Glaven Ecology

Christmas Tree Barn
Mill Lane
Weybread

Ecological Impact Assessment (EcIA)

Prepared by
Glaven Ecology

on behalf of
Parker Planning

February 2022

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Contents

Version	Status	Changes	Date	Author
1.1	Draft	Site visit results added	04/02/2020	Carolyn Smith BSc (Hons), ACIEEM
1.2	Draft	Desk top study results added	06/02/2020	Carolyn Smith BSc (Hons), ACIEEM
1.3	Issued	Reviewed	07/02/2020	Carolyn Smith BSc (Hons), ACIEEM
1.4	Issued	Site revisit & update to report	15/02/2022	Carolyn Smith MSc, BSc (Hons), ACIEEM

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.

Whilst every effort has been made to guarantee the accuracy of this report, it should be noted that animals and plants can migration/establish and whilst such species may not have been located during the survey duration, their presence may be found on a site at a later date.

1 Summary

1.1 Glaven Ecology was commissioned to undertake a Preliminary Ecological Appraisal at Christmas Tree Barn, Mill Road, Weybread, Suffolk, IP21 5TP. The initial survey work was completed by Carolyn Smith BSc. (Hons) MCIEEM on 4th February 2020.

1.2 A second survey visit was undertaken on 11th February 2022 to confirm site conditions.

1.3 It is proposed to convert the existing barn into a residential unit.

1.4 The barn was assessed as having negligible potential to support roosting bats with minimal roosting opportunities noted. No signs of bats were observed during either survey visit.

1.5 On the second survey visit wrens were observed flying in and out of the vegetation growth on the barn, which offers suitable habitat for nesting.

1.6 The pond on site was assessed as having below average suitability for great crested newts.

1.7 No further surveys for protected species are required.

1.8 Mitigation measures recommended include:

- External lights associated with the new property should use warm white lights at <2700k.
- Sensitive timing of works.
- Non-licenced avoidance techniques to avoid potential impacts on great crested newts.

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

1.10 Enhancement suggestions include the installation of bird boxes and a bat box as well as a pollinator friendly planting scheme.

2 Introduction

2.1 Background

2.1.1 Glaven Ecology was commissioned to undertake a Preliminary Ecological Appraisal at Christmas Tree Barn, Mill Road, Weybread, Suffolk, IP21 5TP. The survey work was completed by Carolyn Smith BSc. (Hons) MCIEEM on 4th February 2020.

2.1.2 The survey and report aim to describe how the site supports and is used by protected species such as bats, birds, reptiles and great crested newt. It assesses potential impacts on these species as a result of the works and advises on the need for further surveys or mitigation strategies.

2.2 Site Location and Description

2.2.1 The proposed development site was located at OS Grid Reference TM 2480 7322 (Appendix 1 – Site Location) and comprised of a wooden constructed barn with corrugated metal roof. The ownership boundary of the site encompasses approximately 2.6Ha of land with the barn at the southern end of the site. A semi mature plantation woodland dominated the northern section of the site with other mature trees around the eastern boundary. There was a pond to the north of the barn.

2.2.2 The surrounding area was dominated by arable fields with Weybread lake and fishing ponds to the east. There were pockets of broadleaved woodland scattered throughout the surrounding area, specifically to the west and east. There is an extensive area of floodplain grazing marsh to the north, associated with the River Waveney.

2.3 Project Overview

2.3.1 It is proposed to convert the existing barn into a residential unit.

3 Legal Protection

3.1.1 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.

3.1 Badgers

3.1.1 Badgers are protected under the Protection of Badgers Act 1992. Under the Act, it is a serious offence to kill, injure, interfere or take a badger. It is also an offence to damage or interfere with an actively used sett unless a licence is obtained.

3.2 Bats

3.2.1 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

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

3.4 Great Crested Newt

3.4.1 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 Reptiles

3.5.1 Reptiles are all given limited legal protection under part of Section 9 (1) and all of Section 9 (5) of the Wildlife and Countryside Act 1981 (as 1.1.1amended). This means that it is an offence to intentionally kill, injure and offer for sale.

3.6 Statutory Designated Conservation Sites

3.6.1 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

4.1.1 Records held on Magic.gov.uk on Designated Sites and granted European Protected Species Licences were reviewed in February 2020 and February 2022.

4.1.2 A data search of 2km around the site (Appendix 2) was conducted by Suffolk Biodiversity Information Service (SBIS) and Norfolk Biodiversity Information Service (NBIS) in order to gain local records of Species of Conservation Concern and information on proximate designated sites (including County Wildlife Sites).

4.1.1 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.

4.2 Protected Species

4.2.1 The survey was undertaken by Carolyn Smith MSc, BSc (Hons) MCIEEM (Natural England Level 1 Licence for bats [reference 2018-34461-CLS]; Great Crested Newts [reference 2017-29746-CLS-CLS) on 4th February 2020, with a further site visit on 11th February 2022.

Amphibians and reptiles

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

4.2.3 The Habitat Suitability Index (HSI) was used to assess accessible ponds and water bodies within 250m of the site for their potential to support great crested newts (Oldham *et al* 2000). Details of the scoring system are shown in Table 1.

Table 1: Habitat Suitability Index values

HSI	Pond suitability
< 0.5	Poor
0.5 – 0.59	Below average
0.6 – 0.69	Average
0.7 – 0.79	Good
> 0.8	Excellent

Badger

4.2.4 The habitats on site and in the immediate surrounding area were assessed for their potential to support badgers.

Bats

4.2.5 A Preliminary Roost Assessment was completed on the barn. The survey work was completed 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 2.

4.2.6 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 2: 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

Birds

4.2.7 On-site habitats were assessed for their potential to support breeding (nesting) birds. This consisted of a methodical search for actual nesting birds or their signs.

4.2.8 Table 3 shows the criteria used when assessing the likelihood of a protected species being present within the survey area:

Table 3: 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.

4.3 **Evaluation and Assessment**

4.3.1 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).

4.3.2 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.

4.4 Survey Limitations

4.4.1 The SBIS/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.

4.4.2 The survey was completed during the sub-optimal survey period for undertaking botanical surveys thus limiting the identification of ground flora species.

4.4.3 One pond within 250m was unavailable to survey during the site visits. However, this was subjected to the Natural England Rapid Risk assessment tool and it was not thought to be a significant limitation to the conclusions of the report.

5 Baseline Ecological Conditions

5.1 Designations

5.1.1 No Statutory Designated Sites were identified within 2km of the site on MAGIC Maps and the SBIS/NBIS data search.

5.1.2 The site sits within an SSSI Impact Risk Zone for Gawdyhall Big Wood (4.4km north). However, it does not fall into the categories requiring further consultation with Natural England, in that it is not an infrastructure project.

5.1.3 Three non-statutory designated sites were identified by the SBIS data search (Table 4).

Table 4: Non-statutory Designated Sites within 2km of development site

County Wildlife Site name	Site description	Closet point to site
Dale Pugh - 62	This site comprises a number of different semi-natural habitats. The northern end is colonised by young hawthorn scrub. The scrub together with dense hedges which enclose the site provide important habitat for nesting birds.	1500m south
Weybread Pits – 131	Weybread Pits are of considerable ornithological importance. In Summer, they support a significant population of breeding great crested grebes. In Winter, pochard and tufted duck occur in good numbers.	1500m north
River Waveney (sections) – 88	Many stretches of the River Waveney are of conservation value, however five sections have been selected as being of particular importance for aquatic wildlife. These sections are colonised by a species-rich aquatic flora	1900m northwest

5.2 Protected Species

Badgers

5.2.1 There were no badger records within 2km of the site on either the SBIS or NBIS data searches.

5.2.2 The site is not suitable for badger sett creation and no signs of badgers were observed. The likelihood of badgers being present on site is **negligible**.

Bats

5.2.3 There are no records of a granted European Protected Species Mitigation Licence within 2km of the site.

5.2.4 There were 56 records of bats within 2km of the site all of which were focused to the west and north of the site, many records associated with the area around the River Waveney and Weybread Pits 1.5km to the north.

5.2.5 There were 8 species recorded, most notably two records of Barbastelle *Barbastella barbastellus* and 3 records of Natterer's *Myotis nattereri.*

5.2.6 The habitats immediately around the site were considered to have **moderate** potential to support foraging and commuting bats. The wider environment offered **high** foraging and commuting potential.

5.2.7 The barn to be converted is a single-storey, single-pitch roof structure (Figures 1 and 2). It was of wooden construction with a corrugated sheet roof on a concrete base.

5.2.8 The corrugated roof was in good condition (Figure 3) and there were no gaps or raised areas between the sheets. There were gaps at the bottom of the sheets between the walls allowing access into the barn.

5.2.9 The walls of the barn were of large wooden panels. These were well sealed and in relatively good condition, with no warping or cracking present.

Figure 1: The barn – western aspect (04.02.2020).

Figure 2: The barn (11.02.2022).

Figure 3: The barn and roof – eastern aspect.

5.2.10 Internally the barn was clear (Figure 4), with only a few items stored, and all surfaces were available to survey.

5.2.11 The corrugated roof was unlined and the gaps at the end of the sheets above the walls were clear to see (Figure 5).

5.2.12 The wooden beams and structural posts were all in good condition with no splits or cracks offering roosting opportunities. There was heavy cobwebbing around the joins of the beams and posts.

5.2.13 Some of the internal walls were unlined and only single panelling, whereas other areas had an extra lining of wooden panels (Figure 6). In both cases the panelling was well fitted and sealed. There was heavy cobwebbing present.

Figure 4: The barn – internal view.

Figure 5: Light coming through the gap between the roof and the walls.

Figure 6: The internal wall structure.

5.2.14 The barn was assessed as having **negligible** potential for bats with the structure being well sealed with minimal roosting opportunities noted.

5.2.15 No signs of bats including droppings, urine staining were observed during either survey. No actual bats were found.

Birds

5.2.16 There are 544 bird records within 2km of the site, the majority of which are waterfowl from the Waveney Pits area. The closet record of a Schedule 1 bird was a barn owl, 500m south of site.

5.2.17 There was moderate bird activity across the site, associated with the boundary trees.

5.2.18 There was one hole in the barn panels where blue tits have previously been observed nesting (as per comms with client).

5.2.19 During the second survey visit a pair of wrens were seen flying in and out of the vegetation growth on the western aspect, which offers good habitat for nesting.

5.2.20 The likelihood of nesting birds within the work area is assessed as **high**.

Great crested newts

5.2.21 There were no class licence returns for great crested newt presence within 2km of the site.

5.2.22 There was one record of great crested newts *Triturus cristatus* within 2km of the site. The record is 700m to the west of the site across two roads and residential housing which would act as a possible barrier to dispersal.

5.2.23 There were 7 ponds within 250m of the barn (Appendix 3). Pond 1 was within the site boundary. Ponds 2,3 and 4 to the east were used as a fishery. Pond 5 was to the west of the barn in a neighbouring property. Ponds 6 and 7 were within farmland to the south and west.

5.2.24 Pond 1 (Figure 7) was assessed as offering below average suitability for breeding great crested newts (Appendix 4). The pond was of poor water quality, being heavily silted and lined with a thick layer of leaf litter. The pond dries out for a period every summer (as per comms with the client). On the first visit the pond was heavily shaded by scrub and trees. By the second visit the vegetation at the side of the pond had been cleared.

5.2.25 Pond 2 (Figure 8), 3 and 4 were used as fisheries and all had a waterfowl presence at the time of the survey. Each of these ponds was assessed as having poor suitability for great crested newts.

5.2.26 Pond 5 (Figure 9) was in the neighbouring garden and whilst shaded by trees it was assessed as having average suitability.

5.2.27 Pond 6 (Figure 10) was on the boundary of an arable field and the B1116 road. It was heavily shaded by trees and had waterfowl present at the time of the survey. It was assessed as having below average suitability for great crested newts.

5.2.28 The amenity grass around the barn offered sub-optimal habitat for the terrestrial phase of this species, although the scrub and trees on site did provide some suitable refuge, but these will not be impacted on by the proposed barn conversion.

Figure 7: Pond 1 (11.02.2022)

Figure 8: Pond 2.

Figure 9: Pond 5.

Figure 10: Pond 6.

5.2.29 The pond on site is moderately well connected to other ponds and suitable habitat to the west. The barn sits within an area of amenity grassland and bare ground/gravel and species records in the are low. The likelihood of these species being present within the working area is **low.**

Reptiles

5.2.30 The trees and scrub to the north of the barn were suitable for reptiles to forage and rest. However, these areas will not be impacted by the works to convert the barn

5.2.31 The area around the barn was unsuitable for this species being of gravel and bare ground along with amenity grassland of a poor structure for reptiles.

5.2.32 The likelihood of these species being present within the working area of the site is **negligible**.

6 Assessment of Effects

6.1 Site proposals

6.1.1 proposed to convert the existing barn into a residential unit utilising an existing accessway.

6.2 Assessment of Likely Significant Effects

Designated Sites

Predicted Effects

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

Habitats and Flora

Predicted Effects

6.2.2 The grassland to the north and east of the barn is of low botanical and ecological importance providing little in the way of foraging habitat for wildlife. It has a low herb presence making it poor foraging for pollinators and invertebrates.

6.2.3 The gravel access and area to the west of barn is of sub-optimal habitat for wildlife.

6.2.4 The footprint of the structure will not be changing.

6.2.5 No significant adverse effects are predicted.

Fauna

Badgers

Predicted Effects

6.2.6 There was no suitable habitat for setts and foraging opportunities were limited. No significant adverse effects or legal infringements are predicted.

Bats

Predicted Effects

6.2.7 There was negligible roost potential on site. However, low numbers of commuting bats may cross the site or exploit site boundaries therefore neutral effects are predicted.

Mitigation Measures

6.2.8 External lights associated with the conversion 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.

6.2.9 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

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

Birds

Predicted effects

6.2.11 Blue tits have previously been observed using a hole in the wood panelling on the southern end of the barn and wrens were seen within the vegetation on the western aspect.

6.2.12 During vegetation clearance there is the risk of killing and injuring nesting birds, damaging their nests or eggs, as a result of vegetation clearance.

6.2.13 An intermediate adverse effect is predicted at the Local level.

Mitigation Measures

6.2.14 To avoid committing an offence under the Wildlife and Countryside Act 1981 (as amended), vegetation 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.

Residual Effects

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

Great crested newts

Predicted effects

6.2.16 The pond on site was assessed as having below average suitability and will be retained throughout the project and the land use around the pond will be unchanged.

6.2.17 The working area of the barn is within poor habitat for this species and any disturbance of the amenity grassland would be of a temporary nature. The footprint of the barn will not be changing and there will be no adverse impact on great crested newts**.**

6.2.18 A rapid risk assessment on pond 7 (not accessible for survey) gave a result of 'Green: Offence highly unlikely'. This indicates that it is highly unlikely any offence would be committed should the development proceed.

6.2.19 The one record of great crested newt presence (700m away) fell beyond the normal dispersal range of great crested newts; therefore a minor negative effect is predicted at the Local level.

Mitigation Measures

6.2.20 Following Natural England (2022) guidelines it is assessed as proportionate to allow the works to proceed under a precautionary working method:

> *Many potentially licensable activities can be avoided by careful planning of the development combined with simple precautionary measures. In many cases, adopting such an approach may mean that no licence is required (as no offence would be committed).*

6.2.21 Machinery and equipment must be stored on raised pallets or skips to the west of the barn on the existing bare ground.

6.2.22 No heavy plant machinery should be used on the grass to the east of the barn.

6.2.23 All waste should be stored in skips prior to removal from site.

6.2.24 All excavations should be covered / back filled each evening to prevent foraging or commuting amphibians from falling in and becoming trapped. If this is not possible then an escape ramp – made from earth or wooden sticks – will need to be placed within each excavation.

Residual Effects

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

Reptiles

Predicted Effects

6.2.26 There are some sheltering opportunities on site but foraging is limited and it is assessed that the mitigation put in place for amphibians will also benefit reptiles.

6.2.27 As such no significant adverse effects or legal infringements are predicted.

Summary of Effects

6.2.28 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	Residual Effects (after mitigation)
Designated sites	No significant effects	-	No significant effect
Habitats and flora	No significant effects	-	No significant effect
Badgers	No significant effects	-	No significant effect
Bats	Neutral effect	Low level lighting scheme.	No significant effect
Birds	Intermediate negative effect.	Sensitive timing of works/nest checks by ecologist	No significant effect
Great crested newts	Minor negative effect	Good working practices	No significant effect
Reptiles	No significant effects	-	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 plans were not available at the time of writing, but where suitable the following enhancements are suggested for the site:

- Install one bat box onto the southern gable end of the converted barn. Something similar to the Beaumaris Bat Box would be suitable.
- Two bird boxes to be installed on nearby suitable trees. Something similar to the Schwegler sparrow terrace or the Vivara Woodstone nest box would be suitable.
- The site would benefit from some wildflower planting schemes to increase the foraging opportunities around the site for bats and pollinators. Suggested plants include:

Bat Friendly Planting Suggestions	
Bedding Plants	
Nottingham catchfly	*Silene nutans*
Night-scented catchfly	*S. noctiflora*
Bladder campion	*S. vulgaris*
Night-scented stock	*Matthiola bicornis*
Sweet rocket	*Hesperis natronalis*
Evening primrose	*Oenothera biennis*
Tobacco plant	*Nicotiana affinis*
Cherry pie	*Heliotropun x hybndurr*
Soapwort	*Saponaria officinalis*
Climbers	
European honeysuckle	*Lonicera caprifolium*
Italian honeysuckle	*L. etrusca superba*
Japanese honeysuckle	*L. japonica halliana*
Honeysuckle (native)	*L. periclymenum...*
White jasmine	*Jasminium otiicinale*
Dogrose	*Rosa canina*
Sweetbriar	*R. rubiginosa*
Fieldrose	*R. arvensis*
Ivy	*Hedera helix*
Bramble	*- many species*
Large trees, small trees and shrubs	
Oak	*Quercus robur & Q. petrea*
Ash	*Fraxinus excelsior*
Silver birch	*Betula pendula*

Field maple	*Acer campestre*
Hawthorn	*Crataegus monogyna*
Alder	*Ainus glutinosa*
Goat willow	*Salix caprea*
Guelder rose	*Viburnum opulus*
Hazel	*Coryllus avellana*
Blackthorn	*Prunus spinosa*
Elder	*Sambucus nigra*
Buddleia	*davidii*
Rock plants for walls	
Ivy-leaved toadflax	*Cymbana muralis*
Wall pennywort	*Umbilicus rupestris*
Stonecrop	*Sedum acre bertianum*

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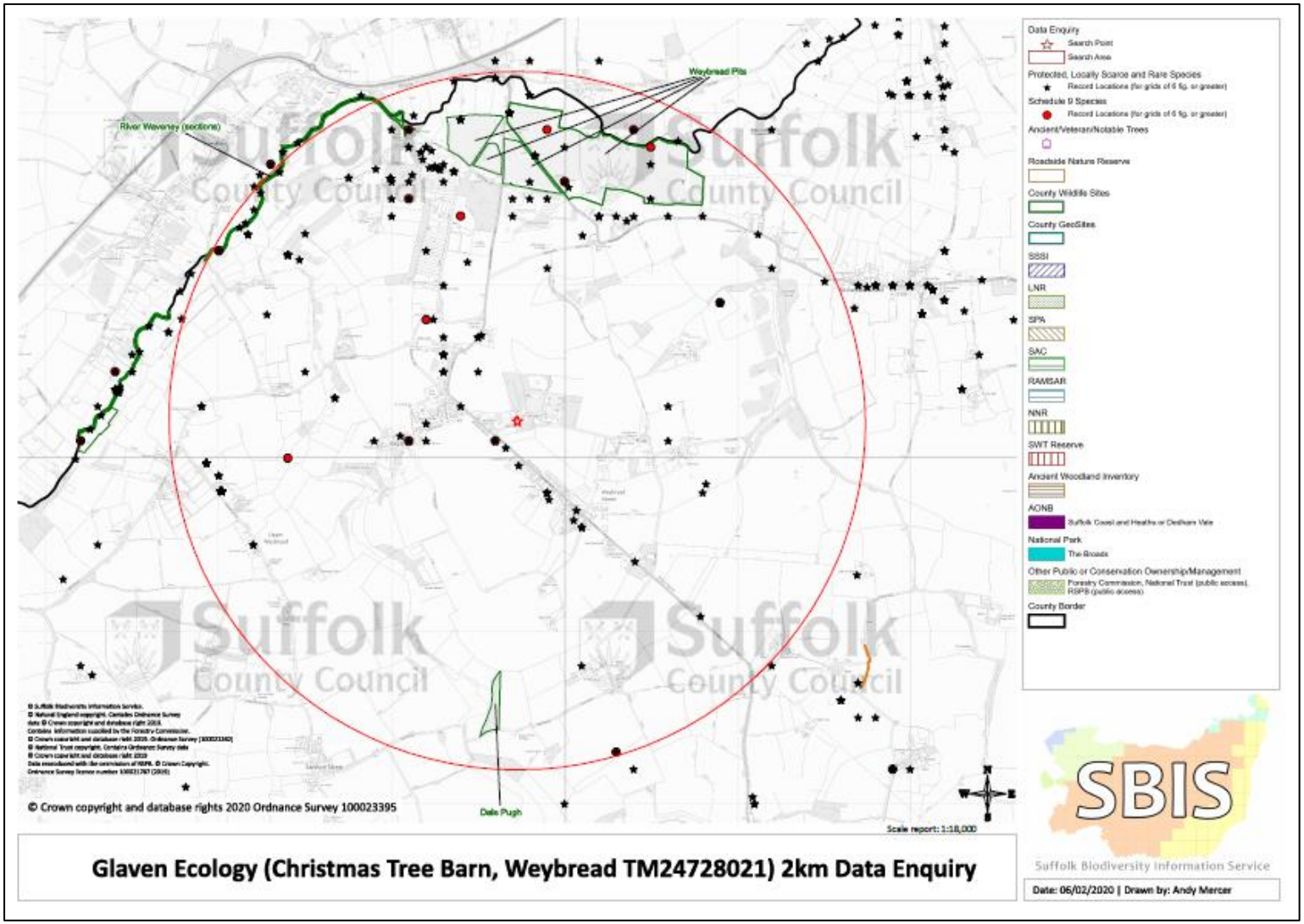
Appendix 1 – Site Location

(Source: Google Earth Pro: 2022)

Appendix 2 – SBIS Map



Appendix 3 – Pond Locations

(Source: Google Earth pro, 2022)

Appendix 4 – Pond HSI assessment

Pond HSI scores:

HSI categories	Pond 1	Pond 2	Pond 3	Pond 4	Pond 5	Pond 6
SI1 – Location	1	1	1	1	1	1
SI2 - Pond area	0.1	0.8	0.8	0.5	0.4	0.2
SI3 - Pond drying	0.1	0.9	0.9	0.9	0.5	0.5
SI4 - Water quality	0.67	0.67	0.67	0.67	0.67	0.33
SI4 - Shade	0.8	1	1	1	1	0.6
SI6 - Fowl	1	0.01	0.01	0.01	0.67	0.67
SI7 - Fish	1	0.01	0.01	0.01	1	1
SI8 - Ponds	1	1	1	1	1	1
SI9 - Terrestrial habitat	1	0.67	0.67	0.33	0.67	0.67
SI10 - Macrophytes	0.8	0.5	0.6	0.5	0.4	0.3
HSI score	**0.56**	**0.33**	**0.34**	**0.29**	**0.69**	**0.55**
Suitability score	**Below average**	**Poor**	**Poor**	**Poor**	**Average**	**Below Average**

HSI Score	Pond Suitability
< 0.50	Poor
0.50 - 0.59	Below average
0.60 - 0.69	Average
0.70 - 0.79	Good
> 0.80	Excellent