



**Popples Barrels Lane, Thurston
Preliminary Ecological Appraisal
Report**

**On Behalf of
Fabric First Architects**

Version 1 | June 2023



Rear of property where the majority of the work will take place.

Document Control

Version	Date	Produced by	Reviewed by	Notes
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Version 2	11/07/23	Kat Sturman BSc(Hons) Assistant ecologist		Amended as per the review notes.

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This report does not purport to provide legal advice. This report provides baseline ecological conditions for the aforementioned site and is considered relevant for a period of no more than 12 months from the date of the Site Visit.

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Ecological Risk Assessment



The following Ecological Risk Assessment provides an infographic summary of the Preliminary Ecological Appraisal of Popples Barrels Lane, Thurston. This includes the requirements, including further surveys or mitigation, necessary to comply with relevant legislation and policy. Enhancement measures are also provided in line with the National Planning Policy Framework¹. An assessment of potential impacts has been made based on the proposals for the Site, which include a single storey rear extension and single storey front entrance porch. **PEA Version 1 is based on a description of the proposed development and should be updated with a current proposal plan included prior to submission.** A plan of proposals is provided in Appendix 1: DC/23/01005.

This Eco RA is not intended as a substitute for reading the full report as set out in the proceeding pages.

Risk Code Key		
	High Risk	Ecological issue(s) requiring further survey work and/or mitigation prior to determination.
	Moderate Risk	Ecological issue(s) requiring mitigation without requiring further survey.
	Low Risk	No significant ecological issues identified. No further action required.

Risk Code	Factor	Comments and Actions Required	Timings
	Great crested newts	<p>The desk study returned no records of great crested newts within 1 km of the Site. A total of eight ponds were identified within 500 m of the proposed development. Habitats to be affected by the proposals are of very low suitability for great crested newts. During construction, temporary artificial refuge could be created, through storage of materials or stripped soil, drawing newts onto Site (if present in the area). This could result in the killing or injury of individuals and destruction of (artificial) refuge. Therefore, recommendations are made below.</p> <p>Requirements: A non-licensed method statement detailing control measures during pre-construction and construction phases should be produced. This will detail precautionary methods of working such as storage of materials and any requirement for an ecological clerk of works (EcCoW).</p> <p>Enhancements: partially buried log pile on mown grassland within the north-west corner of the blue line boundary.</p>	

Risk Code	Factor	Comments and Actions Required	Timings
	Habitats	<p>The Site is predominantly a detached residential building with three different roof heights. A gravel driveway to the north, concrete patio leading around to the east to a small area of close mown grassland and further patio to the south. A small section of close mown grassland to the south and gravel driveway to the north will be cleared to facilitate the development. All existing trees and hedgerows are to be maintained in the proposal plans.</p> <p>Requirements: No further requirements.</p> <p>Enhancements: two tubs to be added either side of the proposed porch on the north of the Site. This could include Lavender and flowering cherry.</p>	Design stage
	Bats	<p>The building onsite was assessed externally along with the two internal attics, sunroom and single storey wooden outbuilding. All were found to have Low potential for roosting bats. Within the wider blue line boundary, trees onsite were found to have Moderate suitability for roosting bats. All trees are to be retained in the current proposal plans. The development will not see a significant loss in foraging and commuting habitat.</p> <p>Requirements: Any lighting schemes to be installed during and post-construction must be designed to prevent unnecessary light spill onto the surrounding hedgerows and trees. Details are provided further in the report.</p> <p>Enhancements: Two Kent style bat boxes to be mounted on trees within the blue line boundary, at least 4m high, facing southeast or southwest with a clear line of flight.</p>	Pre and during construction
	Birds	<p>Modified grassland habitats within the site have foraging suitability for passerine birds. Within the wider blue line of the site hedgerows and scattered trees provide suitability for nesting and foraging for a wide range of birds.</p> <p>No bird nests were observed on the site during the Site visit.</p> <p>Requirements: No further requirements.</p> <p>Enhancements: One house sparrow terrace nest box integrated into the extension on the south of the site. They should be placed north or east facing and 4-5m high.</p>	Design stage

Risk Code	Factor	Comments and Actions Required	Timings
	Priority Species (Fauna and Flora)	<p>Hedgehogs may utilise the site for foraging and commuting.</p> <p>Requirements: Any small mammal disturbed during construction should be allowed to flee of their own volition or moved to the Site boundary. Any excavations or holes to be covered or fenced off overnight, or planks placed inside to create a means of escape.</p> <p>The development should seek to minimise the use of impermeable boundary fencing. This can be negated by ensuring that all boundaries are marked with hedgerows or permeable fencing; failing this, any impermeable fencing installed should have 13x13cm holes in the base to provide access.</p> <p>Enhancements: A hedgehog house could be installed in a quiet area of the Site, such as the eastern bordering hedgerow.</p> <p>A minimum of two bee bricks incorporated into the brickwork on the south extension. Bee Bricks can be used in place of a standard brick or block in construction to create habitat for solitary bees.</p>	
	Statutory and Non-Statutory Designated Sites	Discussed but no further action required.	
	Reptiles	<p>The Sites close mown grassland habitat may provide occasional dispersal habitat but does not provide a favored varied structure and is not of high value.</p> <p>Requirements: Discussed but no further action required.</p>	
	Badger	<p>The desk study returned no record for badger within 1km of the Site.</p> <p>No signs of badger are noted onsite, such as sett building, foraging or latrines. The Site may be used for commuting badgers.</p> <p>Requirements: Any holes or excavations created during the development should be securely fenced or backfilled overnight or during periods of inactivity onsite. Any open pipework should be securely fenced or blocked to prevent badgers becoming trapped during construction. If this is not possible, wood planks should be placed inside any excavations to provide a means of escape. This will also benefit small mammals that may be onsite.</p>	
	Water Vole, Invasive Species, otter, W C crayfish, hazel dormice	Discussed but no further action required.	

1 Introduction

1.1 Background

Practical Ecology Ltd were commissioned by Fabric First Architects to undertake a Preliminary Ecological Appraisal (PEA) of Popples Barrels Lane, Thurston, herein referred to as the 'Site'.

This report presents ecological information gathered during a desk study and an ecological walkover survey of the Site undertaken on 13th June 2023.

The purpose of this report is to provide baseline ecological information pertaining to the Site, alongside the rationale for required further surveys and mitigation as deemed appropriate to ensure compliance with legislation and policy, and recommend enhancement measures to achieve biodiversity net-gain in line with the NPPF¹.

Ecological baseline information for the Site is crucial to ensure potential effects of the development upon flora and fauna can be suitably managed. Furthermore, any constraints upon the proposed development of the Site, imposed by site ecology, can be assessed. Enhancement measures are presented which allow site biodiversity to be improved, whilst considering the legal requirements and best practice regarding protected species and/or habitats.

1.2 The Site

The Site is approximately 0.08 ha (central OS grid reference TL93567 65018, postcode IP31 3SF) and is located in Barrels Lane, Thurston, c.7km east of Bury St. Edmunds. The site comprises a detached residential building, gravel drive and gardens. Surrounding the Site is the remainder of the property's gardens, which include scattered trees and hedgerows, an ornate fish pond and car port. A Site boundary (red line) and associated wider landholdings (blue line) are shown/provided in Figure 1 below.

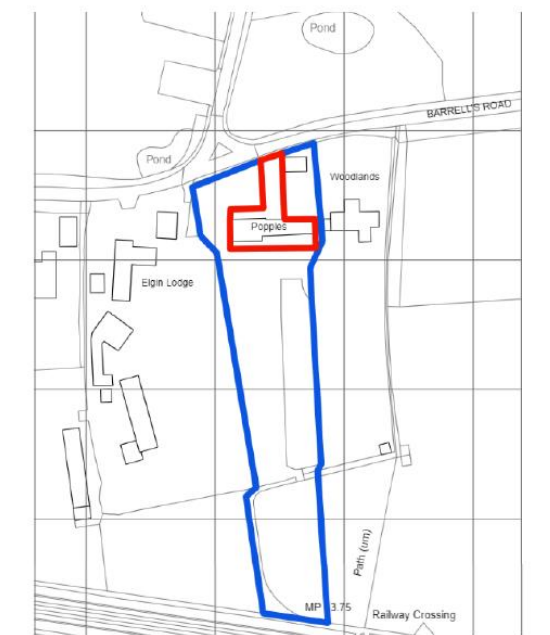


Figure 1: Site Boundary

1.3 Proposed Development

The proposals include demolition of existing single storey sunroom, single storey out building and covered outdoor area on the south of the Site., The development will include a single storey rear extension and a single storey enclosed porch to the front of the property.

A proposal plan has been included in Appendix 1 (Drawing number: Pre-Application enquiry).

2 Methods of Assessment

2.1 Desk Study

A search for Statutory Sites of Nature Conservation Value and Priority Habitats² within 1 km of the Site was undertaken using the Multi Agency Geographical Information for the Countryside (MAGIC)³.

Ordnance Survey maps and satellite imagery from online sources were consulted to identify the presence of any water bodies within 500 m of the Site. Historic OS maps and satellite imagery was also used to assess any changes to the onsite habitats.

Records of protected species, notable species, invasive species, and non-statutory sites from within 1 km of the Site were procured from Suffolk Biological Information Service⁴ as part of this desk-based study and are presented in this report. Records provided by the record centre that are more than ten years old are only reported on if they are deemed to still be relevant.

The relevant Local Biodiversity Action Plan, Suffolk Local BAP⁵, was consulted to determine whether species and habitats identified (by both the desk study and the field survey) on and around the Site are subject to specific action plans. The list of UK Biodiversity Action Plan (UK BAP) species⁶ was also consulted as this remains an important reference source, despite being succeeded by the UK Post-2010 Biodiversity Framework⁷.

2.2 Preliminary Ecological Appraisal Site Survey

A Preliminary Ecological Appraisal survey of the Site was undertaken on 13th June 2023 by Ana Pino-Blanco BSc (Hons) MSc with over four years' experience (Natural England Bats Level 2: 2022-10568-CL18-BAT, and great crested newts Level 1 licence 2020-46807-CLS-CLS.) in ecological consultancy, assisted by assistant ecologist Katherine Sturman Bsc(Hons) with one months experience.

This survey assessed the value of onsite and adjacent habitats and their potential to support protected or notable species and habitats following the Guidelines for Preliminary Ecological Appraisal⁸ published by the Chartered Institute for Ecological and Environmental Management (CIEEM).

Habitats

Habitats were classified as per the criteria set out in the Handbook for The UK Habitat Classification⁹ with the prescribed habitat primary and relevant secondary habitat codes included. Habitats were checked against the definitions for Priority Habitats. Priority Habitats are those which are identified as a Habitat of Principal Importance in England under Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006².

European Protected Species

Following the UK exit from the European Union (EU), species formerly protected under the Habitat Regulations are now considered to be protected under The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019¹⁰ and will continue to be referred to as European Protected Species (EPS). Further legislative details regarding protected species are included in Appendix 3.

Great Crested Newt (Triturus cristatus)

Great crested newts use both terrestrial and aquatic habitat within their lifecycle, with all habitat used being legally protected. The terrestrial and, if present, aquatic habitats onsite were assessed for their value and suitability for great crested newts. The proximity of ponds within 500 m and any habitat linking such ponds to the Site was also assessed as an important factor determining the likelihood of the species being present onsite. Any ponds present onsite or accessible during the survey were assessed using the Habitat Suitability Index (HSI) Assessment¹¹ where appropriate.

Bats

Any trees or buildings present onsite were assessed for their suitability for roosting bats using the protocol set out in Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd ed)¹². Where necessary this included the use of binoculars to allow for a ground level assessment to search for signs such as staining and/or droppings sometimes found around roost entrances. Internal inspections of buildings or loft voids were undertaken where possible, using ladders and crawling boards if appropriate. It is noted that a lack of evidence of roosting bats, such as presence of bats, droppings, or staining, does not correlate to a lack or presence or a lack of suitability.

Habitats were assessed for their suitability for foraging and commuting bats, as set out in Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd ed)¹².

Hazel Dormice (Muscardinus avellanarius)

The Dormouse Conservation Handbook (2nd Ed.)¹³ provides a level of guidance on assessing a site where the status of hazel dormice is unknown. This assessment is made based upon historical records as well as the habitat and plant species present on and adjacent to the Site. As hazel dormice have a large range, a lack of evidence does not correlate to a lack of presence.

Otter (Lutra lutra) | White Clawed Crayfish (Austropotamobius pallipes)

Suitable waterbodies (if present) on or adjacent to the Site were assessed for their suitability to support these species, where access was possible. Any incidental evidence of the presence of these species on site (e.g. holts, spraints, foraging signs) was also recorded.

Other Species

Protected under the Wildlife and Countryside Act 1981¹⁴ or further specific legislation, further detailed within Appendix 3.

Birds

Habitats on site were assessed for their potential to support nesting birds as well as important numbers of breeding and wintering birds.

Reptiles

Terrestrial habitats on site were assessed for their potential to support common reptile species, based on factors including vegetation structure and composition, and the availability of shelter and foraging resources. All UK reptiles are protected, with rare species (smooth snake (*Coronella austriaca*) and sand lizard (*Lacerta agilis*) also given EPS status.

Water Vole (Arvicola amphibius)

Suitable waterbodies (if present) on or adjacent to the Site were assessed for their suitability to support these species, where access was possible. Any incidental evidence of the presence of these species on site (e.g.

burrows, latrines, foraging signs) was also recorded.

Badger (Meles meles)

Habitats on site were assessed for their suitability for badger foraging and sett building. Any incidental evidence of the presence of badgers on site (e.g. setts, paths, prints, foraging signs, and latrines) was recorded.

Priority Species

Habitats on site were assessed for their suitability for Priority Species. Priority Species are those listed as of Principal Importance in England under Section 41 of the NERC Act 2006¹⁵, those listed as Local Priority Species, or those that feature on the relevant Local Biodiversity Action Plan. Any incidental evidence of the presence of these species on site was also recorded. The presence of rare or notable plant species, such as red data list species¹⁶, was also noted.

Invasive Species

A search was made for evidence of the presence of invasive plant species listed in Schedule 9 of the Wildlife and Countryside Act 1981 as they are subject to strict legal control.

2.3 Biodiversity Enhancements

In accordance with policy set out in the National Planning Policy Framework (NPPF)¹ all new developments are required to deliver a net gain in biodiversity. Specifically, NPPF notes an environmental objective to protect and enhance the natural environment and to improve biodiversity (S2. p. 8c) and that all development should be ‘...providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures’ (S15. p.174d).

This report therefore seeks to provide suitable Site-specific habitat and species enhancements which will provide the biodiversity net gain required as part of the NPPF.

2.4 Limitations to Survey

Due to the seasonal behaviour of animals and the seasonal growth patterns of plants, ecological surveys may be limited by the time of year in which they are undertaken. Many animals in the UK have variable detectability throughout the year due to seasonal behaviour, including hibernation and migration. Therefore, this survey may not provide a complete list of the plants and animals present, or which may utilise the Site throughout the year.

As part of standard practice, a data search has been undertaken from the local biological record centre. This is not considered to be a complete list of species present and is better considered to be a list of species recorded, with many species known to be under recorded.

However, these limitations are not considered to have affected the accuracy of the assessment or the recommendations provided in this report and, where considered necessary, recommendations for further survey have been made to overcome these limitations.

This report presents conditions and recommendations for the Site based on the state of the Site during the survey visit. Any changes to the Site prior to development, including changes in the management of the Site habitats will therefore potentially invalidate this report and its recommendations.

3 Existing Conditions and Assessment of Effects

3.1 Summary

The following sites, species or ecological features have the potential to be affected by the development, or their presence has been detected during the desk study or data search. As such, they are discussed further in this report and action points, mitigation and compensation measures are recommended as necessary:

- Habitats
- Statutory and Non-statutory Sites of Nature Conservation Value
- Great Crested Newts
- Bats
- Birds
- Reptiles
- Badgers
- Priority & Notable Species (Fauna and Flora)

The following species are very unlikely to occur on the Site, in adjacent habitats either due to a lack of suitable habitat or as they have localised distributions in the UK. As such, the proposed development does not pose a threat to the following species and they are not discussed further as no further survey or mitigation is considered necessary:

- White-Clawed Crayfish
- Hazel Dormice
- Water Vole
- Otter
- Invasive Species

Site photos are included in Appendix 2. Refer to Appendix 3 for details of the legislation and guidance relevant to each protected species.

3.2 Site Description and Habitats

3.2.1 Desk Study

The desk study returned the following records of parcels of notable habitats within 1 km of the Site and a B-Line¹⁷:

Table 1: Notable Habitats within 1 km of the Site

Habitat	Areas	Parcels	Closest to Site
Deciduous Woodland (Priority Habitat Inventory)	5	6	320 m
Woodpasture and Parkland (BAP Priority Habitat)	1	1	815 m

The habitats listed in Table 1 bare no similarity to those occurring within the Site, detailed below.

3.2.2 Field Survey

Habitats noted on the Site were assessed using the Handbook for The UK Habitat Classification¹⁸ and included Artificial unvegetated, unsealed surface, building, Developed land; sealed surface, mown modified grassland, other developed land and developed land; sealed surface. Primary and secondary habitat codes are included for ease of reference.

Onsite Habitats

Artificial unvegetated, unsealed surface (u1c), Buildings (u1b5), Developed land; sealed surface (u1b).

Gravel driveway to the north of the Site, leading to the main residential building. Wooden decking bordered by concrete paving slabs lead around the edge of the house on the east to the back garden. The main residential building consists of a brick rendered one and a half storey with dormer window, adjoining a lower level single storey brick section with attic conversion with a further single storey extension. This is considered to have low ecological value.

Modified grassland; Mown (g4; 64), other developed land (u1b6), buildings (u1b5), Developed land; sealed surface (u1b).

Areas surrounding the south and east of the building consist of mown modified grassland. This grassland has been mown short, with cock's foot (*Dactylis glomerata*), perennial rye grass (*Lolium perenne*) and cut-leaved cranebill (*Geranium dissectum*) noted as the dominant species. Other species within the grassland include creeping buttercup (*Ranunculus repens*), bitter dock (*Rumex obtusifolius*) and common daisy (*Bellis perennis*). Wooden decking bordered by patio slabs run alongside the building to the south. To the south of the property is the sunroom and wooden pergola structure, east of the sunroom is a single storey wooden outbuilding. All are considered to have low ecological value.

Surrounding Habitats

Blue Line Boundary

The blue line boundary includes:

- Car port on the north east of the site (u1b5).
- Extension of the gravel driveway to the north east of the redline (u1c).

- Mown modified grassland of the same species within the red line to the north west, west and south of the red line (g4;64).
- Scattered trees (11) surrounding the north-west and south of the property consisting of ash (*Fraxinus excelsior*) and sycamore (*Acer pseudoplatanus*).
- Freshwater- man-made (39), ornate man-made pond located to the south of the property.
- Other Hedgerows (h2b) surrounding the border of the property on the north and east. Hedgerows are dominant in leylandii (*Cupressus × leylandii*) and laurel (*Laurus nobilis*) with bramble (*Rubus fruticosus*) scattered throughout.

Surrounding the Site were:

- *Arable and horticulture (c1)* in the form of arable fields in the wider area.
- *Woodland and forest (w)* in the form of an area of a small woodland 5m north of the Site.
- *Developed land; sealed surface (u1b)* in the form of minor a road to the north of the Site.
- *Built-up areas and gardens (u1)* in the form of areas of dwellings and gardens within the wider area.
- *Built linear features (u1e)* railway tracks running south of the site.

3.2.3 Assessment of Effects

All existing trees and hedgerows are to be maintained in the proposed plans.

To the south of the site, the patio, sunroom and outbuilding will be demolished to accommodate the proposed extension. North of the site, the gravel driveway and a low section of roof will be removed to allow the proposed porch. The habitats to be removed are common and ubiquitous, or have no ecological value in their own right. It is therefore considered that there is unlikely to be a loss of biodiversity onsite, especially if landscaping is included within the proposals.

3.2.4 Requirements

No further requirements.

3.2.5 Biodiversity Enhancements

Design Stage

- Two tubs to include pollinator and wildlife friendly shrubs added either side of the proposed porch on the north of the Site. This could include lavender (*Lavandula angustifolia*) and flowering cherry (*Prunus sp.*).

3.3 Statutory and Non-statutory Sites of Nature Conservation Value

3.3.1 Desk Study

The desk study returned no records for statutory and one record for non-statutory sites within 1 km of the Site. The Site lies in an Impact Risk Zone (IRZ), which are used by local authorities (LPA) to assess whether developments are likely to impact statutory sites, including internationally designated sites¹⁹ as well as Sites of Special Scientific Interest (SSSIs). Information regarding the relevant Statutory Site, is noted in Table 2.

Table 2: Statutory and Non-statutory Site Descriptions

Name	Designation	Distance (m)	Direction	Notable Features
Non-statutory Sites				
Black bourn valley	Country wildlife site	675m	E	Black Bourn Valley comprises a Suffolk Wildlife Trust reserve and incorporates a former County Wildlife Site, Grove Farm Meadows, which supports a diverse wetland plant community.
IRZ – Statutory Sites				
Norton wood	SSSI	3210m	E	Norton Wood is an ancient woodland site of coppice-with-standards structure with small, more recent additions of secondary woodland. The wood is situated on a gently sloping plateau and the soils are weakly acid due to a layer of sand and loess over the boulder clays.
Pakenham meadows	SSSI	3375m	N	Pakenham Meadows is a 5.8-hectare biological Site of Special Scientific Interest north of Pakenham in Suffolk. This unimproved and poorly drained meadow has a variety of soil types from loam to peat, and the vegetation types are correspondingly diverse

3.3.2 Assessment of Effects

The Site bears minimal similarities to the non-statutory sites listed in Table 2. Given the lack of similarity and the distance that separates them from Site, no impacts are anticipated.

The Site lies in an Impact Risk Zone (IRZ), which are used by local authorities to assess whether developments are likely to impact internationally designated sites as well as Sites of Special Scientific Interest (SSSIs). The proposed development does not meet the criteria to necessitate further consultation with Natural England.

3.3.3 Requirements

No further requirements.

3.4 Great Crested Newts

3.4.1 Desk Study

The desk study returned no records of great crested newts within 1 km of the Site.

A total of 8 ponds were identified within 500 m of the proposed development. Figure 2 shows the pond locations in relation to the Site, with the 500 m search area highlighted and the ponds numbered by distance from the Site. Details of each pond are provided in Table 3, overleaf.

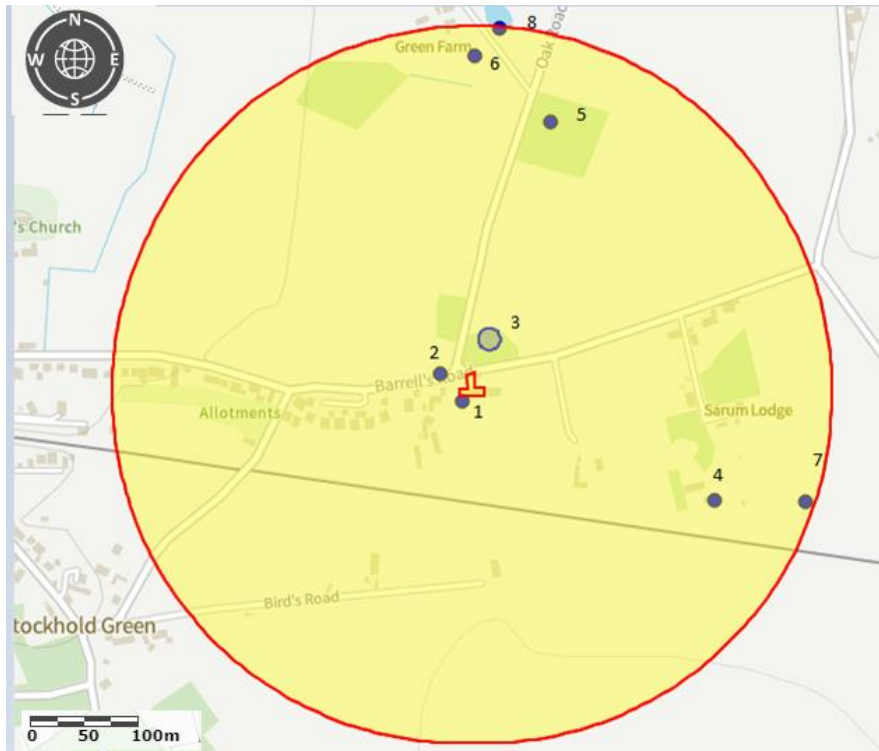


Figure 2: Ponds within 500 m of the Proposed Development

3.4.2 Field Survey

No suitable breeding, commuting, refuge or foraging habitats are present within the red line of the Site. Habitats within the wider blue line landholdings boundary include commuting and refuge habitats for great crested newts in the form of hedgerows and close mown grassland for commuting.

Pond 1 is located 10 m south of the Site lying within the blue line boundary. Pond 1 is an ornamental, man-made pond with iris planted throughout and stocked with a high density of fish. An HSI¹¹ of the pond was undertaken and scored 0.41, indicating ‘poor suitability’. This pond is to be retained on the proposal plans.

Pond 2 is located 30 m north of the Site, situated between the corner of an agricultural field and two minor roads. The pond is small and elongated in shape, overshadowed by scrub and has trees growing on the margins. The pond was assessed from the roadside. An HIS¹¹ of the pond was undertaken and scored 0.68 indicating ‘average suitability’.

Pond 3 is located 75 m north of the Site boundary. This is of circular shape but, unlike Pond 2, no scrub or trees were present along the margins. Although this pond was viewed from the roadside, it was difficult to accurately estimate a Habitat Suitability Index (HIS)¹¹ score for it.

Table 3: Pond Details

Pond #	Distance (m)	Direction	Visited	HIS Score	Dispersal Barriers to the Site
1	10	S	Y	0.41	None
2	30	N	Viewed	0.68	Minor road is a partial barrier
3	75	N	Viewed	-	Minor road is a partial barrier
4	340	SE	N	-	Distance is a partial barrier
5	395	N	N	-	Distance is a partial barrier
6	440	N	N	-	Distance is a partial barrier
7	465	SE	N	-	Distance is a partial barrier
8	520	N	N	-	Distance is a partial barrier

3.4.3 Assessment of Effects

The table of significance for HSI¹¹ scores from the Amphibian and Reptile Groups of the United Kingdom indicate that ponds with ‘poor’ suitability, when surveyed have 3% probability of great crested newt presence.

Pond 1 provides poor suitability habitat for newts and given the density of fish it is considered likely that they are absent from this waterbody.

Natural England’s GCN Rapid Risk Assessment Tool²¹ indicates that, should great crested newts be present in Ponds 2 & 3, in the absence of mitigation, an offence is ‘highly unlikely’ given the amount of land lost or damaged within 100 m of a pond. This indicates that the development activities are *“of such as type, scale and location that an offence is highly unlikely”*. Therefore, the development is unlikely to result in the injury or death of individuals during the construction stage if great crested newts are present in Pond 2 & 3.

All habitat within the redline is unsuitable for great crested newts being very heavily managed, with close mown lawns and a well maintained patio and decking area. It is therefore considered unlikely that they would utilise any habitats within the Site, even if present in Ponds 2 and 3.

If GCN are present in ponds listed over 100 m away the development would be very unlikely to impact them given that research from English Nature (now Natural England) has shown great crested newts to primarily remain within 100m of breeding ponds and are rarely present outside 250m from a breeding pond without suitable connecting habitat and reduced habitat within 250m of a pond²²

The hedgerows within the blue boundary line that provide foraging and refuge habitat will be retained. a small amount of mown grassland will be cleared to facilitate the development of a new porch to the north and single-storey extension to the south of the property. The development will not restrict great crested newts accessing the hedgerows post-development, if they are present in the wider area, particularly in Pond 2, nor will it lead to habitat fragmentation. During construction temporary artificial refuge could be created, through storage of materials or stripped soil, drawing newts onto Site (if present in the area). This could result in the killing or injury of individuals and destruction of (artificial) refuge. Therefore, recommendations have been made below.

3.4.4 Requirements

Given the proximity of Ponds 2 and 3, to reduce the low residual risk of harm to individual great crested newts (if present in P2 and P3) through clearance of habitats onsite and creation of artificial refuge during construction, a non-licensed method statement detailing control measures during pre-construction and construction phases should be produced. This will detail precautionary methods of working such as storage of materials and any requirement for an ecological clerk of works (EcCoW).

3.4.5 Biodiversity Enhancements

There is scope to enhance the Site for great crested newts (should they be present) and other amphibians, this can be achieved with a partially buried log pile on mown grassland within the north-west corner of the blue line boundary.

3.5 Bats

3.5.1 Desk Study

The following species of bat were noted within the 1 km data search occurring within last 10 years:

- Myotis species (*Myotis sp.*)
- Noctule (*Nyctalus noctule*)
- Common pipistrelle (*Pipistrellus pipistrellus*)
- Soprano pipistrelle (*Pipistrellus pygmaeus*)
- Brown long-eared (*Plecotus auritus*)

These records include records of bat droppings, roosts and injured and rescued bats (which are often found nearby roosts) with the most recent from 2017 corresponding to three individual brown long-eared bats found roosting c. 580 m SW of the Site. A record that corresponds to brown long eared bats c.13 m from the Site (at Bridge Cottage) was dated 2005 but is included here due to its proximity to the Site.

The search conducted with MAGIC didn't return records for the presence of bat European Protected Species licenses within 1 km of the Site.

3.5.2 Field Survey

Roosting Habitat

One residential building and one small wooden outbuilding were present on site which were assessed for their suitability to support roosting bats. Two attics were internally assessed on the residential building. No trees are included in the red line, but trees onsite were noted to have Moderate suitability for roosting bats¹³.

Building 1-Low potential¹²;

External:

This is a large brick rendered residential building. The main building is one and a half storey with dormer window, gable ends and clay pan tile roof. Attached to this is a single storey brick rendered building with attic conversion. Adjoining this is a single storey brick rendered extension. All roof levels have modern clay interlocking pan tiles. The roof has been re-tiled within the last 13 years. When inspecting the northern side of the roof where the proposed porch will go, all grills under the tiles appeared to be intact and lead flashing was flush.

When inspecting the southern elevation this could only be done from ground level, and a tile just below the ridgeline of the main section of the house (one and half storey) was noted to have possible roosting potential. This was located on a higher section of the roof which will not be directly affected with the proposed plans. No potential bat roosts were found on the flat roof of the sunroom which is due to be demolished.

Internal:

Both attics were inspected and found to have no sign of bats in the form of droppings or access points for bats. The attic to the west was internally boarded on the floor and ceiling and no bat droppings or gaps in the board were found. The second attic inspected had no droppings, or gaps in the roof and was heavily cobwebbed

indicating a low chance of it being used as a potential bat roost.

Building 2- Negligible Suitability¹².

A small single storey wooden outbuilding was externally inspected for any signs of bat roosting potential and no gaps in the wood or roof were found.

Trees-moderate suitability¹²

No trees on the proposed Site have been included in the plans. However trees within the blue lines were assessed and found to have potential roost features (PRFs). Consequently, all trees within the blue line were assessed as having *moderate suitability^{12,12}* for roosting bats.

Foraging and Commuting

No Suitable foraging and commuting habitat exist on the Site. Within the wider blue line boundary, foraging and commuting habitat exists in the form of scattered trees and hedgerows. These habitats have Moderate suitability for foraging and commuting bats, as they are continuous habitats that are well connected to the wider landscape.

3.5.3 Assessment of Effects

The Main residential building was considered to have low potential for roosting bats, the proposed extensions are single storey and any potential roost features found were not on the roof level that will be disturbed. The extension to the south of the property will see the demolition of the flat roof on the sunroom. This roof is used as a terrace with access from a bedroom, this roof was fully inspected and no suitability for bat roosts was found within it.

The proposed porch to the north of the property will see a small section of the lower roof removed, however no tiles were noted to be damaged or lifted and tile grills were fully intact.

The trees within the blue site line that are considered to have Moderate suitability for bats are to be retained.

Therefore, the development does not have the potential to cause the injury or death of bats damage or destroy a bat roost. If proposal plans change and the trees will not be retained, then this report should be updated.

The development will not see a significant loss in foraging and commuting habitat. The only habitat to be removed is of low or negligible suitability. The scattered trees within the grassland and the hedgerows will be retained.

Any additional, unnecessary light spill onto retained hedgerows and scattered trees could have a negative impact on the foraging and commuting suitability of the habitat.

3.5.4 Requirements

Design Stage

Any lighting schemes to be installed during and post-construction must be designed to prevent unnecessary light spill onto the surrounding hedgerows and trees. The following guidance²⁰²¹ must be followed:

- Minimise light spill by eliminating any bare bulbs and upward pointing light fixtures. The spread of light must be kept near to or below the horizontal plane, by using as steep a downward angle as possible and/or shield hood. Flat, cut-off lanterns are best.
- Luminaires must feature peak wavelengths higher than 550nm to avoid the component of light most disturbing to bats²².

- A warm white spectrum (ideally <2700 Kelvin) must be adopted to reduce blue light component.
- All luminaires must lack UV elements when manufactured. Metal halide, fluorescent sources must not be used.
- Limiting the height of lighting columns to eight metres and increase the spacing of lighting columns²³ will reduce the spill of light into unwanted areas such as the aforementioned habitats.
- Artificial lighting proposals must not directly illuminate boundary habitats and trees.

With these lighting measures implemented, it is considered that any potential adverse effects from lighting upon bats will be minimised. Should any external lighting be proposed, then a review of this by an ecologist should be undertaken to ensure that boundary features and trees are protected from significant light spill.

3.5.5 Biodiversity Enhancements

The following enhancement is considered suitable for the Site:

Two Kent style bat boxes to be mounted on trees within the blue line boundary, at least 4m high, facing southeast or southwest and with a clear line of flight.

3.6 Birds

3.6.1 Desk Study

Records of species returned by the data search included a range of species typical of the landscape surrounding the Site and included Notable²⁴ species listed in Table 4, below.

Table 4: Notable Birds within Data Search

Species		Protection			
Scientific Name	Common Name	Schedule 1 WCA	BoCC Status	National Priority	Local Priority
<i>Cuculus canorus</i>	Cuckoo		Red	✓	✓
<i>Emberiza citronella</i>	Yellowhammer		Red	✓	✓
<i>Linaria cannabina</i>	Linnet		Red	✓	
<i>Luscinia megarhynchos</i>	Nightingale		Red		
<i>Passer domesticus</i>	House sparrow		Red	✓	✓
<i>Sturnus vulgaris</i>	Starling		Red		✓
<i>Turdus philomelos</i>	Song thrush		Red	✓	✓
<i>Turdus viscivorus</i>	Mistle thrush		Red		
<i>Apus apus</i>	Swift		Red		✓
<i>Falco tinnunculus</i>	Kestrel		Amber		
<i>Prunella modularis</i>	Duncock		Amber		✓

<i>Pyrrhula pyrrhula</i>	Bullfinch		Amber		✓
<i>Tyto alba</i>	Barn owl	✓	Green		✓

3.6.2 Field Survey

The field survey noted the following species on the Site, seen in Table 5:

Table 5: Birds Recorded Onsite

Species			Protection			
Scientific Name	Common Name	Breeding?	Schedule 1 WCA	BoCC Status	National Priority	Local Priority
<i>Turdus merula</i>	Blackbird	Possible		Green		
<i>Columba livia</i>	Pigeon	Possible		Green		

Modified grassland habitats within the site have foraging suitability for passerine birds. Within the wider blue line of the site hedgerows and scattered trees provide suitability for nesting and foraging for a wide range of birds.

No bird nests were observed on the site during the Site visit.

3.6.3 Assessment of Effects

The development will not result in the loss of nesting habitat. If plans change and any trees or hedgerows are to be removed, then additional advice must be sought.

3.6.4 Requirements

No further requirements.

3.6.5 Biodiversity Enhancements

The following enhancements are considered suitable:

- One house sparrow terrace nest box integrated into the extension on the south of the site. They should be placed north or east facing and 4-5m high.

3.7 Reptiles

3.7.1 Desk Study

The desk study returned three records for reptiles within 1 km of the Site, two from c. 1100 m south of the Site dated 2015 (grass snake and slow worm); and one from 594 m north of the Site dated 2022 (grass snake).

3.7.2 Field Survey

The Sites close mown grassland habitat is unlikely to provide habitat of value to reptiles, but may be used as a dispersal route, if they are present in the wider area.

3.7.3 Assessment of Effects

It is considered unlikely that reptiles are present on the site.

3.7.4 Requirements

No requirements.

3.8 Badgers

3.8.1 Desk Study

The desk study returned no record for badger (*Meles meles*) within 1 km of the Site.

3.8.2 Field Survey

No signs of badger are noted onsite, such as sett building, foraging or latrines. The Site may be used for commuting badgers.

3.8.3 Assessment of Effects

It is considered unlikely that badgers are present onsite, although there is a small chance they are transiently present in the wider area. Therefore, there is a small risk of incidental entrapment during construction.

3.8.4 Requirements

Any holes or excavations created during the development should be securely fenced or backfilled overnight or during periods of inactivity onsite. Any open pipework should be securely fenced or blocked to prevent badgers becoming trapped during construction. If this is not possible, wood planks should be placed inside any excavations to provide a means of escape. This will also benefit small mammals that may be onsite.

3.9 Priority & Notable Species

3.9.1 Desk Study

The desk study returned 33 records for hedgehog (*Erinaceus europaeus*) within 1 km of the Site, with the most recent being from 2021.

3.9.2 Field Survey

Suitable habitats exist in the wider area around the Site, in the form of gardens, grassland and hedgerows which have potential to support foraging, commuting and sheltering hedgehogs.

3.9.3 Assessment of Effects

The development has potential to cause injury or death to small mammals, including hedgehog, disturbed during Site clearance. However, the development is unlikely to cause any impacts to the population of any notable or priority species.

3.9.4 Requirements

Clearance of the Site should be in conjunction with any other recommendations.

Any small mammal disturbed during construction should be allowed to flee of their own volition or relocated to the Site boundary. Any excavations or holes to be covered or fenced off overnight, or planks placed inside to create a means of escape.

The development should seek to minimise the use of impermeable boundary fencing. This can be negated by ensuring that all boundaries are marked with hedgerows or permeable fencing; failing this, any impermeable fencing installed should have 13x13 cm holes in the base to provide access.

3.9.5 Biodiversity Enhancements

A hedgehog house could be installed in a quiet area of the Site, such as the eastern bordering hedgerow.

A minimum of two bee bricks incorporated into the brickwork on the south extension. Bee Bricks can be used in place of a standard brick or block in construction to create habitat for solitary bees.

4 Biodiversity Enhancements Summary

As per the National Planning Policy Framework¹ all new developments are required to deliver a net gain in biodiversity. In order to achieve this, the mitigation measures described in the preceding sections as well as the biodiversity enhancements should be implemented.

A brief summary of the recommended biodiversity enhancements for the Site is detailed in Table 6, below. For more detail on these enhancements, including recommended specifications, please refer to the species-specific sections of this report. It is considered that these measures, undertaken in conjunction with the Requirements detailed within this report, will ensure that the development achieves a biodiversity net gain.

Table 6: Summary of Additional Biodiversity Enhancement Measures

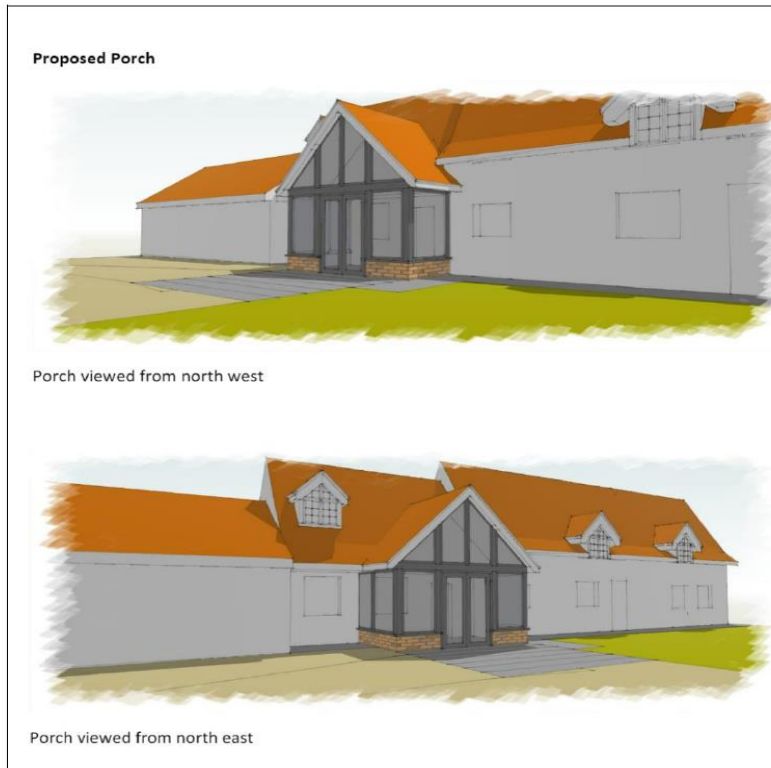
Group or Habitat	Enhancement
Habitats	Two tubs to include pollinator and wildlife friendly shrubs be added either side of the proposed porch on the north of the site. This could include lavender (<i>Lavandula angustifolia</i>) and flowering cherry (<i>Prunus sp.</i>).
Amphibians and reptiles	Partially buried log pile on mown grassland within the north-west corner of the blue line boundary.
Bats	Two Kent style bat boxes to be mounted on trees within the blue line boundary, at least 4m high, facing southeast or southwest and with a clear line of flight.
Birds	One house sparrow terrace nest boxes integrated into the extension on the south of the site. This should be placed north or east facing and 4-5m high.
Priority and notable species	A hedgehog house could be installed in a quiet area of the Site, such as the eastern bordering hedgerow. A minimum of two bee bricks incorporated into the brickwork on the south extension. Bee Bricks can be used in place of a standard brick or block in construction to create habitat for solitary bees.

5 References

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Appendix 1: DC/23/01005

Reference No: DC/23/01005



Reference No: DC/23/01005



Appendix 2: Site Photographs



Photo 1: Pond 1 located within the blue boundary line.



Photo 2: View of the front of the house (north) where the proposed porch is due to go.



Photo 3: View from the south of the property where the proposed single storey extension will go.



Photo 4: closer view of the roof on the south of the property.



Photo 5: Internal attic of the main building.



Photo 6: View of the south east of the property with the sunroom and external single storey outbuilding.



Photo 7: Attic located to the west of the property.



Photo 8: closer view of the pond located to the south of the site within the blue line.



Photo 9: closer view of the roofline on the existing sunroom to the south of the property.



Photo 10: View of the north of the property of the main building.

Appendix 3: Legislation

The following sections outline the legislation protecting each species or group of species where appropriate which have been considered as part of the preceding report.

Important notes:

- Practical Ecology Ltd's reports do **not** purport legal advice.
- The outline of legislation provided is not comprehensive and the original texts of the relevant legislation must be referred to for a full list of offences.

European Protected Species

Overview

The Bern Convention (The Convention on the Conservation of European Wildlife and Natural Habitats) was adopted in 1979. To implement the agreement, the European Community adopted the EC Habitats Directive.

The EC Habitats Directive has been written into UK law in the Wildlife and Countryside Act 1981 (as amended) and the Conservation of Habitats and Species Regulations 2017 (as amended). The Conservation of Habitats and Species Regulations 2017 (as amended) provides safeguards for European Protected Sites and Species (as listed in the Habitats Directive). This has recently been amended by the Conservation of Habitats and Species Regulations (amendments) (EU Exit) (2019) which continue the same provision for European protected species, licensing requirements and protected areas after the UK's exit from the European Union. In addition, the Countryside and Rights of Way Act 2000 strengthened the wildlife legislation in the UK. In relation to development, a person commits an offence regarding a species protected under Regulation 41 of The Conservation of Habitats and Species Regulations 2017 (as amended) if they:

- Deliberately capture, injure or kill an EPS;
- Deliberately or recklessly disturb wild animals of any such species in such a way as to be likely to significantly affect;
 - The ability of any significant group of animals to survive, breed or rear or nurture their young;
 - The local distribution or abundance of that species.
- Damages or destroys a breeding site or resting place (even if unintentional or when the animal is not present);
- Intentionally or recklessly obstructs access to a structure or place used for protection or shelter; and
- This applies regardless of the life stage (i.e. eggs, young, adult).

The following sections outline the offences that can be committed against each species or group of species which are protected by European law and tranches of UK law which strengthen that protection.

Great Crested Newts (*Triturus cristatus*)

Great crested newts and their breeding sites (ponds) or resting places are protected under Regulation 41 of The Conservation of Habitats and Species Regulations 2017 (as amended) and Section 9 of the Wildlife and Countryside Act 1981.

It is an offence to:

- intentionally or recklessly kill, injure or handle a great crested newt;
- to possess a great crested newt (whether live or dead);
- disturb a great crested newt – this includes in particular:

- Any disturbance or obstruction which is likely to impair their ability to survive, breed or reproduce, or to rear or nurture their young; or
- Any disturbance or obstruction that impairs their ability to hibernate or affecting their local distribution and abundance;
- sell or offer a great crested newt for sale without a licence.

It is also an offence to intentionally or recklessly damage, destroy or obstruct access to any place used by great crested newts for shelter, whether they are present or not.

Bats

All species of bat and their breeding sites or resting places (roosts) are protected under Regulation 41 of The Conservation of Habitats and Species Regulations 2017 (as amended) and Section 9 of the Wildlife and Countryside Act 1981.

It is an offence to:

- intentionally kill, injure or handle a bat;
- to possess a bat (whether live or dead);
- disturb a roosting bat; or
- sell or offer a bat for sale without a licence.

It is also an offence to intentionally or recklessly damage, destroy or obstruct access to any place used by bats for shelter, whether they are present or not.

A roost is defined as 'any structure or place which (a bat) uses for shelter or protection'. As bats tend to reuse the same roosts, legal opinion is that a roost is protected whether or not bats are present at the time of the survey.

Otter (*Lutra lutra*)

Otters and their breeding sites (holts) or resting places are protected under Regulation 41 of The Conservation of Habitats and Species Regulations 2017 (as amended) and Section 9 of the Wildlife and Countryside Act 1981.

It is an offence to:

- Deliberately or recklessly capture, kill, disturb or injure otters;
- Deliberately or recklessly damage or destroy a breeding or resting place;
- Deliberately or recklessly obstruct access to their resting or sheltering places; or
- possess, sell, control or transport live or dead otters, or parts of otters.

Common dormouse (*Muscardinus avellanarius*)

Common dormice and their breeding sites or resting places are protected under Regulation 41 of The Conservation of Habitats and Species Regulations 2017 (as amended) and Section 9 of the Wildlife and Countryside Act 1981.

It is an offence to:

- Deliberately or recklessly capture, kill, disturb or injure common dormice;
- Deliberately or recklessly damage or destroy a breeding or resting place;
- Deliberately or recklessly disturb a common dormouse whilst in structure or place of shelter or protection;
- Deliberately or recklessly obstruct access to their resting or sheltering places; or
- possess, sell, control or transport live or dead common dormice, or parts of common dormice.

Other Species

Badgers (*Meles meles*)

Badgers are fully protected in the UK by the Protection of Badgers Act, 1992 and by Schedule 6 of the Wildlife and Countryside Act 1981 as amended. The Protection of Badgers Act 1992 was introduced in recognition of the additional threats that badgers face from illegal badger digging and baiting. Under the Act, it is an offence *inter alia* to:

- Wilfully kill, injure or take a badger, or to attempt to do so;
- Cruelly ill-treat a badger; or
- Intentionally or recklessly interfere with a badger sett by;
 - damaging a sett or any part of one;
 - destroying a sett;
 - obstructing access to or any entrance of a sett;
 - causing a dog to enter a sett; or
 - disturbing a badger when it is occupying a sett.

The purpose of this legislation is to ensure that badgers are humanely treated.

Water Vole (*Arvicola terrestris*)

Water vole and their breeding sites or resting places (burrows) are protected under Schedule 5 of the Wildlife and Countryside Act 1981. It is an offence to:

- Deliberately or recklessly capture, kill, disturb or injure water voles;
- Deliberately or recklessly damage or destroy a breeding or resting place;
- Deliberately or recklessly disturb a water vole whilst in structure or place of shelter or protection;
- Deliberately or recklessly obstruct access to their resting or sheltering places; or
- Possess, sell, control or transport live or dead water voles, or parts of water voles.

NB: In the case of water voles, a place of shelter or breeding or resting place is only likely to constitute an 'active' burrow.

Reptiles

All six of the UK's reptile species are protected under the Wildlife and Countryside Act 1981 (as amended).

Of the more common reptiles, it is illegal to intentionally kill or injure common lizard (*Zootoca vivipara*), slow worm (*Anguis fragilis*), an adder (*Vipera berus*) and grass snake (*Natrix helvetica*).

White-Clawed Crayfish (*Austropotomobius pallipes*)

The Wildlife and Countryside Act 1981 (as amended) makes it an offence to:

- Take a white-clawed crayfish from the wild;
- Sell or offer the sale of a whole or any part of a white-clawed crayfish.

This applies to all life stages.

Birds

The Wildlife and Countryside Act 1981 (as amended) makes it an offence to:

- intentionally kill, injure or take any wild bird;

- intentionally take, damage or destroy the nest of any wild bird while that nest is in use or being built;
- intentionally take or destroy the nest or eggs of any wild bird. [Special penalties are liable for these offences involving birds listed on **Schedule 1**].

Birds listed on Schedule 1 of the Wildlife and Countryside Act 1981 (as amended) have an additional level of protection. With regards to these species, it is an offence to deliberately or recklessly:

- disturb them whilst they are nesting, building a nest, in or near a nest that contains their young;
- disturb their dependent young.

Invasive Species

Certain species of plants and animals that do not naturally occur in Great Britain have become established in the wild and represent a threat to the natural fauna and flora. Section 14 of the Wildlife & Countryside Act 1981 (as amended) prohibits the release of any animal species that are 'not ordinarily resident or is not a regular visitor to Great Britain in a wild state'.

Therefore, under Section 14 it is an offence to allow the establishment of plant species listed on Schedule 9 Part 2 in the wild.

Wild Mammals

Mammal species not of primary conservation concern do receive protection from unnecessary suffering through the Wild Mammals Protection Act (1996).