

2.1 Background

2.1.1 Glaven Ecology was commissioned to undertake a Preliminary Roost Appraisal on a barn at The Old Rectory, Creake Road, Sculthorpe, NR21 9NJ. The survey work was completed by Carolyn Smith BSc. (Hons) MCIEEM on 6th July 2021.

2.1.2 This survey and report aim to establish the baseline ecology of the site and its suitability to support any protected species. It assesses potential impacts on these features as a result of the works and advises on the need for further surveys. It sets out the mitigation measures required to ensure compliance with nature conservation legislation and to address any potentially significant ecological effects

2.2 Site Location and Description

2.1.1 The site was located at OS Grid Reference TF 9015 3176 (Appendix 1) and consisted of a wooden framed barn with a breeze block base and wooden slatted upper walls. The northern end and gable were to corrugated fibre board walls with a small wooden lean-to at the rear. The barn was set within a gravel driveway with a small patch of amenity grass to the west and longer grassland to the north and east.

2.1.2 The wider environment was dominated by arable land with the residential housing of Sculthorpe to the southwest. There were scattered pockets of woodland to the north mainly associated with Cranmer Hall and West Barsham Hall. To the south lay Sculthorpe Moor with it's floodplain grazing meadows and lowland fens.

2.3 Project Overview

2.3.1 Planning is sought to replace the existing barn with a building which will accommodate an art gallery with artists accommodation.

3 Legislation

2.3.1 The main piece of legislation relating to nature conservation in Great Britain is The Wildlife and Countryside Act 1981 (as amended). This Act is supplemented by provision in The Countryside and Rights of Way (CRoW) Act 2000 and The Natural Environment and Rural Communities Act 2006 (in England and Wales). This act provides varying degrees of protection for the listed species of flora and fauna, including comprehensive protection of wild birds and their nests and eggs.

3.1.2 UK wildlife is also protected under The Conservation (Natural Habitats &c.) Regulations 1994 (which were issued under the European Communities Act 1972), through inclusion on Schedule 2. In 2010, these Regulations, together with subsequent amendments, were consolidated into The Conservation of Habitats and Species Regulations 2010.

3.2 Bats

2.3.1 All UK bat species are protected under The Conservation of Habitats and Species Regulations 2017 and the Wildlife and Countryside Act 1981 (as amended). This legislation fully protects bats and their breeding sites or resting places, making it an offence to deliberately capture, injure or kill bats, deliberately disturb bats, damage or destroy a bat breeding or resting place.

3.3 Birds

2.3.1 All birds, their nests and eggs are protected by law under Part 1 of the Wildlife and Countryside Act 1981 (as amended).

3.1.2 Certain species (including barn owl *Tyto alba*) are also listed under Schedule 1 of the Wildlife and Countryside Act 1981, which prevents disturbance of the species or its nest and/or eggs at any time with protection by special penalties.

3.4 Great Crested Newt

2.3.1 Great crested newts Triturus cristatus and their habitat (aquatic and terrestrial) are afforded full protection by The Wildlife and Countryside Act 1981 (Section 9, Schedule 5 and as amended) and The Conservation (Natural Habitats & c.) Regulations 1994. It is an offence to:

1) Disturb, injure or kill recklessly a great crested newt.

2) Disturb or destroy recklessly great crested newt habitat (a breeding site or place of shelter).

3.5 Statutory Designated Conservation Sites

2.3.1 National designations such as Sites of Special Scientific Interest (SSSI) and National Nature Reserves (NNR), are afforded statutory protection. SSSIs are notified and protected under the Wildlife and Countryside Act 1981 as amended. SSSIs are notified based on specific criteria, including the general representativeness and rarity of the site and of the species or habitats supported by it.

4 Survey Methods

4.1 Desk Study

2.1.1 Records held on Magic.gov.uk on Designated Sites and granted European Protected Species Licences were reviewed in July 2021 as was the map of Norfolk County Wildlife Sites on data.gov.uk.

2.1.2 The types of features considered within the desk study includes designated sites, habitats and species of principal importance for conservation of biodiversity and protected species.

3.1.2 A quantification of the value of the barn for bats was carried out using the Bat Roost Trigger Index (BRT) (Underhill-Day, 2017). The BRT Index uses a suite of 28 environmental and habitat features recorded during the PRA survey which are known to influence roost selection. This generates a numerical value, from 0 to 1, which is in turn used to assign to a corresponding roost suitability class of either negligible, low, moderate or high potential. This is used as guidance only.

4.2 Field Survey

2.1.1 A brief Phase 1 habitat survey of the site was conducted using the methodology to describe habitats as laid down in NCC (1990) and an assessment made for the presence of protected species.

2.1.2 The survey was undertaken by Carolyn Smith BSc (Hons) (Natural England Level 1 Licence for bats [reference 2018-34461-CLS]; Great Crested Newts [reference 2017-29746-CLS-CLS] and barn owl class licence [reference CL29/00568]) on 6th July 2021.

3.1.2 The weather was dry with 40% cloud cover at the time of the survey, 16°C with a moderate breeze.

4.3 Protected Species

Amphibians and reptiles

2.3.1 The habitat was assessed for reptiles and amphibians and suitable materials were lifted to check for signs of reptiles.

3.1.2 Two ponds within 250m of the barn on site were appraised for its suitability for great crested newts using the Habitat Suitability Index (HSI). The HSI is an indicative tool used to rate the suitability of water-bodies for great crested newts. A total of ten characteristics

and features of water-bodies, such as their size, water quality, shading and vegetation cover are assessed and classified according to prescribed criteria. These scores allow the HSI to categorise water-bodies into one of five ratings which indicate their suitability for occupation by great crested newts. The five categories are excellent, good, average, below average and poor.

3.1.2 One other pond within 250m of the site was subjected to the natural England Rapid Risk Assessment which considers the impacts of the development without any licensed mitigation in place to help assess the risk to great crested newts. This is use as guidance only.

Birds

3.1.2 Evidence of nesting birds was searched for and the site was assessed as to its potential to support nesting birds.

Bats

4.3.5 A general assessment was made of the suitability of site features for roosting, commuting and foraging bats and the likely presence of bats within the site area.

3.1.2 A Preliminary Roost Assessment was completed on the barn and surrounding trees in accordance with the Bat Conservation Trust's "Bat Surveys for Professional Ecologists" (Collins, 2016). A scoring system was applied to the building using the criteria shown in Table 1.

3.1.2 The barn was investigated for evidence of bat use and evaluated for bat roosting potential. The visual search for signs of bats consisted of a slow methodical search both internally and externally for actual roosting bats and their signs:

Droppings on walls, windowsills and floors can be used to identify species;
Scratch marks and staining at roosts and exit holes can be used to identify the presence of bats;
Dense spider webs at a potential roost can often indicate bat absence;
The presence of butterfly wings may be an indication of bat presence.

Table 1: Assessing the potential suitability of a development site for bats (Collins, 2016)

Suitability	Description of roosting habitats	Description of commuting and foraging habitat
Negligible	Negligible habitat features on site likely to be used by roosting bats	Negligible habitat features onsite likely to be used by commuting or foraging bats
Low	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. A tree of sufficient size and age to contain potential roost features but with none seen from the ground or features seen with only very limited roosting potential	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
Moderate	A structure or tree 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)	Continuous habitat connected to the wider landscape that could be used by bats for commuting such as lines of trees and scrub or linked back gardens
High	A structure or tree 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	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

4.3.5 Table 2 shows the criteria used when assessing the likelihood of a protected species being present within the survey area:

Table 2: Criteria considered when assessing the likelihood of occurrence of protected species

Assessment Category	Criteria
Present	Species are confirmed as present from the current survey or historical confirmed records.
High	Habitat and features of high quality for species/species assemblage. Species known to be present in wider landscape. Good quality surrounding habitat and good connectivity.
Moderate	Habitat and features of moderate quality. The site in combination with surrounding land provides all habitat/ecological conditions required by the species/assemblage. Within known national distribution of species and local records in desk study area. Limiting factors to suitability, including small area of suitable habitat, some severance/poor connectivity with wider landscape, poor to moderate habitat suitability in local area.
Low	Habitats within the survey area poor quality or small in size. Few or no records from data search. Despite above, presence cannot be discounted as within national range, all required features/conditions present on site and in surrounding landscape. Limiting factors could include isolation, poor quality landscape, or disturbance.
Negligible	Very limited poor quality habitats and features. No local records from desk study; site on edge of, or outside, national range. Surrounding habitats considered unlikely to support species/species assemblage.

4.4 Evaluation and Assessment

2.1.1 Ecological features are evaluated and assessed with due consideration for the Chartered Institute of Ecology and Environmental Management (CIEEM) 2019 Guidelines for Ecological Impact Assessment (EcIA).

2.1.2 The following the impact magnitude categories and criteria will be used:

Major negative effect – that which has a harmful impact on the integrity of a site or the conservation status of a population of a species within a defined geographical area (e.g. fundamentally reduces the capacity to support wildlife for the entirety of a conservation site or compromises the persistence of a species' population).

Intermediate negative effect – that which has no adverse impact on the integrity of a conservation site or the conservation status of a species' population but does have an important adverse impact in terms of achieving certain ecological objectives (e.g. sustaining target habitat conditions and levels of wildlife for a conservation site or maintaining population growth for a species).

Minor negative effect – some minor detrimental effect is evident, but not to the extent that it has an adverse impact in terms of achieving ecological objectives.

Neutral effect – that which has no predictable or measurable impact.

Positive effect – that which has a net positive impact on an ecological receptor.

4.5 Survey Limitations

2.3.1 The NBIS data search is not an exhaustive record of species within the area and an absence of records does not preclude and absence of species. However, when assessed in conjunction with a field survey, they can contribute to a robust ecological assessment of a site.

5 Baseline Ecological Conditions

5.1 Desk Study

2.3.1 Two Statutory Designated Sites were identified within 2km of the site via the NBIS search and MAGIC maps, and one non-Statutory Designated sites (Table 3, Appendix 2).

3.1.2 The site sits within a SSSI Impact Risk Zones for the River Wensum. However, the proposal does not fall within the categories requiring further consultation with Natural England: *Any residential development over 100 units outside of existing settlements*.

Table 3: Statutory Designated Sites within 2km of development site

Site name and Designation	Site Name and description	Distance from site
Sculthorpe Moor and Meadows County Wildlife site (CWS) 2139	The River Wensum SSSI divides the site, and a significant area of the moor itself forms part of the SSSI. In the south west, the site consists of unimproved, neutral marshy grassland adjacent to the River Wensum.	1300m south
The River Wensum Site of Special Scientific Interest (SSSI) Special Area of Conservation (SAC)	Unusually for a lowland river in England, much of the adjacent land is still traditionally managed for hay crops and by grazing, giving a wide spectrum of grassland habitats some of which are seasonally inundated.	1400m south

3.1.2 There are three Natural England Licence returns for great crested newt presence, all from 2015 within 2km of the site. The grid references given are to 100m. The nearest record is possibly from a pond 170m to the southeast of the site.

3.1.2 There was one record of a granted European Protected Species Mitigation Licence approximately 1700m northwest of site – EPSM2011-2970. This was for the destruction of a breeding and resting place for common pipistrelle, brown long-eared and natterer's.

3.1.2 The Bat Roost Trigger (BRT) assessment concluded that the property offers negligible roost suitability for bats giving a score of 0.48 (Table 4). The full results of this assessment and the 28 roost selection parameters used in the BRT Index are included in Appendix 3.

Table 4: Bat roost trigger index score and roost suitability class highlighted for the building (Underhill-Day, 2017)

> 0.7	**HIGH**	**Three separate survey visits. At least one dusk emergence and a separate dawn re-entry survey. The third visit could be either dusk or dawn.**
0.6 - 0.7	**MODERATE**	**Two separate survey visits. One dusk emergence and a separate dawn re-entry survey.**
0.5 - 0.6	**LOW**	**One survey visit. One dusk emergence or dawn re-entry survey.**
< 0.5	**NEGLIGIBLE**	**No further surveys required. Reasonable precautionary measures applicable.**

5.2 **Protected Species - Bats**

Foraging and Commuting

2.3.1 The habitats immediately around the site were considered to have **moderate** potential to support foraging and commuting bats. The wider environment offered **good** foraging and commuting opportunities especially to the south along the River Wensum.

Visual inspection

3.1.2 The barn was of a breeze block base and fibre board corrugated roof. The majority of the barn had wooden slatted walls with the rear being to corrugated walls (Figures 1 and 2).

3.1.2 The corrugate roof appeared to be in good condition with no lifting of the sheets.

3.1.2 The wooden slats at the front were single ply with wide gaps in between.

3.1.2 The corrugated walls of the rear were tightly sealed but there were gaps under the roofing material at the eaves. On inspection these were wide and blocked at the roof with no cavities noted.

3.1.2 The breezeblock base was in good condition and all the mortar was intact with no cavities at the base.

Figure 1: Western aspect.

Figure 2: Eastern and northern aspects.

3.1.2 Internally the front space of the barn was light and draughty with the front being open to the south via 12 height doors (Figure 3).

3.1.2 The gaps within the wooden slatted walls were more visible from with the barn (Figure 4), letting in more light.

3.1.2 The roof throughout was unlined (Figure 5) and the narrow wooden beams and frame had no suitable splits or cracks for roosting.

5.2.10 The rear of the barn was split into two rooms via ¾ height wooden divide (Figure 6). This space was darker than the front but there were still minimal roosting opportunities noted with the roof being unlined and the narrow beams and frame being of the same nature as the southern space.

5.2.11 The wooden lean-to was a low building with a sloping tin roof (Figure 7). Internally the roof was unlined and the space was low and cramped (Figure 8).

Figure 3: Open fronted barn – viewed from inside

Figure 4: Single ply slatted walls viewed from inside.

Figure 5: Unlined roof throughout.

Figure 6: Rear space with wooden partition and unlined roof.

Figure 7: Lean-to next to entrance to rear rooms.

Figure 8: Internal view of lean-to.

5.2.10 No signs of bats such as droppings or staining were found during the visual inspection of the property. No actual bats were observed.

5.2.10 The barn was assessed as having **negligible potential** to support roosting bats.

5.2.10 There was plenty of access into the barn via the open front but the structure had minimal roosting opportunities with an unlined corrugated roof and single ply slatted wooden walls.

5.2.10 The barn had **negligible potential** to support hibernating bats.

Birds

5.2.10 A barn owl flew out of the northern rooms when the surveyor entered. There were numerous barn owl pellets in the area (Figure 9). There didn't appear to be any suitable ledges for nest making.

5.2.10 There was a barn owl box in the southern room (Figure 10), this has downy feathers under it, but the other feathers in the vicinity suggested it was being used by wood pigeons and not barn owl.

5.2.10 There was also old nesting material in the northern rooms possibly jackdaw.

5.2.10 The likelihood of nesting birds within the site is assessed as **high**.

Figure 9: Barn owl pellets in the rear rooms.

Figure 10: Barn owl box in southern room.

Great crested newts

5.2.10 There were 3 ponds within 250m of the site (Appendix 4).

5.2.11 Pond 1 (see Figure 11) was assessed as offering average suitability for breeding great crested newts. The pond was well shaded by trees and had waterfowl but had a high macrophyte presence.

5.2.10 Pond 2 (Figure 12) was assessed as having poor suitability for breeding great crested newts. The pond was shaded by trees and there were no macrophytes present, the water appeared to of low quality.

5.2.10 The barn was set within a gravel driveway and amenity grassland, with longer grass to the north and west.

5.2.10 The likelihood of these species being present within site boundaries is **low.**

Figure 11: Pond 1.

Figure 12: Pond 2

6 Assessments of Effects

6.1 Site proposals

2.3.1 Proposals at the Site comprise the following:

Replace the existing barn with a new building for an art gallery and artist accommodation.

6.2 Assessment of Likely Significant Effects

Designated Sites

Predicted Effects

No potential pathways of impact are anticipated on any Designated Sites given the scale of the development and the distance to the Designated Sites.

Fauna

Bats

Predicted Effects

2.3.1 The barn had negligible potential to support roosting bats with minimal roosting opportunities noted.

3.1.2 The project will have no impact on commuting or foraging habitat.

3.1.2 It is highly unlikely that bats will be present on site although they may cross close to the site as they commute through the area, therefore neutral effects are predicted.

Mitigation Measures

3.1.2 External lights associated with the new orangery and cart shed should be of a low light level to further minimise impacts on bats that might forage and commute in the vicinity and not light up any tree canopies.

3.1.2 Warm white lights should be used at <2700k. This reduces the ultraviolet component or that has high attraction effects on insects which can lead to a reduction in prey availability for some light sensitive bat species.

Residual Effects

3.1.2 Through the implementation of the above mitigation measures, no significant adverse effects are predicted.

Birds

Predicted Effects

3.1.2 There were birds known to nest in nest box within the barn and other nesting material was observed.

3.1.2 A barn owl was observed roosting in the rear barn area but this did not appear to be a breeding site.

3.1.2 During site clearance there is the risk of killing and injuring nesting birds, damaging their nests or egg and the barn owl roost will be lost. In the absence of mitigation an intermediate adverse effect is predicted at the Local level.

Mitigation Measures

5.2.10 To avoid committing an offence under the Wildlife and Countryside Act 1981 (as amended), any site clearance will take place outside of the bird nesting period (i.e. outside of March to August), or failing that, following confirmation by a suitably qualified ecologist that nesting birds are absent from the habitats to be cleared.

5.2.11 A Barn Owl roosting/nesting box shall be provided within 200 metres of the development site at least 30 days before any development works commence. This provision must be kept free from disturbance and remain in place until at least 30 days after permanent provision has been made. The trees to the southeast of the site would be suitable. The box should face west, so the hole is visible from the field. See Barn Owl Trust for information.

5.2.10 The above could be secured by an appropriately worded planning condition and/or intrinsic design measures.

Residual Effects

5.2.10 Through the implementation of the above mitigation measures, no significant adverse effects are predicted.

Great crested newts

Predicted Effects

5.2.10 The field study and desk study found that it is unlikely that great crested newts would be within the site footprint.

5.2.10 Pond 3 (Appendix 4) which was not accessed during the survey was subjected to the Natural England Rapid Risk Assessment (Natural England, 2020; Appendix) and gave a result of 'Green: Offence Highly Unlikely'.

5.2.10 This indicates that the development activities are of such a type and scale that it is highly unlikely any offence would be committed should the development proceed.

5.2.10 Neutral effects are predicted.

Mitigation Measures

5.2.10 As a precautionary measure the grass to the north and west of the barn should be kept short prior to and throughout the development period by strimming/mowing. This will discourage wildlife from entering this area.

5.2.10 All demolition waste shall be placed directly into a skip so that rubble piles and therefore potential refuge areas for amphibians are not created.

Residual Effects

5.2.10 Through the implementation of the above mitigation measures, no significant adverse effects are predicted.

Summary of Effects

5.2.11 Table 3 below summarises the assessment of effects, including any mitigation and subsequent residual effects.

Table 3: Summary of effects

Ecological Factor	Likely Significant Effect and/or Legal Implication (before mitigation)	Avoidance & Mitigation Measures	Mechanism by which Mitigation is Secured	Residual Effects (after mitigation)
Designated sites	No significant effects	-	-	No significant effect
Amphibians	Neutral effects	Precautionary working measures	-	No significant effect
Birds	Potential damage or destruction of nests and eggs and loss of barn owl roost.	Sensitive timing of works/nest checks by ecologist. Replacement barn owl box.	Legal requirement; secured via planning permission	No significant effect
Bats	Neutral effect	Low level lighting scheme.	-	No significant effect

7 Enhancements

7.1 The Local Planning Authority has a legal duty to consider enhancements on proposed development sites. Furthermore, the National Policy Planning Framework (NPPF) requires planning decisions to aim to promote net gains in biodiversity on development sites.

7.2 Full design plans were not available at the time of writing, but the following enhancements are suggested for the site:

One bat box to be installed on the northern or western aspect of the new build. Boxes should be placed at least 3m high where there is a clear flight path for bats entering and leaving. The 2FN Schwegler bat box or similar would be suitable.

Two bird boxes to be installed onto the new build, one on the eastern aspect and one on the southern aspect. The type will depend on the design of the building:

- For overhanging eaves a swift box or swallow cup can be installed. Suggestions for swallow cup include the Eco Swallow Nest. There are many designs for swift boxes, depending on building materials used such as the Woodstone Build-in Box or the Vivara Brick faced box. When installed the boxes are discreet and do not impact the building's aesthetic.
- For wall mounted boxes the Schwegler Brick nest boxes have a variety of options to choose from.

Install two bird boxes on trees around the site boundaries. Suitable boxes include the Schwegler 1B nest box and the robin and wren FSC nest box.

Consideration should be given to incorporating pollinator and bat friendly planting schemes into any planned landscaping. Suggested plants include:

Bedding Plants	Climbers
Nottingham catchfly *Silene nutans*	European honeysuckle *Lonicera caprifolium*
Night-scented catchfly *S. noctiflora*	Italian honeysuckle *L. etrusca superba*
Bladder campion *S. vulgaris*	Japanese honeysuckle *L. japonica halliana*
Night-scented stock *Matthiola bicornis*	Honeysuckle (native) *L. periclymenum...*
Sweet rocket *Hesperis natronalis*	White jasmine *Jasminium otiicinale*
Evening primrose *Oenothera biennis*	Dogrose *Rosa canina*
Tobacco plant *Nicotiana affinis*	Sweetbriar *R. rubiginosa*
Cherry pie *Heliotropun x hybndurr*	Fieldrose *R. arvensis*
Soapwort *Saponaria officinalis*	Ivy *Hedera helix*

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Appendix 1 – Site Location

Source Google Earth Pro, 2021

Appendix 2 – Statutory and non-Statutory Designated Sites

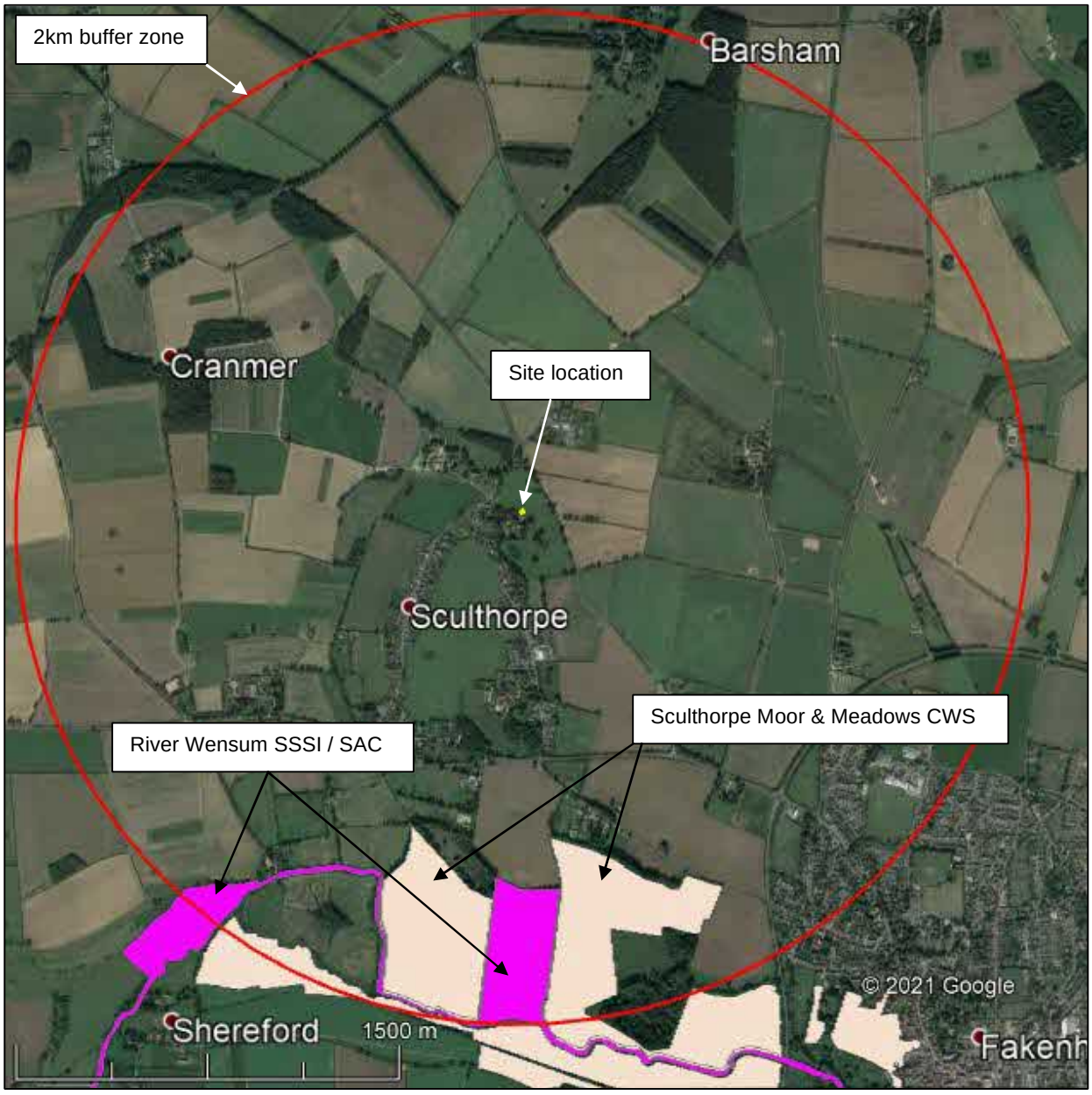

Image source: Google Earth Pro, 2021

Appendix 3 – Bat Roost Trigger Assessment

Trigger Indices	Category	T1 Score
A) Location, habitat and environmental context		
T1: General location	Rural/arable land dominate	0.67
T2: Foraging opportunities within 250 m	Moderate	0.67
T3: Foraging opportunities within 5 km	Good	1
T4: Commuting opportunities	Good	1
T5: Cover in vicinity of structure	Poor	0.33
T6: External lighting in vicinity of structure	Low level	0.67
T7: Number and character of nearby buildings	Mixture of old and new	0.67
T8: Structure/building exposure	Moderate	0.67
B) Exterior features and characteristics of building		
T9: Structure/building age	Intermediate	0.67
T10: Size of Building	Intermediate size	0.67
T11: Main wall construction material	Modern	0.33
T12: Condition of wall/roof pointing/render	Tightly sealed	0.33
T13: Condition of lintel/door frame features	Some gaps,cracks or crevices noted	0.67
T14: Condition of eaves/soffits/bargeboards	Some gaps or cracks noted	0.67
T15: Condition of weatherboarding/cladding	No boarding present	0.2
T16: Condition of lead flashing	No flashing	0.2
T17: Roofing material	Corrugated metal/asbestos/similar	0.33
T18: Bat access potential	Numerous gaps or open-sided structure	1
C) Interior features and characteristics of building		
T19: Character of roof void/roof space	No void or very limited roof space	0.2
T20: Character and condition of roof supports	Tightly sealed modern timbers/supports	0.33
T21: Presence and extent of cobwebbing	Numerous cobwebs in roof space	0.33
T22: Presence and condition of roof lining	Unlined or cavity filled with insulation	0.2
T23: Light levels in roof void/space	Light	0.33
T24: Protection from weather/wind	Well protected	1
T25: Temperature regime	Intermediate	0.67
T26: Level of (human, animal) disturbance	High	0.33
T27: Flight Space	Good	1
T28: Flying Access (Horseshoe bats)	None	0.33
	TRIGGER INDEX SCORE =	0.48
	BAT ROOST SUITABILITY =	NEGLIGIBLE

Appendix 4 – Ponds Map

Source: Google Earth Pro, 2021