

# Brick Kiln Road, Raunds Site C Ecological Assessment

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**Prepared for Mr Harvey Smith and Mrs Louise Smith**

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**Rev00**

***TURNSTONE ECOLOGY LIMITED***

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## ***SURVEY AND REPORT VALIDITY***

It is important that planning decisions are based on up-to-date ecological reports and survey data. However, it is difficult to set a specific timeframe over which reports or survey data should be considered valid, as this will vary in different circumstances. In some cases there will be specific guidance on this (such as for the age of data which may be used to support an protected species licence application) but in circumstances where such advice does not already exist, the Chartered Institute of Ecology and Environmental Management (CIEEM) has provided the general advice set out below.

<b><i>Age of Data / Survey / Report</i></b>	<b><i>Validity</i></b>
<b>Less than 12 months</b>	Likely to be valid in most cases.
<b>12-18 months</b>	Likely to be valid in most cases with the following exceptions: <ul style="list-style-type: none"> <li>Where a site may offer existing or new features which could be utilised by a mobile species within a short timeframe;</li> <li>Where a mobile species is present on site or in the wider area, and can create new features of relevance to the assessment; and</li> <li>Where country-specific or species-specific guidance dictates otherwise.</li> </ul>
<b>18 months to 3 years</b>	A professional ecologist will need to undertake a site visit and then review the validity of the report. Some or all of the other ecological surveys updated.
<b>Protected Species Licensing</b>	Licence applications usually only possible using data less than 2 years old

The likelihood of surveys needing to be updated increases with time and is greater for mobile species or in circumstances where the habitat or its management has changed significantly since the surveys were undertaken. Factors to be considered include (but are not limited to):

- Whether the site supports, or may support, a mobile species which could have moved on to site, or changed its distribution within a site;

- Whether there have been significant changes to the habitats present (and/or the ecological conditions/functions/ecosystem functioning upon which they are dependent) since the surveys were undertaken, including through changes to site management; and

- Whether the local distribution of a species in the wider area around a site has changed (or knowledge of it increased), increasing the likelihood of its presence.

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# 1 INTRODUCTION

## 1.1 Purpose of Report

This Ecological Assessment report has been completed in connection with a proposed mixed-use development on land off Brick Kiln Road, Raunds (OS Grid Reference: SP 99804 73595). The development proposals are spread across three parcels (Site C, Site D and Site E), owned by two separate landowners. For the purpose of this report only Site C is discussed, however Sites D and E are brought in for context if required. The location of the proposed development site is shown in *Figure 1* and the proposed development plans are fully detailed in *Section 4*.

The site survey was carried out on the 6<sup>th</sup> April 2023 by Turnstone Ecology Ltd and consisted of a Phase 1 Habitat Survey and a Protected Fauna Survey and Habitat Suitability Assessment.

This report details survey and assessment methodology and the results of a desk-based study and on site surveys. It also provides an assessment of potential ecological impacts and appropriate mitigation to offset any ecological impacts associated with the proposal and to satisfy national and local planning policies.

*Figure 1. Location of proposed development*



## 1.2 Ecological Context

The proposed development consists of the construction of a mixed use development, across three field compartments (Site C, D and E). For Site C, the intended usage is a residential area with associated access routes. The site sits in formerly grazed fields on Brick Kiln Road, to the north of Raunds, Northamptonshire. There is existing access to the site via the farmyard to the south of the Site, and gateways into the fields.

The Site is composed of two field compartments. Both fields are formerly grazed improved grassland, however the easterly field has been grazed less recently and has areas of more diverse sward. Both fields are bordered primarily by hedgerows, with areas of stock fencing also present. A wet ditch runs along the southern half of the hedgerow dividing the two fields. Two mature Ash (*Fraxinus excelsior*) trees were present, one within the central hedgerow, and one in the northern hedgerow. Beyond the southern boundary of the site is Brick Kiln Road, separating the Site from the village of Raunds.

The surrounding area consists of arable crops and livestock grazed fields, as well as residential and commercial properties. The A45 lies 1 km to the west of the Site.

## 2 METHODS

### 2.1 Desk-based Study

Information relating to designated sites, sites where European Protected Species (EPS) Licences have been granted between 2009 and 2022 and historic records of protected species within 2 km of the proposed development site will have been obtained from Magic ([www.magic.gov.uk](http://www.magic.gov.uk)) and other freely available information on the internet, such as planning portals and species distribution maps.


Any species-specific historic records are detailed within the relevant species accounts in the *Results* section.

### 2.2 Phase 1 Habitat Survey

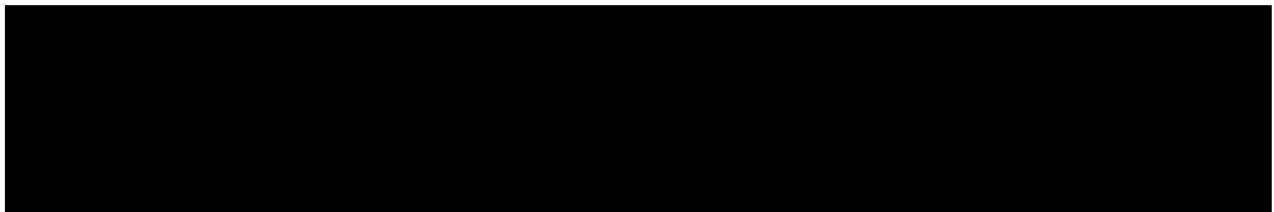
The survey methods were based on the Phase 1 Habitat Survey approach (Joint Nature Conservation Committee 2003), which is a standardised method to survey main habitat types. Plant nomenclature in this report follows Rose (*Revised Edition 2006*) for native, naturalised, and garden varieties of vascular plant. Introduced species and garden varieties are not always identified.

### 2.3 Protected Fauna Survey and Assessment

The habitats on site were assessed for suitability for protected fauna that occur in the region and obvious signs and incidental sightings of protected species were noted where present. Taking into consideration the geographical region and habitat types on and adjacent to site, the protected species and species groups that could be encountered are listed below.

- 
- Bat species
- Nesting birds
- Great Crested Newts
- Reptile species
- Otter and Water Vole

Details of initial survey methods for each relevant species are given below.





### 2.3.2 Bats

Any buildings and trees on or adjacent to the site were visually surveyed to assess them for their potential to support roosting bats, although a thorough inspection of all potential roosting features would not be undertaken as part of the Phase 1 survey.

Habitats were assessed for their suitability for use by foraging or commuting bats. Areas of particular interest vary between species, but generally include sheltered areas and those habitats with good numbers of insects, such as woodland, scrub, hedges, watercourses, ponds, lakes and more species-rich or rough grassland.

### 2.3.3 Nesting birds

Habitat that might be used by nesting birds was identified and actively nesting birds or evidence of nesting birds noted where present.

Different bird species use buildings, trees and shrubs, undergrowth or even open fields for nesting and suitability of the site for use by a range of nesting bird species was considered.

### 2.3.4 Great Crested Newt

The suitability of any aquatic and terrestrial habitat on the site, and in the immediate vicinity, was assessed for suitability for use by Great Crested Newts (*Triturus cristatus*). Great Crested Newts are known to travel up to 500 m between breeding ponds and suitable terrestrial habitat, so a desk-based search was undertaken for any ponds up to 500 m from the site using OS maps and aerial imagery. The terrestrial habitat between the site and these ponds, and therefore connectivity to the site, was also considered.

If required and where access allowed, ponds were assessed using the Habitat Suitability Index (HSI) developed by Oldham *et al.* (2000), which is derived from systems developed by the US Fish and Wildlife Service. It is a numerical index, between 0 and 1, where 0 indicates unsuitable habitat and 1 represents optimal habitat. The HSI for the Great Crested Newt uses ten factors (suitability indices (SI) 1 to 10), which are thought to affect Great Crested Newts:

- geographic location (SI 1);
- surface area (SI 2);
- hydrology (drying) (SI 3);
- water quality (SI 4);
- shade (SI 5);
- presence of water fowl (SI 6);
- presence of fish (SI 7);
- number of adjacent water features (SI 8);
- terrestrial habitat (SI 9); and
- macrophyte cover (SI 10).

Each factor is scored using field and desk-based survey. These ten scores are then converted to SI scores using a scale from 0.01 to 1 from graphs given in Oldham et al. (2000) and a HSI result is calculated using the following formula:

$$\text{HSI} = (\text{SI1} \times \text{SI2} \times \text{SI3} \times \text{SI4} \times \text{SI5} \times \text{SI6} \times \text{SI7} \times \text{SI8} \times \text{SI9} \times \text{SI10})^{1/10}$$

Further research by Brady (unpublished) has developed a system for using HSI scores to define pond suitability for Great Crested Newts according to the following categories.

HSI	<0.5	= poor
HSI	0.5 – 0.59	= below average
HSI	0.6 – 0.69	= average
HSI	0.7 – 0.79	= good
HSI	> 0.8	= excellent

HSI cannot guarantee the presence or absence of Great Crested Newts however, there is a positive correlation between HSI scores and presence and abundance. Generally, ponds with high HSI scores are likely to support larger populations. The relationship is however not sufficiently precise to conclude that any pond with a high HSI will support newts in high populations, or that any pond with a low score will support low numbers of newts or no newts at all.

### 2.3.5 Reptiles

The site was assessed for suitability for use by widespread species of reptiles, with particular attention paid to those features that could be used as basking areas (*e.g.* south-facing slopes), hibernation sites (*e.g.* banks, walls, piles of hardcore) and opportunities for foraging (*e.g.* rough grassland and scrub). The site was assessed for its suitability for the commoner reptile species which have broadly similar habitat requirements but more specific requirements include those shown below (Beebee & Griffiths 2000).

Common Lizards (*Zootoca vivipara*) use a variety of habitats from woodland glades to walls and pastures, although one habitat they use is brownfield sites

Slow-worms (*Anguis fragilis*) use similar habitats to Common Lizards, and are often found in rank grassland, gardens and derelict land

Grass Snakes (*Natrix natrix*) have broadly similar requirements to Common Lizards but with a greater reliance on ponds and wetlands, where they prey on amphibians

Adder (*Vipera berus*) use a range of fairly open habitats with some cover, but are most often found in dry heath

## 2.4 Constraints

April is an ideal time to undertake Phase 1 surveys, as the majority of plants are visible and identifiable and animal signs are easier to detect. However, dense vegetation can inhibit searches for early flowering plants and certain animal signs, such as setts and holes. For a site of this size, location, and habitat

composition it is considered that the time of year of the survey will not have had a significant effect on the survey results or assessment of the site.

## 2.5 Criteria for Assessment

The scientific value of habitats for nature conservation is assessed according to widely accepted criteria of which the most important are naturalness, extent, rarity, and diversity.

The assessment of impacts is based on the principles within Chartered Institute of Ecology and Environmental Management (CIEEM) Environmental Impact Assessment (EIA) Guidance (2018) which assesses the impacts of the proposal on ecological receptors taking into consideration extent, duration, reversibility, timing, frequency, and certainty.

Mitigation and enhancement is designed to reduce the level of impact upon receptors and provide ecological enhancement in order to meet current legislation and planning policy. The information below has therefore been considered during assessment.

Criteria that have been developed to assist in the identification of statutory Sites of Special Scientific Interest (SSSIs) (JNCC 2013)

Habitats and species of Principal Importance included under Section 41 (England) and Section 42 (Wales) of the Natural Environment and Rural Communities (NERC) Act 2006

The legal status of habitats and species according to the EU ‘Habitats’ Directive 1992

CIEEM Guidelines (2018) for assessing the value of ecological receptors within a defined geographical context using the following categories: international (*i.e.* Europe); UK and national (England); regional; county; Unitary Authority; local or parish; and zone of influence. Receptors are identified as ‘important’ at these levels, or as ‘not important’

Species protected by European Directives

Species protected by the *Wildlife and Countryside Act 1981* (as amended)

Other species listed as scarce or notable in literature issued by conservation organisations or learned societies *e.g.* vascular plant species listed in Stewart *et al.* (1994) and Red and Amber List Birds of Conservation Concern (Stanbury *et al.* 2021)

Local Wildlife Site selection criteria

National Policy Planning Framework (NPPF), 2021

BS42020:2013 – Biodiversity Code of practice for planning and development

Protected species handbooks and best practice guidelines

The Northamptonshire Local Biodiversity Action Plan (BAP), which identifies and prioritises local habitats and species of conservation importance. These habitats and species are stated as:

Habitats: arable field margins, eutrophic standing water, floodplain grazing marsh, hedgerows, lowland calcareous grassland, lowland dry aid grassland, lowland fen, lowland heathland, lowland, meadow, lowland mixed deciduous woodland, open mosaic habitats on previously developed land, ponds, reedbed, rivers traditional orchards, wet woodland, and wood-pasture and parkland

Birds: Barn Owl (*Tyto alba*), Nightingale (*Luscinia megarhynchos*)

Invertebrates: Black Hairstreak (*Satyrium pruni*), Lime Bark Beetle (*Emoporus tiliae*)

Amphibians: Palmate Newt (*Triturus helveticus*)

Plants: Black poplar (*Populus nigra betuifolia*), Lichen sp. (*Physcia clementii*), Plot's Elm (*Ulmus plotii*)

### 3 RESULTS

#### 3.1 Desk Study

##### 3.1.1 Designated Sites

There is one designated site within 2 km of the proposed development site: Upper Nene Valley Gravel Pits Special Protection Area (SPA), Site of Special Scientific Interest (SSSI) and RAMSAR. The designated site is approximately 2 km from the Site, with only a small corner of the designated site entering the search area. The SPA, SSSI and Ramsar site is a wetland site of International Importance and is regularly used by more than 20,000 water birds as well as by 2.3% of the UK Golden Plover (*Pluvialis apricaria*) population<sup>1</sup>.

##### 3.1.2 Protected Species Mitigation Licence Sites

A desk-based search for Protected Species Mitigation Licences was completed using DEFRA's MAGIC database. Details of issued licences are detailed in the relevant sections below however in summary a single licence was issued for Great Crested Newts.

#### 3.2 Ecological Surveys

Phase 1 habitat types were recorded within and immediately adjacent to the proposed development sites are listed below and can be seen in *Figure 2*.

- Improved grassland
- Hedgerows
- Trees
- Pond
- Wet Ditch

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<sup>1</sup> <https://www.northampton.gov.uk/info/200205/planning-for-the-future/2105/upper-nene-valley-gravel-pits-spa-spd>

Figure 2. Aerial image of fields / habitats within and immediately adjacent to the proposed development site (red line boundary)



© GoogleMaps; accessed June 2023

The site or immediately adjacent areas contain habitat suitable for the protected species listed below.

- Badger
- Bats
- Otter
- Water Vole
- Nesting birds
- Great Crested Newt
- Reptiles

### 3.3 Phase 1 Habitat Survey

#### 3.3.1 Improved grassland

The proposed residential development will be constructed within the two field compartments (*Plate 1*).

The improved grassland of both field compartments support a mix of common grass species, with the dominant species being Perennial Rye-Grass (*Lolium perenne*) and additional species including Cock's-foot (*Dactylis glomerata*), False Oat-grass (*Arrhenatherum elatius*), Red Fescue (*Festuca rubra*), Rough meadow-grass (*Poa trivialis*), Yorkshire Fog (*Holcus lanatus*) and Barren Brome (*Anisantha sterilis*).

Herb species within the easterly field were limited and included Bristly Oxtongue (*Helminthotheca echioides*), White Clover (*Trifolium repens*), Red Clover (*Trifolium pratense*) and Creeping Buttercup (*Ranunculus repens*).

In the westerly field there were some areas with a more diverse sward which included Hairy Bittercress (*Cardamine hirsuta*), Cow Parsley (*Anthriscus sylvestris*), Broad-leaved Dock (*Rumex obtusifolius*), Cut-leaved Cranesbill (*Geranium dissectum*), Ribwort Plantain (*Plantago lanceolata*), Common Dandelion (*Taraxacum officinale*) and Red Dead Nettle (*Lamium purpureum*).

*Plate 1. The improved grassland where construction of the residential development is proposed.*



### 3.3.2 Hedgerows

Hedgerows form the boundaries of both fields (*Plates 2-4*). Hedgerows were dominated by Blackthorn (*Prunus spinosa*), with scattered Ash (*Fraxinus excelsior*) and Elder (*Sambucus nigra*). All hedgerows were intensively managed, with some limited floral diversity at the hedgerow bases including the following species: Bramble (*Rubus fruticosus*), Common Nettle (*Urtica dioica*), Dog Rose (*Rosa canina*), Cleavers (*Galium aparine*), Spear Thistle and Common Hogweed (*Heracleum sphondylium*).

The central hedgerow (H1) had a partially wet ditch in association with the base of the hedgerow. The hedgerow itself was a maximum height of 2m and a width of 2m and small areas of scattered scrub which was primarily Bramble. The remainder of the hedgerows across the site are over 2m in height and 2m in width, and had been recently flailed.

*Plate 2 and 3. The hedgerows on the northern boundary of the fields, with Plate 2 showing the easterly field, and Plate 3 showing the westerly field boundaries.*



*Plate 4. The hedgerow running centrally (H1) between the two fields.*



### 3.3.3 Trees

Two mature Ash (*Fraxinus excelsior*) trees are located within the hedgerows, one within the central hedgerow (T1) and one on the northerly hedgerow (T2) (*Plate 5*). T1 was a younger and healthier Ash, while T2 had a large, hollow cavity within the trunk of the tree.



Plate 5 and 6. Mature Ash trees: Plate 5 shows T1 and Plate 6 shows T2.



### 3.3.4 Ponds

There is one pond within the site boundary, in the centre of the eastern field. This pond (P1) was a shallow depression in the centre of the field holding a small amount of water in April. P1 was fully dry by May and has remained dry.

Two additional ponds are located within 500m of the Site. Other ponds were noted through aerial inspection but these dry at the time of completing the April survey. Further descriptions of the ponds are given in Section 3.4.4 of this report.

### 3.3.5 Wet Ditch

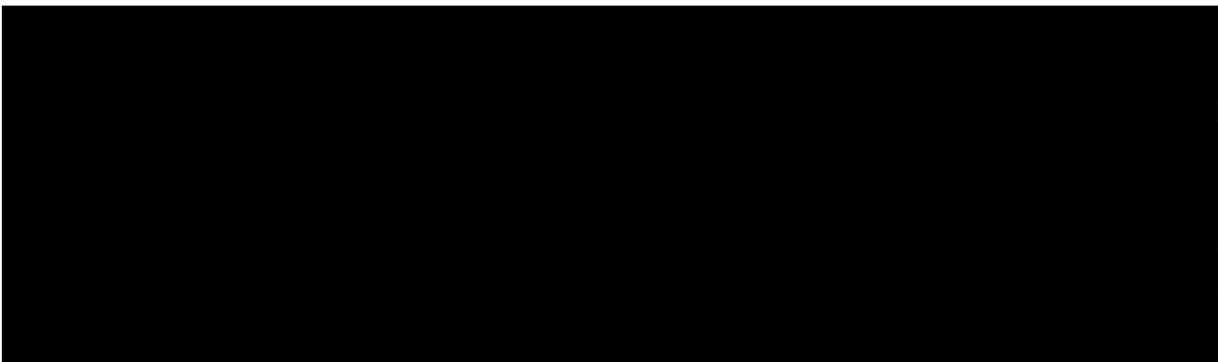
A partially wet ditch ran in association with the central hedgerow. The ditch was a southerly running, shallow stream of water. The water was high in sediment with a moderate flow and had signs of pollution from agricultural run-off.

The ditch was heavily overgrown by grass and herb species, primarily umbellifer species such as Cow Parsley (*Anthriscus sylvestris*) and Common Hogweed (*Heracleum sphondylium*), and Epilobium species including Rosebay Willowherb (*Chamaenerion angustifolium*) and Greater Willowherb (*Epilobium hirsutum*).

*Plate 7. Wet ditch running down the centre of the site, overgrown with vegetation.*



### 3.4 Protected Fauna



#### 3.4.2 Bats

Four records of bats were recorded within 2 km of the site, all Common Pipistrelle (*Pipistrellus pipistrellus*).

Two mature Ash trees are present within the Site boundary. One (T1) lay within the central hedgerow and did not contain any suitable roosting features. The second (T2) lay within the northern hedgerow of the western field and contained suitable bat roosting features, including large cavities to the centre of the tree and notable splits in the branches. No other trees or buildings were present within the Site boundary.

The hedgerows present on site offer optimal foraging and commuting opportunities for bat species whilst the grassland habitat provides some sub-optimal foraging opportunities.

### 3.4.3 Otter and Water Vole

No records of Otter (*Lutra lutra*) or Water Vole (*Arvicola amphibius*) are present within 2.km of the Site.

The wet ditch running down the centre of the site provides some very limited commuting habitat for Otter and foraging habitat for Water Vole. No evidence of Otter or Water Vole were found during the survey and they have been excluded as a potential ecological receptor due to the lack of local records and the general suitability of aquatic habitats within Site C.

### 3.4.4 Birds

Habitats suitable for breeding birds include the hedgerows and scattered trees around the boundaries of the proposed development site.

During the survey, a Little Owl *Athene noctua* was flushed from T2, which could suggest a nest within the trunk of this tree.

### 3.4.5 Great Crested Newt

There are 27 known records of Great Crested Newts (GCN) within 2 km of the proposed development site. Previous GCN surveys in 2015 have shown Great Crested Newt within Pond 1, which is within the boundary of the Site. In addition to which there has been a single licence issued for the destruction of GCN resting places (2015-7529-EPS-MIT). This licence was issued for a residential development to the west of the site.

There is one pond (Pond 1) within the boundary of Site C, which held minimal water at the time of survey and subsequently dried out, and a further six ponds shown on OS mapping/aerial images within 500m of the proposed development site (Figure 3). Only three ponds (1, 2 and 3) were suitable for assessment. The additional ponds were all found to be dry.

Figure 3. Location of Ponds within 500m of the Site



All suitable ponds within 500m of the Site were assessed using the Habitat Suitability Index (HSI) for appropriateness for Great Crested Newt (GCN).

Table 1. HSI results for suitable ponds.

Pond Number	Location	Suitability Index Factor	Suitability
1	SP 99718 73738	0.40	Poor
2	SP 99947 73768	0.52	Below Average
3	SP 99999 74171	0.41	Poor

Pond 1 (*Plates 8 and 9*) is located in the centre of the easterly field. The pond is seasonally wet and appears to have been previously used as a livestock water source. This pond was more of a flooded depression in its current state and is heavily poached with no marginal vegetation. In the proceeding month, the pond had dried out and is reported to only hold water following heavy rain.

Plate 8 and 9. Pond 1, within the Site, in the centre of the easterly field. Plate 8 showing the pond in April and Plate 9 showing the pond in May.



**HSI Assessment**

Suitability Index (SI) Factor	Category	Score
SI1	Location	1
SI2	Pond Area	0.1
SI3	Pond Drying	0.1
SI4	Water Quality	0.01
SI5	Shade	1
SI6	Fowl	1
SI7	Fish	1
SI8	Ponds	1
SI9	Terrestrial Habitat	0.67
SI10	Macrophytes	0.3
HSI Index Value		0.40
HSI		Poor

Whilst Pond 1 has an HSI score of *Poor* it has previously been shown to support Great Crested Newts (2015).

Pond 2 (Plate 10) was located within the industrial estate 150m east of the Site. This pond was fenced and contained a number of small ornamental fish. Marginal vegetation included Pendulous Sedge (*Carex Pendula*), Marsh Marigold (*Caltha palustris*), Hard Rush (*Juncus inflexus*), Flag Iris (*Iris pseudacorus*) and scrub species such as Bramble.

Plate 10. Pond 2, within the industrial estate, 150m east of the Site.



**HSI Assessment**

Suitability Index (SI) Factor	Category	Score
SI1	Location	1
SI2	Pond Area	0.2
SI3	Pond Drying	0.9
SI4	Water Quality	1
SI5	Shade	1
SI6	Fowl	1
SI7	Fish	0.01
SI8	Ponds	1
SI9	Terrestrial Habitat	0.33
SI10	Macrophytes	0.5
HSI Index Value		0.52

**HSI Below Average**

Pond 3 (*Plate 11*) was located 450m north of the Site within an agricultural field. The pond was surrounded by scrub and was heavily shaded, resulting in marginal vegetation that was limited to ruderal species such as Common Nettle.

Plate 11. Pond 3, within an arable field 450m north of the Site, heavily shaded.



**HSI Assessment**

Suitability Index (SI) Factor	Category	Score
SI1	Location	1
SI2	Pond Area	0.2
SI3	Pond Drying	1
SI4	Water Quality	0.01
SI5	Shade	0.2
SI6	Fowl	1
SI7	Fish	1
SI8	Ponds	1
SI9	Terrestrial Habitat	1
SI10	Macrophytes	0.3
HSI Index Value		0.41

**HSI**

**Poor**

The hedgerows and wet ditch provide some suitable habitat for foraging and dispersal of Great Crested Newts. As the grassland is managed, it is possible that newts could disperse across this area but hibernating and foraging is unlikely.

### **3.4.6 Reptiles**

There are no historic records of reptiles within 2 km of the proposed development site.

The hedgerows on site offer suitable habitat for foraging and dispersing reptiles. As the grassland is recently grazed and currently managed, it is unlikely that reptiles use this habitat for foraging or resting. Habitats within the wider area are of limited suitability for reptiles due to the presence of the road and residential areas. The agricultural areas to the north may provide some suitability depending on management practises.



## 4 EVALUATION

### 4.1 Summary of Impacts

The proposed development involves the construction of residential properties and associated vehicular access (*Figure 4*). Works will mainly affect ecologically poor improved grassland and the pond (P1). All trees within the Site boundary are to be retained, as are the hedgerows.

*Figure 4. Proposed development plan*



The Northamptonshire BAP lists 19 Habitat Action Plans in total, of which two are relevant to this Site: ponds and hedgerows, both of which were present within the boundary of the Site. Neither of these listed habitats will be directly affected by the proposed development, with the development limited to areas of poor-quality habitat only.

The Northamptonshire Local BAP also lists eight species which are not UK Priority species but have been judged to have local significance. None of these species were noted during the site visit, however these species could be indirectly affected by the proposed development and appropriate project design and mitigation will need to be adhered to ensure there will be no negative impacts on them as a result of the proposals. Ecological enhancements are also recommended to ensure the proposals result in a positive ecological gain which is in accordance with the National Planning Policy Framework.

#### **4.1.1 Designated Sites**

There is one designated site within 2 km of the Site: Upper Nene Valley Gravel Pits (SSSI, RAMSAR, SPA, LNR).

Upper Nene Valley Gravel Pits SPA, SSSI and Ramsar is primarily designated due to its wintering bird populations, with particular significance for Golden Plover. As the proposed development site does not support suitable habitat for these species, due to historical grazing and the current length of the grass, it is unlikely Golden Plover, or any other wading species would use the Site as a regular foraging location. Taking into consideration the scale and magnitude of the proposals it is considered certain that the proposed works will not result in a significant impact on this site. Additionally the proposal is for a small residential development and as such this will unlikely cause any significant increase to visitor pressures on the designated sites.

## **4.2 Habitats and Flora**

### **4.2.1 General**

The proposed development consists of the construction of residential land and associated vehicular access tracks. This development will directly affect areas of poor-quality improved grassland, and the pond (P1). Ponds outside the site boundary will remain unaffected by the proposed works.

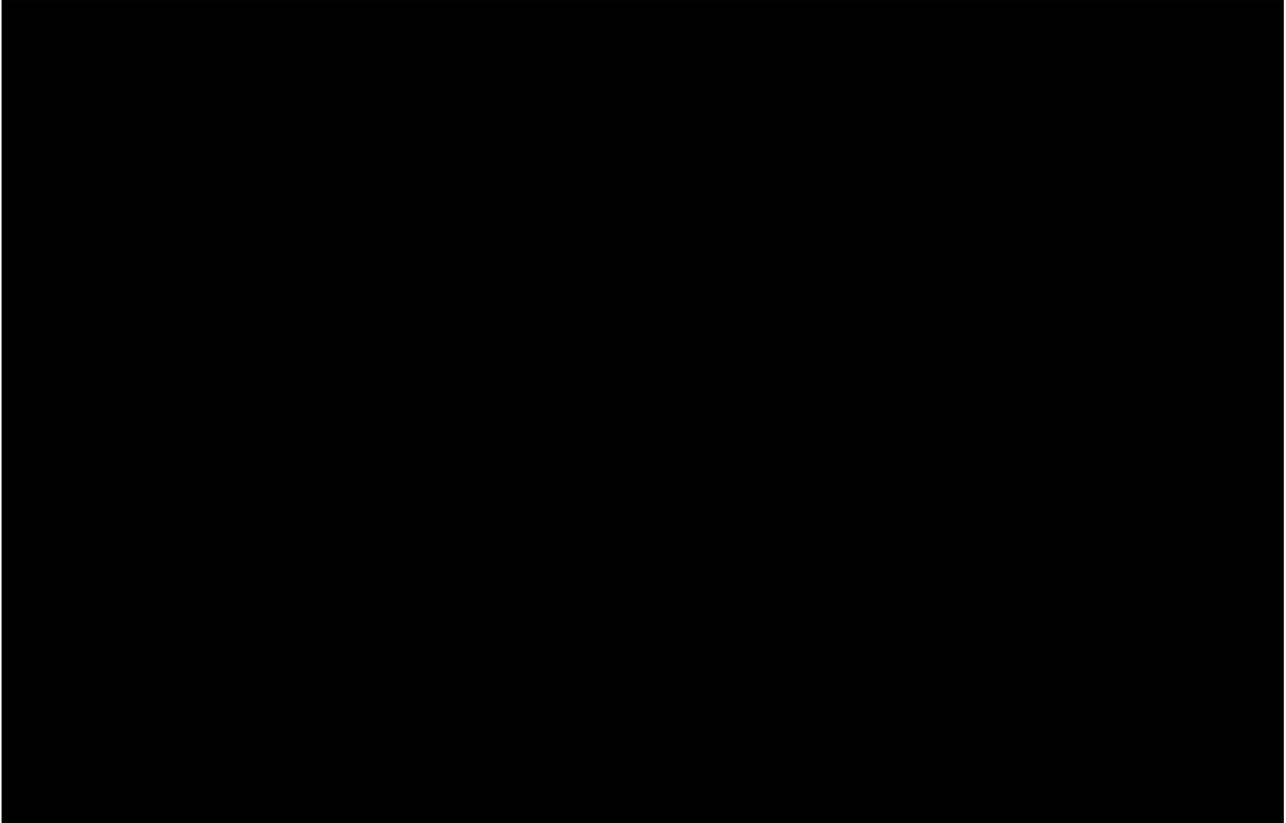
### **4.2.2 Mitigation**

The two mature Ash trees (T1, T2) and boundary hedgerows will remain unaffected by the proposed works and the proposed areas of groundworks will need to be confined to areas that will not impact on the root systems of these trees and hedgerows. An appropriate buffer (as detailed in BS5837:2012) will need to be established and maintained in order to ensure no direct or indirect impact on all retained trees and hedgerows.

It is recommended the retained area of grassland in the north-west of the Site be used to provide space for a Pond to compensate for the loss of P1. The newly created pond will be designed for wildlife, including Great Crested Newts and will be planted with marginal plant species. The remainder of this space could be converted to semi-improved wildflower meadow grassland and, following on from initial seeding, left unmanaged, so it reverts to a grassland / scrub habitat. This will provide ideal foraging opportunities for invertebrates, breeding birds, bats as well as reptiles and amphibians.

### 4.3 Protected Fauna

No evidence of other protected species was found within or immediately adjacent to the proposed development footprint during the survey. There are however habitats with suitability for bats, nesting birds, Great Crested Newt, and reptiles within or adjacent to the proposed construction areas.



#### 4.3.2 Bats

There are no features suitable for roosting bats that will be directly affected by the proposals.

The hedgerows provide optimal foraging habitat for bats and the mature Ash trees that are present along the northern and central boundaries of the Site are likely to provide suitable roosting habitat. The inclusion of bat boxes will offer additional roosting opportunities for bat species, improving the site for bats post-development. Two Schwegler 2F (or equivalent) are to be located on mature trees where possible, which may be outside of the development area but within the ownership area. Additionally, bat boxes should be incorporated into housing where possible, with four flat bat boxes to be placed on a south/south-east/south-westerly aspect around the development.

A lighting plan showing the location and specification for any proposed lights on the site during and post construction should be produced. The lighting plan should reflect the Bat Conservation Trust Bats and Lighting in the UK guidance (2018) and should include the following:

- Direct construction lighting away from boundary hedgerows and tree lines to ensure that suitable roosting, foraging, and commuting habitats remain unlit.

Lighting will be used only where essential during the construction phase and must not illuminate hedgerows, pond, or fields. Between the hours of dusk to dawn all lighting will be turned off and construction works cease to reduce the impact on nocturnal and diurnal wildlife.

No lighting of over 2000 lumens (150 W) to be used for fixed/permanent lighting on site in accordance with the Bat Conservation Trust Bats and Lighting in the UK guidance (2020).

Any new, permanent external lighting must lack UV elements when manufactured, LED luminaires should be used where possible due to their sharp cut-off and ideally have warm white spectrum, avoiding blue lighting elements. Luminaires should feature peak wavelengths higher than 550nm to avoid the component of light most disturbing to bats.

Any external security lighting should be set on motion-sensors and short (1 minute) timers. Accessories such as baffles, hoods or louvres can be used to reduce light spill and direct it only to where it is needed. Metal halide, fluorescent lighting sources are not to be used.

### 4.3.3 Birds

The hedgerows and trees are all suitable for nesting birds. It is recommended that hedgerows around the Site are planted up with native fruit and flower bearing species which will provide additional foraging for birds.

The presence of ground nesting birds in the areas of improved grassland affected by the proposals is considered unlikely as the field is under regular management. Additionally, the fields are small and bounded by hedgerows and lines of fencing which makes the fields less suitable for ground nesting birds.

Any habitat creation, enhancement, and management, such as the planting and management of hedgerows and planting of trees, would only have a positive impact on nesting birds at the site. It is suggested that two general purpose bird boxes should be located on mature trees (adjacent to the bat boxes) where possible, which may be outside of the development area but within the ownership area. Additionally, it is proposed four House Sparrow (*Passer domesticus*) and four Starling (*Sternus vulgaris*) boxes should be erected on the residential buildings which would provide new nesting habitats across the Site. In addition a minimum of four Swift (*Apus apus*) nesting boxes should be installed at eave height along with four House Martin (*Delichon urbicum*) nesting cups, also installed at eave height. The Swift and House Martin nesting features should be placed on one or two houses in fairly close proximity as these species are loosely colony breeders.

### 4.3.4 Great Crested Newt

There are 27 records of Great Crested Newts within 2 km of the proposed development site. There are two suitable ponds within 500m of the Site in addition to the on-site pond (P1) which is primarily dry. Additional ponds within 500m are either dry or substantial barrier to the movement of Great Crested Newt is present.

Pond 1 is within the Site boundary and is due to be lost throughout development. Previous surveys have shown GCN within this pond, however as this pond contained limited water at the time of survey, dried up shortly after and is reported to only hold water after heavy rain, it is unlikely that GCN would have used the pond for breeding in 2023 and is only suitable for occasional use.

Due to the previously reported GCN within the Site, it is recommended that the Site is put forward for the District Level Licensing scheme run by NatureSpace. The north-west corner of the landholding could hold a new pond, which would be designed for wildlife however NatureSpace would be able to provide further designs and recommend planting lists for a new pond, as well as recommendations for the habitat immediately surrounding the ponds.

In addition to this, the following precautionary mitigation measures will be put in place:

Affected and adjacent grassland to be kept short pre- and during the proposed works to deter amphibians and reptiles from occurring in this area.

Any excavations will be completed during daylight and backfilled (and suitably compacted) before nightfall or if this is not possible a ramp (or similar structure) will be provided to allow animals an opportunity to escape. Checks of any excavations for animals will also be undertaken prior to backfilling.

During construction, any storage of piles of materials and excavated earth on the site should be kept to a minimum and stored away from the boundary treelines and raised (e.g., on pallets) to deter Great Crested Newt from using them for temporary cover. Excavated earth should be compacted on the day it is excavated and stored on site for a maximum of three nights.

If a Great Crested Newt is found during any stage of the above works, all works must cease and an Ecologist called to provide advice and/or attend site. In the event of a Great Crested Newt being found Natural England (NE) will need to be contacted to discuss an acceptable course of action.

#### **4.3.5 Reptiles**

Optimal reptile hibernating, dispersing and/or foraging habitat is limited to the hedgerows around the development site with the grassland providing limited suitable habitat due to the management practises of the grassland. Overall connectivity between suitable reptile habitat on site and more extensive optimal habitat, in the wider area, is relatively poor.

The presence of reptiles within the main proposed works areas is considered unlikely but it is appropriate that safe working methods are put in place to ensure no reptiles are harmed. These methods should include not allowing the grass to grow to a level where the foraging potential of the Site increases.

During construction, materials should be stored on pallets to prevent reptiles, if accessing the site, from being crushed when they are moved and excavated earth on the site should be kept to a minimum and away from the boundaries to deter reptiles from using it for temporary cover.

Any habitat enhancements for Great Crested Newts, including the provision of suitable terrestrial habitats will be of benefit for commonly occurring reptiles.

#### **4.3.6 Other Species**

Hedgehog (*Erinaceus europaeus*) holes should be cut in to fencing panels or Hedgehog friendly gravel boards should be used to allow this species to move freely through the completed residential development.

## 5 LEGAL PROTECTION

This section briefly describes the legal protection afforded to the protected species referred to in this report. It is for information only and is not intended to be comprehensive or to replace specialised legal advice. It is not intended to replace the text of the legislation but summarises the salient points.

### 5.2 Bats

All species of British bat are protected by *The Wildlife and Countryside Act 1981* (as amended) extended by the *Countryside and Rights of Way Act 2000*. This legislation makes it an offence to:

- intentionally kill, injure or take a bat;
- possess or control a bat;
- intentionally or recklessly damage, destroy or obstruct access to a bat roost; and
- intentionally or recklessly disturb a bat whilst it occupies a bat roost.

Bats are listed on *Schedule 2* of the *Conservation of Habitats and Species Regulations 2010 (SI 2010/490)* under *Regulation 41*. This legislation makes it an offence to:

- deliberately capture, injure or kill a bat;
- deliberately disturb bats in such a way as to be likely to (a) impair their ability to: (i) to survive, to breed or reproduce, or to rear or nurture their young, or (ii) in the case of animals of a hibernating or migratory species, to hibernate or migrate; or b), to affect significantly the local distribution or abundance of the species to which they belong; and
- damage or destroy a breeding site or resting place of a bat; and
- possess, control, transport, sell, exchange a bat, or offer a bat for sale or exchange.

All bat roosting sites receive legal protection even when bats are not present.

Where it is necessary to carry out an action that could result in an offence under the *Conservation of Habitats and Species Regulations 2010 (SI 2010/490)* it is possible to apply for a Protected Species

Mitigation Licence from Natural England (NE). Three tests must be satisfied before this licence (to permit otherwise prohibited acts) can be issued:

Regulation 53(2)(e) states that licences may be granted to “preserve public health or public safety or other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment.”

Regulation 53(9)(a) states that a licence may not be granted unless “there is no satisfactory alternative”.

Regulation 53(9) (b) states that a licence cannot be issued unless the action proposed “will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range”.

### 5.3 Nesting Birds

All species of bird are protected under *Section 1* of the *Wildlife and Countryside Act 1981* (as amended). The protection was extended by the CRoW Act.

The legislation makes it an offence to intentionally:

- kill, injure or take any wild bird;
- take, damage, or destroy the nest of any wild bird while that nest is in use or being built; or
- take or destroy an egg of any wild bird.

Certain species of bird are listed on *Schedule 1* of the *Wildlife and Countryside Act 1981* (as amended) and receive protection under *Sections 1(4)* and *1(5)* of the Act. The protection was extended by the CRoW Act. The legislation confers special penalties where the above mentioned offences are committed for any such bird and also make it an offence to intentionally or recklessly:

- disturb any such bird, whilst building its nest or it is in or near a nest containing dependant young; or
- disturb the dependant young of such a bird.

### 5.4 Great Crested Newt

Great Crested Newt is listed on *Schedule 5* of the *Wildlife and Countryside Act 1981* (as amended), and receive full protection under *Section 9*. These species are also on *Schedule 2* of the *Conservation of Habitats and Species Regulations 2010 (SI 2010/490)* which gives them full protection under *Regulation 41*. Protection was extended by the *Countryside and Rights of Way Act 2000* (the CRoW Act).

Under the above legislation it is an offence to:

- kill, injure or take an individual of such a species;
- possess any part of such species either alive or dead;
- intentionally or recklessly damage, destroy or obstruct access to any place or structure used by such species for shelter, rest, protection or breeding;



intentionally or recklessly disturb such a species whilst using any place of shelter or protection;  
or  
sell or attempt to sell any such species.

The Great Crested Newt is included as a Priority Species in the UK Biodiversity Action Plan (UKBAP) and as a species of principal importance for the conservation of biological diversity in England under *Section 74* of the CRow Act.

## **5.5 Common Reptile Species**

Common Lizard, Grass Snake, Slow-worm, and Adder are listed under *Schedule 5* of the *Wildlife and Countryside Act 1981* (as amended), in respect of *Section 9(5)* and part of *Section 9(1)*. This protection was extended by the CRow Act.

Under the above legislation it is an offence to:

intentionally or deliberately kill or injure any individual of such a species; or  
sell or attempt to sell any part of the species alive or dead.