

WILD FRONTIER ECOLOGY

Triangle Wood, Herringswell



Ecology Report

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The data which we have prepared and provided is accurate, and has been prepared and provided in accordance with the CIEEM's Code of Professional Conduct. We confirm that any opinions expressed are our best and professional bona fide opinions.



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



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1. Non-technical Summary

Wild Frontier Ecology Ltd. (WFE) was commissioned by Hollins Architects to undertake an Ecological Assessment of a site at Triangle Wood, Herringswell, Bury St Edmunds IP28 6SS. The proposal is for the change of use of the building from a residential dwelling into a children's nursery, with an additional car park and footpaths. A site visit was undertaken on 23rd September 2021 to complete an Extended Phase 1 Habitat Survey and pond appraisal. The site is a mix of amenity and poor semi-improved grassland with small areas of woodland and three buildings in current use. There is not expected to be any external renovation to the buildings, and alterations to the grounds will be minimal. Opportunities for habitat enhancement have been included.

There is one pond located within a 250-metre buffer of the site, adjacent to the main building. During the initial site visit this pond was appraised for its suitability to support Great Crested Newts (GCN). The pond scored as below average habitat for GCN and is expected to be retained; therefore no further surveys are required and no impact to GCN is predicted.

The grassland in the northern paddock may be suitable for reptiles although the occurrence in the local area is low. Best practice methods are advised to ensure there will be no impact to reptiles from the creation of the footpaths.

The trees do provide habitat for nesting birds, as do areas of scrub on site, and mitigation is advised. Hedgerows, trees and other vegetation on site will be retained where possible. Should removal of woody vegetation be required, for example for the creation of the car park, this will be done outside of the main nesting bird season (1st March - 31st August) or vegetation will be inspected for nests prior to removal. If any trees or hedgerows are to be removed, these will be replaced by planting native trees.

There are not expected to be any impacts to designated nature conservation sites as a result of the change of use. However, given that the site falls within the 1.5km Constraints Zone around Breckland SPA, there is a need to provide evidence that stone curlews will not be adversely affected. This is addressed in the accompanying Habitats Regulations Assessment (HRA).

Enhancement advice is provided and where this is followed the site has the potential to provide net benefits to local wildlife in the long-term.



2. Background

2.1 Brief

WFE was commissioned by Hollins Architects to undertake an Ecological Assessment of a site at Triangle Plantation, Herringswell, Suffolk IP28 6SS (centred on grid reference TL 7091 6963, Figure 1). The proposal will involve a change of use of the buildings from a residential dwelling into a children's nursery and the addition of extra car parking facilities and footpaths (Figure 2).

Initial surveys of the site were conducted on 23rd September 2021, including an appraisal of the adjacent pond for its potential to support GCN.

2.2 Report Objectives

The purpose of this ecological report is to describe the habitats, protected and valued species potential, any designated nature conservation sites, and any other ecological issues within the potential zone of influence of the proposal. This has allowed for an ecological assessment of the proposal to be completed. Avoidance measures, mitigation, compensation and ecological enhancements are specified with the intention of achieving net gain as specified within the National Planning Policy Framework (NPPF).

2.3 Basis for Assessment

This assessment is based on drawings dated July 2021 provided by Parker Planning.

Figure 1: Site location (marked with a star)



Figure 2. Proposal



3. Relevant Legislation and Policy

3.1 Statutory and Non-statutory Site Designations

3.1.1 European Site Designations

The European Council Directive on the Conservation of Natural Habitats and of Wild Fauna and Flora (92/43/EEC) as amended directs the designation of important wildlife sites through the European Community as Special Areas of Conservation (SACs) and gives statutory protection to habitats and species listed in the Directive as being threatened or of community interest. Sites identified as candidate SAC (cSAC) are provided with the same level of protection as SAC.

Annex I of 92/43/EEC as amended lists habitat types which are regarded as being of European importance. Included within these are a number of 'priority habitat types' which are habitats regarded as being in danger of disappearance and whose natural range falls broadly within the European Union. This European law had been transposed into UK legislation by The Conservation (Natural Habitats) &c Regulations 1994, now replaced by the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019.

Habitats of European-wide importance for birds are listed under the EC Wild Birds Directive (79/409/EEC) as amended. Habitats designated under this Directive are notified as Special Protection Areas (SPAs) and are identified for holding populations > 1% of the reference population as defined in Appendix 4 of the SPA review of bird species listed in Annex 1 of the same Council Directive. Sites identified as potential SPA (pSPA) are provided with the same level of protection as SPA. This has also been transposed into UK legislation by the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019.

Wetlands of International Importance are designated under the Ramsar Convention.

3.1.2 National (UK) Site Designations

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

3.1.3 Non-Statutory County Site Designations

Local authorities may designate certain areas as being of local conservation interest. The criteria for inclusion may vary between areas. Most individual counties have a similar scheme; within Norfolk such sites are designated as County Wildlife Sites (CWS). Designation of such sites does not itself confer statutory protection, but they are a material consideration when planning applications are being determined.

3.2 Species Designation and Protection

3.2.1 Bats

All bat species are listed under Schedule 2 of the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019. Bats and their roosts also receive protection from disturbance from by the Wildlife and Countryside Act 1981 (as amended). This protection extends to both the species and roost sites. It is an offence to kill, injure,

capture, possess or otherwise disturb bats. Bat roosts are protected at all times of the year (making it an offence to damage, destroy or obstruct access to bat roosts), regardless of whether bats are present at the time.

3.2.2 Badgers

The Protection of Badgers Act 1992 makes it unlawful to knowingly kill, capture, disturb or injure an individual badger *Meles meles*, or to intentionally damage, destroy or obstruct an area used for breeding, resting or sheltering by badgers (i.e. a sett).

3.2.3 Birds

All bird species are protected under the Wildlife and Countryside Act 1981 (as amended). This prevents killing or injuring any bird or damaging or destroying nests and eggs. Certain species (including barn owl *Tyto alba*) are also listed under Schedule 1 of the Wildlife and Countryside Act 1981 (as amended), which prohibits intentionally or recklessly disturbing the species at, on or near an 'active' nest.

The British Trust for Ornithology (BTO) lists Birds of Conservation Concern (BoCC), which fall into three categories: Red-listed - species of high concern; Amber-listed - species of medium concern; and Green-listed - species of lower concern¹. Species are placed on these lists based, among other criteria, on the percentage decline of breeding or wintering populations in recent years. These lists do not indicate rarity for the species concerned, and many listed species are currently common and widespread.

3.2.4 Reptiles

All native reptiles are listed on Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and are afforded protection under Sections 9(1) and 9(5). For the reptile species occurring in Norfolk, adder *Vipera berus*, grass snake *Natrix helvetica*, slow-worm *Anguis fragilis* and common lizard *Zootoca vivipara*, this protection prohibits deliberate or reckless killing and injury but does not include habitat protection.

3.2.5 Great Crested Newts

The great crested newt *Triturus cristatus* is listed under Schedule 2 of the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019. The species is also protected by Sections 9(4) and 9(5) of the Wildlife and Countryside Act 1981 (as amended). It is an offence to knowingly or recklessly kill, injure, disturb, handle or sell the animal, and this protection is afforded to all life stages. It is unlawful to deliberately or recklessly damage, destroy, or obstruct the access to any structure or place used for shelter or protection; this includes both the terrestrial and aquatic components of its habitat.

3.2.6 Plants

Schedule 8 of the Wildlife and Countryside Act 1981 (as amended) lists plant species which are afforded special protection. It is an offence to pick, uproot or destroy any species listed on Schedule 8 without prior authorisation, and all plants are protected from unauthorised uprooting (i.e. without the landowner's permission) under Schedule 13 of the Wildlife and Countryside Act 1981 (as amended).

¹ Eaton, M. Et al (2015). Birds of Conservation Concern 4. The Population Status of Birds in the UK, Channel Islands and Isle of Man. British Birds 108: 708-746.

A Vascular Plant Red List for England² provides a measure of the current state of England's flora measured against standardised IUCN criteria. Any taxon that is threatened - Critically Endangered (CR), Endangered (EN), Vulnerable (VU) - or Near Threatened (NT) does not have statutory protection but should be regarded as a priority for conservation in England. It should be noted that 'threat' is not synonymous with 'rarity'; some of the species concerned remain relatively common and widespread.

It is an offence to plant or cause to spread in the wild of certain plant species under Schedule 9 of the Wildlife and Countryside Act 1981 (as amended). Plant species relevant to the East of England are as follows:

Himalayan Balsam *Impatiens glandulifera*
 Variegated yellow archangel *Lamiastrum galeobdolon ssp argentatum*
 Virginia creeper *Parthenocissus quinquefolia*
 False acacia *Robinia pseudoacacia*
 Water fern *Azolla filiculoides*
 Giant Hogweed *Heracleum mantegazzianum*
 Knotweed species including Japanese knotweed *Fallopia japonica*
 Parrot's feather *Myriophyllum aquaticum*
 Floating pennywort *Hydrocotyle ranunculoides*
 Rhododendron *Rhododendron ponticum*
 Giant rhubarb *Gunnera tinctoria*
 New Zealand Pigmyweed *Crassula helmsii*
 Waterweeds *Elodea spp.*

All waste containing Japanese knotweed comes under the control of Part II of the Environmental Protection Act 1990 and is classified as controlled waste.

3.3 Priority Species and Habitats

Other priority species and habitats which are a consideration under the National Planning Policy Framework (NPPF) 2019, placing responsibility on Local Planning Authorities to aim to conserve and enhance biodiversity and to encourage biodiversity in and around developments. There is a general biodiversity duty in the Natural Environment and Rural Communities (NERC) Act 2006 (Section 40) which requires every public body in the exercising of its functions to 'have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity'. Biodiversity, as covered by the Section 40 duty, includes all biodiversity, not just the Habitats and Species of Principal Importance.

Section 41 of the NERC Act lists a number of species and habitats as being Species/Habitats of Principal Importance. These are species/habitats in England (commonly known as Priority Habitats/ Species) which had been identified as requiring action under the UK BAP, and which continue to be regarded as conservation priorities under the UK Post-2010 Biodiversity Framework. The protection of either Priority Species or Habitats is not statutory, but "specific consideration"³ should be afforded by Local Planning Authorities when dealing with them in relation to planning and development

² Stroh P.A., Leach S.J., August T.A., Walker K.J., Pearman D.A., Rumsey F.J., Harrower C.A., Fay M.F., Martin J.P., Pankhurst T., Preston C.D. & Taylor I. 2014. A Vascular Plant Red List for England. Botanical Society of Britain and Ireland, Bristol.

³ JNCC (2015) UK BAP priority species and habitats

<http://www.naturalengland.org.uk/ourwork/conservation/biodiversity/protectandmanage/habsandspeciesimportance.aspx>

control. Also, there is an expectation that public bodies would refer to the Section 41 list when complying with the Section 40 duty.

Widespread Priority Habitats in East Anglia include:

- Arable field margins
- Traditional orchards
- Hedgerows
- Eutrophic standing waters
- Ponds
- Rivers
- Lowland calcareous grassland
- Lowland dry acid grassland
- Lowland meadows
- Lowland fen
- Coastal and floodplain grazing marsh
- Reedbeds
- Lowland mixed deciduous woodland
- Wet woodland
- Wood-pasture and parkland

Widespread Priority Species in East Anglia (which have no specific legal protection) include:

- Common toad *Bufo bufo*
- Hedgehog *Erinaceus europaeus*
- Brown hare *Lepus europaeus*
- Harvest mouse *Micromys minutus*
- Small heath butterfly *Coenonympha pamphilus*
- Wall butterfly *Lasiommata megera*
- Cinnabar moth *Tyria jacobaeae*

Many red-listed bird species are also Priority Species.

3.4 Local Species and Habitat Designations

The Suffolk Biodiversity Planning Group has published Habitat and Local Biodiversity Action Plans⁴ for selected species occurring within Suffolk. Each Action Plan lists current actions and defines objectives and targets.

⁴ SUFFOLK LOCAL BIODIVERSITY ACTION PLAN (suffolkbis.org.uk)

3.5 Policy

The overarching policy guidance for biodiversity is included within the National Planning Policy Framework (NPPF⁵). Section 15 of this document (Conserving and Enhancing the Natural Environment) outlines the approach that Local Authorities should adopt when considering ecological issues within the planning framework, including the principles of the Mitigation Hierarchy. This espouses that in addressing impacts on valued features, avoidance should be the first option considered, followed by mitigation (minimising negative impacts). Where avoidance and mitigation are not possible, compensation for loss of features can be used as a last resort. Paragraphs 170, 174 and 175 of the NPPF give policy support to the provision of measurable **net gains** in biodiversity. Paragraph 174 specifies that plans should identify, map and safeguard components of local wildlife-rich habitats and wider ecological networks, including locally designated sites (such as CWS). It also promotes the conservation, restoration and enhancement of priority habitats and ecological networks and the protection and recovery of priority species.

⁵ MHCLG (2019). National Planning Policy Framework. UK Government.

4. Methods

4.1 Report Objectives

The purpose of this ecological report is to describe the habitats, protected and valued species potential, any designated nature conservation sites, and any other ecological issues within the potential zone of influence of the proposal. This has allowed for an ecological assessment of the proposal to be completed. Avoidance measures, mitigation, compensation and ecological enhancements are specified with the intention of achieving net gain as specified within the NPPF.

4.2 Desk Study

A data search was completed with Suffolk Biodiversity Information Service (SBIS) and Cambridge and Peterborough Environmental Records Service (CPERC) in October 2021. The data search obtained biological records and information on any designated nature conservation sites within the proposed site and the surrounding 2km area. The Multi-Agency Geographic Information for the Countryside (MAGIC) website was also reviewed to identify nature conservation sites and protected species licensing data with 2km of the site.

The proposal site and nearby surrounding area was reviewed using Ordnance Survey (OS) maps and aerial photographs with the aim of identifying potential ecological issues or sensitive habitats, such as nearby ponds or connected hedgerows. National Character Area profiles⁶ were consulted for site context where appropriate.

4.3 Extended Phase 1 Habitat Survey

An Extended Phase 1 Habitat Survey of the site was undertaken on 23rd September 2021 by Graham Riley BSc ACIEEM (Natural England GCN Licence Number: 2019-43743-CLS-CLS) and Katrina Salmon BSc. The survey was undertaken on a mild day with a temperature of 17°C, 50% cloud cover, no precipitation and wind speed estimated at 1 on the Beaufort Wind Scale.

The survey method followed the Joint Nature Conservancy Council (JNCC) guidelines⁷, with the methods being 'extended' to include a general evaluation of potential habitats for any protected or valued species. Photographs were taken to record key features/views.

Only habitats on the landholding were available to survey. Habitats outside of the landholding were appraised as far as possible by viewing from the landholding, public footpaths and roads, as well as by using publicly accessible aerial photographs.

4.4 Assessments of Nearby Waterbodies

One pond within 250 metres of the main building to be converted was appraised for suitability for great crested newts using the Habitat Suitability Index (HSI) per Oldham (2000)⁸ and the classification guide defined by the Amphibian and Reptile Groups of the

⁶ <https://www.gov.uk/government/publications/national-character-area-profiles-data-for-local-decision-making/national-character-area-profiles#ncas-in-the-east-of-england>

⁷ Joint Nature Conservation Committee (2010) Handbook for Phase 1 Habitat Survey. Joint Nature Conservation Committee, Peterborough

⁸ Oldham, R., Keeble, J., Swan, M. and Jeffcote, M. (2000). Evaluating the suitability of Habitat for Great Crested Newt (*Triturus cristatus*). Herpetological Journal 10: 143-155.

United Kingdom (2010)⁹. The appraisal was completed by G. Riley and K. Salmon during the initial site visit on the 23rd September 2021.

The HSI is an indicative tool used to rate the suitability of waterbodies for GCN, based on ten characteristics and features such as size, water quality, vegetation cover and quality of surrounding terrestrial habitat. These features are assessed, classified according to prescribed criteria and assigned a numerical score. These scores allow the HSI to categorise waterbodies into one of five ratings which indicate their suitability for use by GCN. The five categories and the score parameters (between 1 and 0) are as follows:

- Excellent: >0.8
- Good: 0.7 - 0.79
- Average: 0.6 - 0.69
- Below average: 0.5 - 0.59
- Poor: <0.5

⁹ ARG UK. (2010). ARG UK Advice Note 5, Great Crested Newt Habitat Suitability Index. Amphibian and Reptile Groups of the United Kingdom



5. Results

5.1 Desk study

5.1.1 Local Landscape Description

The proposal site lies immediately to the south-east of Red Lodge, Suffolk and to the west of Herringswell. It is set within an area of woodland (Triangle Plantation), with the wider landscape being primarily arable land with scattered woodland and villages. Ordnance Survey map data shows two waterbodies within 500m of the proposal site; one of which lies within the site boundary and the other is a small pond 275m to the southeast and separated from the site by the main Herringswell - Red Lodge road.

5.1.2 Pre-existing Information on Designated Sites

Designated conservation sites within 2 kilometres of the proposal site are shown in Figure 3, below.

There are two statutory designated sites within 2km of the proposal site. These are:

- Breckland Farmland SSSI/SPA which is located 1km to the east of the proposal site. This is designated for its population of breeding stone curlews *Burhinus oedicnemus* and requires all planning applications within 1.5km of the area to be screened for potential impacts to this species. This assessment is covered in a separate Appropriate Assessment document.
- Red Lodge Heath SSSI which is located 992m west of the proposal site designated for invertebrates, chiefly associated with dry grassland, and wet woodland with ponds, including a nationally important population of the rare five-banded tailed digger wasp *Cerceris quinquefasciata*. The site also supports a nationally important assemblage of rare plants.

There are seven non-statutory designated County Wildlife Sites (CWS) within 2km of the proposal site.

- Morland Stud Pit (Forest Heath 58) is 1.8km south of the proposal site which supports a small population of smooth rupturewort *Herniaria glabra*, a nationally rare plant.
- Worlington Chalk Pit (Forest Heath 46) is 2km northwest of the proposal site which contains a diverse flora typical of species-rich chalk grassland and high invertebrate interest.
- Red Lodge Warren (Forest Heath 59) is 1.8km northwest of the proposal site which supports a valuable Breckland grassland community.
- Kennett Restored Gravel Pit (CWS# 7447) is 1.3km south of the proposal site which contains nationally rare vascular plant species.
- Kennett Churchyard (CWS# 7376) 1.9km is southwest of the proposal site which supports at least eight neutral grassland indicators.
- Halfmoon Plantation Pit (CWS# 7374) is 1.9km west of the proposal site which supports nationally rare plant species and a diverse invertebrate population.



- Havacre Meadows and Deal Nook (CWS# 7379) is 2km west of the proposal site which is a large mosaic site incorporating alder carr.

5.1.3 Pre-existing Information on Protected and Valued Species

The data search with SBIS and CPERC revealed 3,290 records of 161 protected and valued species within 2km of the proposal site. Records of relevance to the site include:

- 2,379 records of 66 species of birds, including a diverse mixture of woodland and farmland species and raptors. Birds occurring in the local environment include starling *Sturnus vulgaris* (47 records), lapwing *Vanellus vanellus* (97 records), tree sparrow *Passer montanus* (14 records) and barn owl *Tyto alba* (four records).
- There are 31 records of small heath butterfly *Coenonympha pamphilus*.
- 22 records of eight species of bats. The majority of records (8) are for pipistrelle species most likely comprised of common pipistrelle *Pipistrellus pipistrellus* and soprano pipistrelle *Pipistrellus pygmaeus*. Other species include brown long-eared bat *Plecotus auritus*, barbastelle *Barbastellus barbastella*, and Myotis bats *Myotis spp.*
- 27 records of other terrestrial mammals. The majority of these records (25) are for hedgehog *Erinaceus europaeus*, with otter *Lutra lutra* also recorded.
- There are four records of reptiles (two of common lizard *Zootoca vivipara*, two of grass snake *Natrix helvetica*) all over 1km from the site.

A search of the MAGIC database returned no records of European Protected Species (EPS) licences within 2km of the site. There were also no records of GCN from EPS licence returns or Natural England Pond surveys within 2km of the site.

5.2 Site Surveys

5.2.1 Extended Phase 1 Habitat Survey

The site is in the south of Triangle Wood, immediately to the west of the road. It includes three buildings, a pond, scattered trees, areas of woodland to the north and south of the site and amenity grassland. Habitats on site are mapped in Figure 4 and photographs of the site are provided in Appendix 1.

To the south of the site is a hedgerow providing a boundary between the road and the site (Photo 1), and beyond that is arable land. The site is bounded in entirety by post and rail fencing with deer guard mesh (Photo 2) and to the north by trees and a footpath.

The buildings on site are all brick built with shingle roofing and weatherboarded gables (Photos 3-5). Some shingles are lifted, as is the weatherboarding (Photos 6 & 7) so the buildings would be classed as having moderate bat roost potential should any future works to them be required.

The amenity grassland (Photo 8) is dominated by perennial ryegrass *Lolium perenne* and contained red fescue *Festuca rubra*, ribwort plantain *Plantago lanceolata*, yarrow *Achillea millefolium*, petty spurge *Euphorbia peplus* and springy turf moss *Rhytidiadelphus squarrosus*.

The access road to the site from the southwest is lined by Scot's pine *Pinus sylvestris* (Photo 9). This area also contains an area of broad-leaved woodland comprising bramble *Rubus fruticosus agg.*, elder *Sambucus nigra*, sycamore *Acer pseudoplatanus*, oak

Quercus robur, silver birch *Betula pendula*, hawthorn *Crataegus monogyna* and bird cherry *Prunus padus* (Photo 10). A beech *Fagus sylvatica* hedge forms the northern boundary of the garden area (Photo 11), which also contains scattered trees including conifer *Pinus* spp. and an ornamental pond.

The pond is roughly oval in shape, lined and populated with greater pond sedge *Carex riparia* and white water lily *Nymphaea alba*. It is partially shaded by the surrounding trees (Photos 12 & 13).

The north of the site has been fenced off for use as a paddock, and contains a timber-built shelter (Photo 14) while comprising poor semi-improved grassland (Photo 15) of which species found are listed in Appendix 2. Two mature oaks have been removed from this area (Photo 16). The remaining trees in this area comprise mixed woodland of similar species to those found in the south with the addition of holly *Ilex aquifoliaceae* (Photo 17). Two trees in this area were dead (Scot's pine and sycamore).

5.2.2 Habitat Suitability Assessment of waterbody

The ornamental pond was assessed for suitability to support GCN and was calculated to be Below Average condition for supporting GCN. The pond is to be retained. HSI scores are summarised in Table 1, below.

Table 1: HSI calculation

Pond	1
Location	A
(D)ry / No Access (NA) / (R)emoved	
Shape	Ellipse
Length/ Diameter	4
Width	3
Estimated Area	9.4
Desiccation	Rarely
Water Quality	Moderate
% Shade	60
Waterfowl	Absent
Fish	Possible
Pond Density	2
Terrestrial	Good
% Macrophyte	60
Value	0.58
Category	Below Average

5.2.3 Protected and Valued Species Potential

The pond on site is unlikely to support GCN.

The longer, semi-improved grassland to the north of the site is suitable for reptiles such as common lizard *Zootoca vivipara* but the habitat is isolated and therefore less likely to support a population.

The buildings on site have moderate potential to support roosting bats and if any works were to be carried out to these then further surveys will be required.

The hedgerows and trees on site provide nesting habitat for a range of local bird species.

Mitigation and compensation advice is provided below for potential impacts to Priority Species.

5.3 Constraints and Limitations of Survey

This survey experienced no notable constraints or limitations.

5.4 Expiry Dates

The Extended Phase 1 Habitat Survey will be valid for one year from the date it was completed, until September 2022.

Figure 3a: Designated sites within 2km, as provided by SBIS

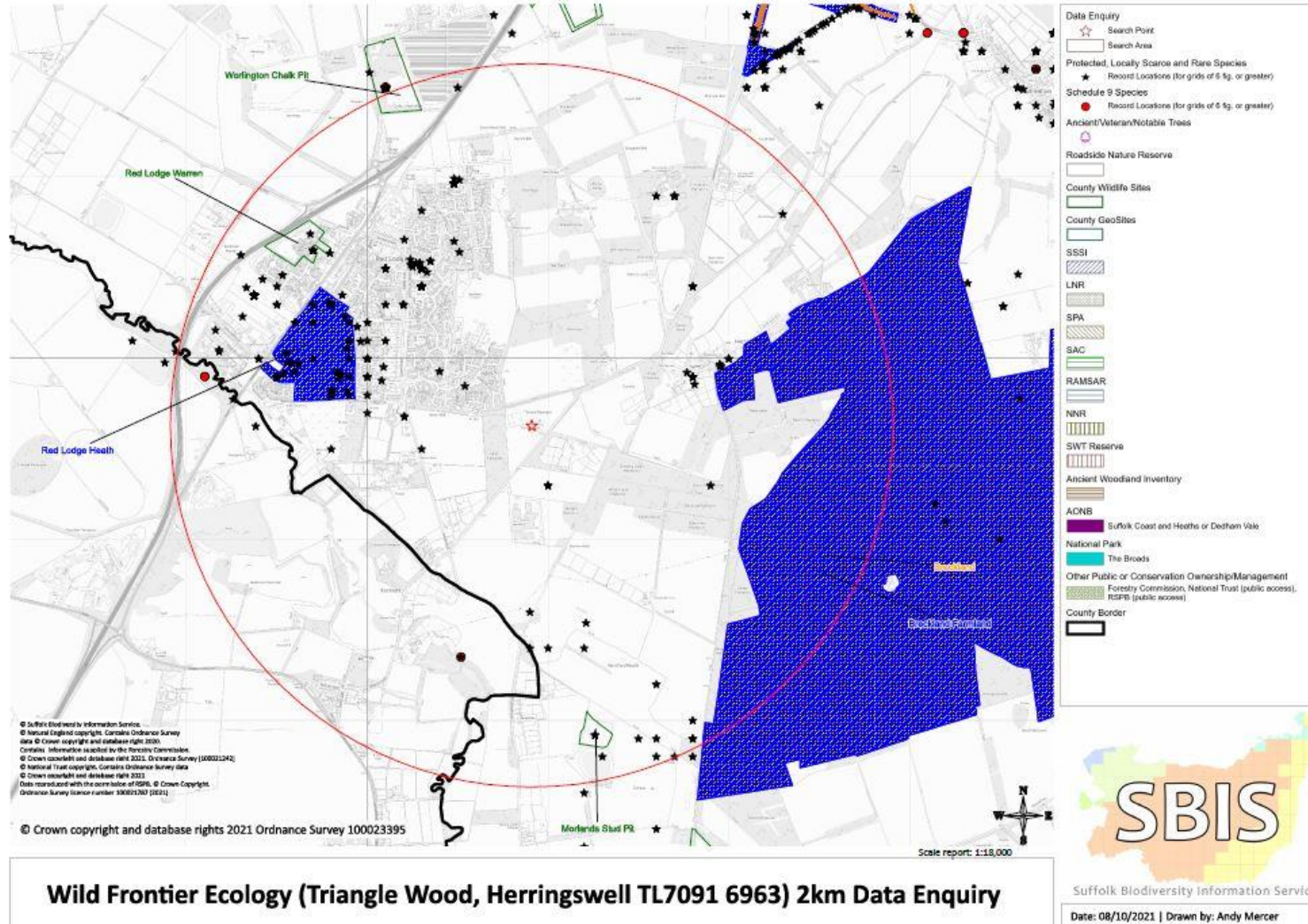


Figure 3b: Designated Sites within 2km, as provided by CPERC

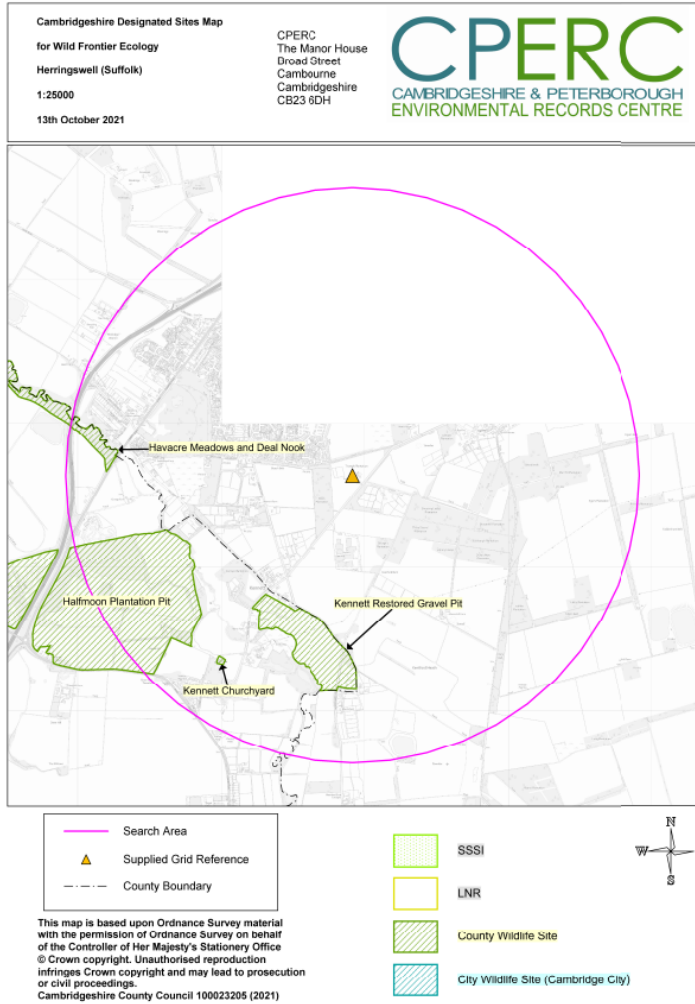


Figure 4: Phase 1 Habitat Map



6. Impact Assessment

6.1. Potential impacts on ecological receptors

Impact assessment is made with reference to the CIEEM EclA Guidelines¹⁰.

Throughout, italicised words are used in the technical sense defined within the CIEEM guidance. This refers to the geographical context of the impact or effect. Hence, the following geographical frame of reference will be used to describe the ecological impacts and effects, or adapted to suit local circumstances:

- International and European
- National
- Regional
- County
- District*
- Local

*District level is not listed in the EclA guidance, but is included within WFE reports as it is a useful and readily identifiable geographic unit.

The local/parish geographical context for the proposal site is defined here as the civil parish of Herringswell. The district context West Suffolk, in which the site is situated. The county context is Suffolk, and the region is East Anglia.

The EclA guidelines espouse a quantification of impact/effect magnitude where possible. Where this is not available or uncertain, impact magnitude categories and criteria are defined based on Byron (2000)¹¹. These categories are often also used as shorthand to summarise magnitude.

- *Major negative* - that which has a harmful effect on the integrity of a conservation 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 at a defined locality.
- *Intermediate negative* - that which has no adverse effect on the integrity of a conservation site or the conservation status of a species' population, but does have an important adverse effect 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* - some minor detrimental effect is evident, but not to the extent of the above.
- *Neutral* - that which has no predictable effect.

¹⁰CIEEM (2018). Guidelines for Ecological Impact Assessment in the UK and Ireland: 3rd edition. Chartered Institute of Ecology and Environmental Management, Winchester

¹¹ Byron H. (2000). Biodiversity Impact - Biodiversity and environmental impact assessment: a good practice guide for road schemes. The RSPB, WWF-UK, English Nature and the Wildlife Trusts, Sandy

6.1.2 Positive or Negative Impacts/ Effects

The nature of a predicted impact is as per CIEEM definition:

“Positive impact - a change that improves the quality of the environment e.g. by increasing species diversity, extending habitat or improving water quality. Positive impacts may also include halting or slowing an existing decline in the quality of the environment.”

Negative impact - a change which reduces the quality of the environment e.g. destruction of habitat, removal of species foraging habitat, habitat fragmentation, pollution.”

6.2 Duration of Impact/ Effect

Impacts/ effects are described as short, medium or long-term, and as either permanent or temporary.

6.3 Impact/ Effect Reversibility

Reversibility is judged per the CIEEM Guidelines for Ecological Impact Assessment description: *“An irreversible effect is one from which recovery is not possible within a reasonable timescale or there is no reasonable chance of action being taken to reverse it. A reversible effect is one from which spontaneous recovery is possible or which may be counteracted by mitigation.”*

6.4 Impact/ Effect Significance

The CIEEM Guidelines for Ecological Impact Assessment provide a working definition of ‘significant effects’ which includes the statements:

“For the purpose of EclA, ‘significant effect’ is an effect that either supports or undermines biodiversity conservation objectives for ‘important ecological features’ or for biodiversity in general.” and “In broad terms, significant effects encompass impacts on structure and function of defined sites, habitats or ecosystems and the conservation status of habitats and species (including extent, abundance and distribution).”

In this assessment, a significant impact is not attributed to any effect on a receptor which is predicted to occur at no greater than minor negative magnitude. Similarly any impact, regardless of magnitude, is not regarded as significant if its geographic scale of importance is lower than a local/ parish level.

6.5 Description of Impacts/ Effects

Very few impacts/ effects on ecological receptors may result from the proposed change of use.

6.5.1. Change of land use

The land use will remain largely unchanged, small areas of grassland will be lost for the creation of footpaths and an area of scattered trees to the south of the access track will be lost for parking, therefore a *minor negative* impact is expected.

6.5.2. Construction activities

There will be minimal construction activity, the most invasive being the creation of the car park, therefore a *minor negative* impact is certain.

6.5.3. Operational activities

The change in use from residential to nursery will result in a minor (though not permanent) increase in the population of the site and increase in the traffic using the access road. The increase will be diurnal and unlikely to have lasting impact on the site, therefore the impact is likely to be at worst *minor negative*.

6.6 Designated Sites

The site falls within the 1.5km buffer for the Breckland SPA in which any potential impact to nesting stone curlews must be considered. This is covered by an additional document and will not be addressed in detail here.

The proposed conversion will not permanently increase the local population, or cause significant changes to the site or surrounding area. When considered in the context of Red Lodge (population 4,124) and Herringswell (population 290¹²), recreational impacts on designated sites are not expected.

6.7 Habitats

There will be a minor loss of habitat to the south of the access track, and some minor loss of grassland to the creation of footpaths. The grassland is of low ecological value, therefore overall, the effect will be *minor negative*.

There will be a loss of some trees and scrub to the south of the site in the creation of the car park, which will result in the loss of habitat for nesting birds and foraging bats. Mitigation will be required to ensure the affect is no greater than *minor negative*.

If the recommendations in Section 8 are implemented there is the possibility of a *minor positive* impact on the site as a whole, long term.

6.8 Bats

6.8.1 Roosting Bats

The buildings are to remain externally unchanged by the change of use. The buildings are regarded as having moderate bat potential; therefore, any construction work to the exterior of the building or the roof would require further bat surveys and potentially an EPS licence.

So long as the best practice methods of working listed in Section 7 are adhered to, impacts to roosting bats will be *neutral*. If the enhancements recommended in Section 8 are followed there is the possibility of a *minor positive* impact to roosting bats.

6.8.2 Foraging Bats

The data search revealed that bats occur in the local area and it is probable that foraging and commuting bats will occasionally occur on and near the site. Insensitive night-lighting both during change of use and subsequent operation could disrupt foraging or commuting bats and other nocturnal species using the site. This could lead to *minor negative* impacts in the long term, and best practice mitigation measures are advised.

6.9 Great Crested Newts

¹² <https://www.nomisweb.co.uk/reports/localarea?compare=E04009148>



There are no records of GCN returned by the data search. Owing to the waterbodies isolation and below average status as a habitat, it is unlikely that GCN will occur on site and best practice methods of working will be sufficient for any works undertaken in this area. A *neutral* impact is certain.

6.10 Breeding Birds

The trees and scrub on site provide suitable habitat for a variety of local bird species, including red and amber listed BoCC. Although the majority of this habitat is expected to be retained, any removal of trees and scrub in the southern part of the site would have *minor negative* impacts on local populations in the long-term without mitigation, and could damage or destroy an active nest which would constitute a legal offence.

The regularly mown habitat on part of the site is suboptimal for most nesting birds. The site is fairly small and alternative suitable habitats (such as grassland and arable fields) are abundant in the surrounding area, so the daily temporary increase in population is almost certain to have a *neutral* impact on ground-nesting birds.

In the longer term, new features such as species-rich hedgerows, trees and shrubs would improve opportunities for nesting. Advice regarding enhancement of the developed site for birds is provided in Section 8.

6.11 Badgers

There were no signs of badger on the proposal site and no records returned by the data search. It is possible that badgers would forage on the arable field and forage around the site boundaries. However, badgers would easily be able to avoid the site and continue to forage locally, where alternative habitats are abundant. Overall, the conversion is judged to be almost certain to have a *neutral* impact on local badger populations.

Some standard best practice measures are proposed during conversion to minimise the risk of direct harm that works associated with the change of use could pose to transient badgers and other terrestrial animals, in the event that they venture onto the site.

6.12 Reptiles

The data search revealed three records of reptile in the local area, two for common lizard and one for grass snake. The site has favourable habitat to the north, but is isolated from other suitable habitat in the area; however, it is possible that transient individuals occasionally occur on or near the site. *Minor negative* impacts could occur in the short term if individuals were to come into contact with the works. Best practice measures are advised.

6.13 Priority Species

The data search returned many records of hedgehogs in the local area. The site provides suitable habitat for hedgehogs and other Priority Species, which are also likely to occasionally occur on the site, and best practice mitigation measures will reduce *minor negative* impacts in the short-term.

In the long-term, implementation of the enhancement measures detailed in Section 8 may give rise to a *minor positive* impact on local populations of some species.

7. Mitigation

7.1 General Principles

The Mitigation Hierarchy is a key principle, with the sequential strategies given in order. This is interpreted by WFE, as it applies to built development, in Table 2 below.

Table 2: Mitigation Hierarchy

Action and sequential number	Description
1. Avoidance	Seek options that remove or avoid impacts/ effects on ecological features, for example through design of development or seasonal timing of works
2. Mitigation	Adverse impacts/ effects should be minimised through mitigation measures, either through the design of the project or subsequent measures that can be guaranteed - for example, through a condition or planning obligation.
3. Compensation	Where there are significant residual adverse ecological effects despite the mitigation proposed, these should be offset by appropriate compensatory measures. A common example is the replanting of a removed section of hedge elsewhere on the site.
Enhancement	The final stage of the Mitigation Hierarchy is distinct in that it does not seek to solely address adverse impacts; it goes over and above requirements for avoidance, mitigation and compensation. In accordance with the NPPF, developments should achieve net gains in biodiversity even if adverse impacts are not anticipated. Enhancement measures are those which seek to provide net benefits for biodiversity, and are advised wherever appropriate; this may include enhancements for receptors which are otherwise expected to experience adverse impacts.

7.2. Habitats

The habitats will remain largely unchanged. Where there is habitat loss, for example the loss of trees and scrub for the construction of the car park, 10 additional trees will be planted. Trees provide a wide variety of benefits such as visual amenity, habitat, shade, carbon capture, improved air quality and many more. For the purposes of this ecological report WFE has focused on maximising the habitat value of the trees to wildlife; therefore the following native flowering and fruiting species are advised:

Alder *Alnus glutinosa*
 Bird cherry *Prunus padus*
 Cherry plum *Prunus cerasifera*
 Crab apple *Malus sylvestris*
 Dogwood *Cornus sanguinea*
 Field maple *Acer campestre*
 Guelder rose *Viburnum opulus*
 Holly *Ilex aquifolium*

Hornbeam *Carpinus betulus*
 Oak *Quercus robur*
 Rowan *Sorbus aucuparia*
 Silver birch *Betula pendula*
 Small-leaved lime *Tilia cordata*
 Wayfaring tree *Viburnum lantana*
 Whitebeam *Sorbus aria*
 Wild cherry *Prunus avium*
 Wild service tree *Sorbus torminalis*

Planting around any hardstanding should have input from an Arboriculturist in addition to members of the design team such as a Landscape Architect. The right tree species need to be planted in the right place to ensure that the tree can thrive, reach its full potential and achieve its mitigation purpose (if applicable) in the long-term.

7.3 Breeding Birds

The removal of any trees or other woody vegetation will be done outside of the main bird nesting season (1st March - 31st August) to ensure that no active bird nests are damaged or destroyed.

If this is not possible, any vegetation requiring removal must be thoroughly checked for bird nests by a suitably qualified person prior to the works, and the removal of the vegetation would then only be permissible if this check confirms that there are no active birds' nests within them. A Construction Exclusion Zone (CEZ) (e.g. 10m) will be set up around any active nests until they have reached their natural conclusions, which would be confirmed by subsequent ornithological checks. This is only possible for small areas of scrub/ trees and if large areas are outlined for removal this must take place outside of the breeding bird season.

7.4 Bats

Bats are small and highly mobile mammals which can use a range of roosting sites, some of which can be small and used infrequently. In the unlikely event that a bat is found during works, conversion work will cease until advice has been sought from a professional ecologist and the ecologist has confirmed that it is acceptable for works to restart.

7.5 Priority Species

Any vegetation cuttings will be removed from the site rather than left in-situ to decompose. Leaving piles of cut vegetation on the site could encourage animals such as small mammals and amphibians to venture onto the site.

The area proposed for car parking should have the vegetation cut back to a low (around 10-15cm in height) level using hand-tools on a dry day with air temperatures of at least 15°C. This cut will not take place until April at the earliest. Cutting must commence in the south of the site and work progressively northwards, thereby encouraging any animals to move towards suitable habitat to the north and west of the site and away from the road to the south.

7.6 Best Practice Measures

Best practice measures are advised for effects which, although often not predicted to be of great magnitude, may affect valued ecological receptors in a way that would be preventable and/or a legal offence. The measures that will be applied to compensate for potential ecological impacts are as follows:



- Any vegetation cuts should take place from south to north to any allow transient reptiles to move off site into suitable alternative habitat. Cuts should take place during April or later in the spring/summer.
- All building materials and waste materials will be stored above the ground, such as on pallets or in skips respectively. This measure will ensure that such materials do not provide a sheltering opportunity, attractive to invertebrates, amphibians, reptiles and small mammals.
- Any excavations will not be left open overnight, or else will be fitted with egress boards sloped at a shallow angle ($<40^\circ$) or have shallow battered/sloped edges (also $<40^\circ$) to allow any animals which fall in to climb out. Preferably all excavations will be backfilled at the end of each working day or covered overnight to prevent animals from falling in.
- Works will be restricted to daylight hours only to prevent disturbance or accidental harm to nocturnal animals such as badgers and hedgehogs. Ideally night lighting of the site will be minimised to reduce disturbance to other nocturnal animals such as bats and moths. Amphibians typically forage terrestrially at night, so restricting works to occur in daylight hours will minimise the chances of these species encountering the works.
- The impact on foraging bats posed by the proposal consists of disturbance through lighting at night. Therefore night-lighting of the site will be avoided wherever possible, or sensitively designed if it is essential. The use of movement sensors such as Passive Infra-Red (PIR) sensors installed on lights can ensure that they come on only when needed and avoid unnecessary constant illumination. Positioning lights at angles of not greater than 90° to the ground (i.e. facing directly downwards) can reduce overspill of light and sky glow, which can disrupt the nocturnal behaviours of bats and insects¹³.

¹³ Stone, E.L. (2013). Bats and lighting: Overview of current evidence and mitigation guidance

8. Enhancements

8.1 Habitat Enhancements

An increase in the number of trees and hedgerows, would appropriately enhance the site. Hedgerows will be at least 30m in length and three additional trees to those advised in the mitigation section will be planted. These will include native species such as:

Apple *Malus* spp.
 Beech *Fagus sylvatica*
 Bird cherry *Prunus padus*
 Blackthorn *Prunus spinosa*
 Buckthorn *Rhamnus catharticus*
 Crab apple *Malus sylvestris*
 Dog rose *Rosa canina*
 Dogwood *Cornus sanguinea*
 Elder *Sambucus nigra*
 Field maple *Acer campestre*
 Guelder rose *Viburnum opulus*
 Hawthorn *Crataegus monogyna*
 Hazel *Corylus avellana*
 Holly *Ilex aquifolium*
 Hornbeam *Carpinus betulus*
 Spindle *Euonymus europaeus*

Non-native species with high wildlife value such as firethorn *Pyracantha* spp. or lilac *Syringa vulgaris* could be considered but are not preferred. Such species will provide new habitat for invertebrate and bird species.

The amenity grassland could be enhanced with a suitable flowering lawn mixture such as Emorsgate EL1 Flowering Lawn Mixture¹⁴, which could be managed with mowing as required. This will provide a foraging resource for invertebrates which will in turn provide a foraging resource for local birds. Any area of poor semi-improved grassland that is to remain un-grazed could be re-seeded with a meadow mix such as Emorsgate EM2 Standard General Purpose Meadow Mixture.

8.2 Species Enhancements

8.2.1 Breeding Birds

At least six nest boxes will be installed on trees in the woodland to the north and south of the site. If possible, at least two boxes will be installed on the buildings as well.

Bird nest boxes are more likely to be used by nesting birds if installed in suitable positions, so unless there are trees or buildings which shade the box during the day, face the box between north and east, thus avoiding strong sunlight and the wettest winds¹⁵. In general, bird boxes should be placed under overhanging eaves or other building feature which provide shelter, overlooking gardens or other green spaces, and with a clear/unobstructed flight line for easier access and egress.

¹⁴ <https://wildseed.co.uk/mixtures/view/56>

¹⁵ <https://www.rspb.org.uk/birds-and-wildlife/advice/how-you-can-help-birds/nestboxes/nestboxes-for-small-birds/making-and-placing-a-bird-box/>



Nest box designs are commercially available and will be provided with instructions for appropriate installation. Suitable models include:

For buildings:

RSPB Sparrow Terrace nest box
Vivara Pro WoodStone House Sparrow nest box
Vivara Pro Woodstone Starling nest box

For trees:

Schwegler 1B nest box
Vivara Pro Barcelona Woodstone open nest box

8.2.2 Bats

Two bat boxes will be installed on the buildings on site to provide additional roosting opportunities for local bats. Alternatively, bat boxes could also be installed on trees within the wooded areas.

Bat boxes are more likely to be used by bats if installed on warmer aspects of the buildings, such as south, west, or east sides. Installing boxes on a range of different building aspects provides a range of thermal conditions for bats to use throughout the year. Bat roost boxes will provide superior roosting opportunities if installed in close proximity to gardens and other green spaces, and away from sources of disturbance such as roads, parking spaces and any exterior lighting. Any of the following bat boxes suitable for general use, or similar models (in terms of lifespan and demonstrated effectiveness) will be used:

For buildings:

Beaumaris Woodstone bat box
Greenwoods Ecohabitats boxes

For trees:

Greenwoods Ecohabitats boxes
Large multi chamber Woodstone bat box
Vivara Pro Woodstone bat box
Kent bat box
Schwegler 1FF
Schwegler 2F



9. Conclusions

The site has been appraised for its potential to impact on designated nature conservation sites, valued habitats, and protected/Priority Species using an Extended Phase 1 Habitat Survey and desk study.

There are no designated sites within 1km of the proposal and owing to the fact that the site is undergoing change of use rather than development, the likelihood of impacts to those sites are minimal. The consideration of the 1.5km buffer for the Breckland SPA is addressed in an accompanying HRA document.

The pond located on site was appraised for its suitability to support GCN and found to be below average. The data search also returned no records of GCN indicating they are unlikely to be impacted by the change of use.

The data search returned three records of reptiles within 2km but owing to the isolation of the on-site habitat and the small scale of the alterations, the likelihood of any impact on reptiles is low.

The trees do provide habitat for nesting birds, as do areas of scrub on site, and mitigation is advised. Hedgerows, trees and other vegetation on site will be retained where possible. Should removal of woody vegetation be required, this will be done outside of the main nesting bird season (1st March - 31st August) or vegetation will be inspected for nests prior to removal.

Enhancement advice is provided, and where followed the site has the potential to provide new benefits for local wildlife.



Appendix 1. Photographs



Photo 1: Hedge at southern boundary



Photo 2: Post and rail fencing surrounding much of the site



Photo 3: View of neighbouring building from main house



Photo 4: Main house



Photo 5: Curve roofed extension



Photo 6. Lifted tiles and poor state of roof



Photo 7: Lifted weatherboarding



Photo 8: Amenity grassland



Photo 9. Access road lined by Scots pine



Photo 10: Woodland to south of site



Photo 11: Beech hedge and brash pile.





Photo 12: Ornamental Pond.



Photo 13: Planting in pond



Photo 14: Paddock with timber shelter



Photo 15: Poor semi-improved grassland



Photo 16: Stump of removed tree



Photo 17: Woodland to northwest of site

Appendix 2: Plant Species List

Common Name	Latin Name
Common bent	<i>Agrostis capillaris</i>
Fescue	<i>Festuca spp.</i>
Common brome	<i>Bromus vulgaris</i>
False oat	<i>Arrhenatherum elatius</i>
Ladies' bedstraw	<i>Galium verum</i>
Ragwort	<i>Jacobaea vulgaris</i>
Spear Thistle	<i>Cirsium vulgare</i>
Nettle	<i>Urtica dioica</i>
Cocksfoot	<i>Dactylis glomerata</i>
Sheep sorrel	<i>Rumex acetosella</i>
Catsear	<i>Hypochaeris radicata</i>
Ground ivy	<i>Glechoma hederacea</i>
Red dead-nettle	<i>Lamium purpurea</i>