



1 The Street, Brome, Eye

Preliminary Ecological Appraisal Report

On Behalf of

**Mr S Shales via Ashley Largent Associates
Ltd**

Version 1 | November 2021



The Main House and Outbuilding to be Converted

Document Control

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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 undertaken at 1 The Street Brome, Eye, Suffolk. 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 an Extension of the residential property linking to the conversion of an out building.

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 planning application
	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
	Bats	<p>Building 1 (residential property) and Building 2 (outbuilding to be converted) are both considered to have <i>low suitability</i> for roosting bats, with lifted tiles present on both buildings. Should bats be present in Building 1 then proposals could impact access to and from a roost, should bats be present in Building 2 then proposals could result in killing or injuring bats and the destruction of a roost.</p> <p>Building 3 (garage) also has low suitability but is not affected by proposals. A tree in the south of the Site with high suitability, and Building 4, are unaffected by proposals.</p> <p>The area of the Site to be developed has no value for foraging or commuting bats. The remainder of the garden and adjacent woodland are considered to provide good habitat for foraging and commuting.</p> <p>Requirements: A single emergence survey to confirm whether any bat roosts are present is required on Buildings 1 and 2. Should a bat roost be confirmed, then further survey and a license from Natural England are likely to be required;</p> <p>Install a bat box on Building 3 to compensate for the loss of potential roosting habitat on Building 1 and 2; &</p> <p>Ensure that any external lighting included within the proposal does not illuminate boundary vegetation, trees, or Building 3.</p> <p>Enhancements: Include three Kent-style bat boxes on mature oak tree onsite.</p>	<p>Pre-submission, May to August</p> <p>Design Stage</p> <p>Design Stage</p> <p>Design Stage</p>

Risk Code	Factor	Comments and Actions Required	Timings
	Habitats	<p>The Site itself has minimal ecological value, comprising of buildings, hard standing, gravel, and ornamental shrub planting. Mature trees onsite have high ecological value but are not impacted. Habitats to be impacted by development include hard standing, Buildings 1 and 2 and a small area of planting.</p> <p>Adjacent to the east of the Site is a parcel of deciduous woodland, meeting the criteria for a priority habitat.</p> <p>Requirements: To protect the adjacent woodland root protection measures in line with BS 5837:2012 and dust/ pollution prevention measures will be put in place.</p> <p>Enhancements: Plant four fruit trees</p>	<p>Pre- and during construction</p> <p>Design Stage</p>
	Great Crested Newts	<p>While habitats within the development footprint of the Site are of negligible value for great crested newts, potential refugia habitat is present adjacent. Three ponds within 100m and presence of great crested newts in these could not be ruled out, although the closest was assessed as 'poor'. Natural England's Rapid Risk Assessment tool notes an offence is unlikely given the scale of the development and habitats impacted and a precautionary approach is recommended.</p> <p>Requirements: Clearance and development to be processed under a non-licensed method statement as a precautionary measure.</p>	<p>In place prior to works.</p>
	Birds	<p>The development will see the loss of a small area of habitat suitable for nesting, through works to Buildings 1 and 2. Works could also cause the damage or destruction of active nests.</p> <p>Requirements: Works to roof tiles and Building 2 to be undertaken outside of the nesting bird season (1) to avoid impacts to active nests; or, during the nesting season (2) to be undertaken within, at most, 48 hours of a nesting bird check performed by an ecologist &</p> <p>Install two house sparrow terraces on the new extension or Building 3.</p> <p>Enhancements: Install three hole-fronted nest boxes within the Site on retained trees.</p>	<p>Pre-construction, (1) Oct – Feb; or (2) Mar – Sept</p> <p>Design Stage</p> <p>Design Stage</p>
	Priority Species (Fauna and Flora)	<p>Hedgehogs may utilise the site for foraging and commuting however are at negligible risk of injury as part of development.</p> <p>Requirements: Any small mammal disturbed during construction should be allowed to flee of their own volition to the Site boundary; &</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 should be installed on the southern boundary.</p>	<p>Pre-Construction/ Construction Stage</p> <p>Design Stage</p> <p>Design Stage</p>

Risk Code	Factor	Comments and Actions Required	Timings
	Statutory and Non-Statutory Designated Sites Invasive Species	Discussed but no further action required.	
	Badger Hazel Dormice Otter Reptiles Water Vole White-clawed Crayfish	Considered but screened out due to a lack of suitable, connecting, or linked habitat combined with a lack of evidence onsite. No action required	

1 Introduction

1.1 Background

Practical Ecology Ltd were commissioned by Mr S Shales to undertake a Preliminary Ecological Appraisal (PEA) of 1 The Street, Brome, Eye, Suffolk, 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 5th October 2021.

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 NPPF.

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 0.1ha (central OS grid reference TM 15365 76608, postcode IP23 8AE) and is located in Brome, Suffolk, c.4km southeast of the town of Diss. The Site comprises of a residential property with two outbuildings and an associated vegetated garden and gravel access track and parking. The Site is surrounded by the other residential properties and gardens, a minor road, and on the east and south by a parcel of woodland. A Site Plan along with a red line boundary is provided in Figure 1, below (ALG Ltd, 2021, GO28 001).

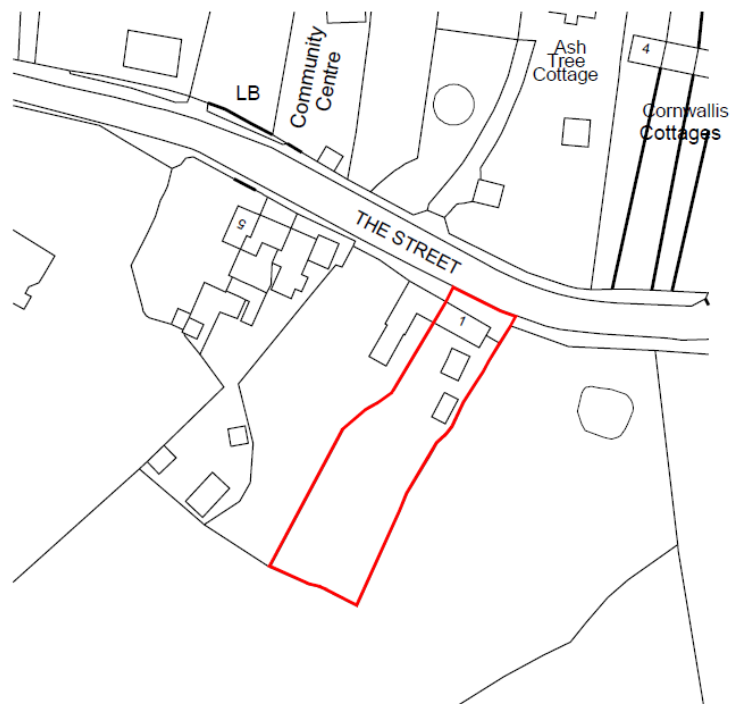


Figure 1: Site Boundary

1.3 Proposed Development

The proposals include a ground floor extension linking to an existing outbuilding which is to be converted. Proposal plans are provided in Appendix 1 (ALG Ltd, 2021, GO28 003 0).

2 Methods of Assessment

2.1 Desk Study

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

Ordnance Survey maps and aerial photographs from online sources were consulted to identify the presence of any water bodies within 500m of the Site.

Records of protected species, notable species, invasive species, and non-statutory sites from within 1km 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 5th October 2021 by Alex Jessop MSc, an Ecologist with over three and a half years' experience in undertaking PEA surveys. Alex was assisted by Graduate Ecologist Sammi Smith MSc.

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 33.

Great Crested Newt (Triturus cristatus)

Great crested newts use both terrestrial and aquatic habitat within their lifecycle, with all habitat used 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 500m 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 was 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 (Arviculus 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 also 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 Enhancements for Biodiversity Net Gain

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. Some plant species have already begun to die back in the Autumn. 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.

Many ponds within the surrounding area were in private gardens and could not be accessed during the field survey.

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
- Great Crested Newts
- Bats
- Birds
- Priority & Notable Species (Fauna and Flora)
- Invasive Species

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:

- Badgers
- Hazel Dormice
- Otter
- Water Vole
- White-Clawed Crayfish

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 priority and notable habitats within 1km of the Site:

Table 1: Notable and Priority Habitats within 1km of the Site

Habitat	Areas	Parcels	Closest to Site
Deciduous Woodland (Priority Habitat Inventory (PHI))	9	15	<5m
Woodpasture and Parkland (BAP Priority Habitat)	1	4	50m
Reedbed (PHI)	1	2	780m
Coastal and Floodplain Grazing Marsh (PHI)	1	1	1km

3.2.2 Field Survey

Habitats noted on the Site were assessed using the Handbook for The UK Habitat Classification¹⁷ and included Artificial unvegetated, unsealed surface, Buildings, Developed land; sealed surface, Hedgerows, and Modified grassland. Primary and secondary habitat codes are included for ease of reference.

Onsite Habitats

Artificial unvegetated; unsealed surface (u1c)

A small area of unvegetated gravel allowing vehicle access from the road to the garage. This is of negligible ecological value.

Buildings, residential (u1b5; 109)

The Site included four buildings; a two-storey residential property, an outbuilding used for storage, a garage, and a summerhouse. All buildings were considered to have negligible ecological value (as habitats within their own right), with two further considered within this report due to their potential to support protected species.

Developed Land; Sealed Surface (u1b)

A small area of concrete hard standing linking the residential property to the outbuilding used for storage. This was used as a patio and included pots with ornamental planting.

Other Hedgerows, non-native (h2b, 48)¹

The Site was bounded to the east, south, and west by a hedgerow comprising solely of Wilson’s honeysuckle (*Lonicera nitida*) managed to a height of c.1.2m and breadth of c.50cm. This habitat is of negligible ecological value.

¹ Within UK Habitat Classification System the use of the term “Other” relates to habitat types which can, but do not, correlate to a priority habitat, such as hedgerows or grassland.

Modified Grassland, scattered scrub, scattered trees, vegetated garden (g4, 10, 11, 231)

The majority of the Site comprised a grass lawn, managed by regular mowing. Species present were limited and the area was dominated by hard wearing grasses such as perennial ryegrass (*Lolium perenne*), creeping bent (*Agrostis stolonifera*), sheep's fescue (*Festuca ovina*), and smooth meadow grass (*Poa pratensis*). Forbs noted included dandelion (*Taxacum agg.*), creeping buttercup (*Ranunculus repens*), white clover (*Trifolium repens*), and daisy (*Bellis perennis*). This habitat is of very low ecological value as a habitat in its own right.

Scattered ornamental scrub and garden planting included *Buddleia sp.*, *salvia sp.*, *verbena borealis*, and *fuscia sp.*. These are considered to have low ecological value.

Scattered trees include mature pedunculate oak (*Quercus robur*), semi-mature apple (*Malus sp.*), willow (*Salix sp.*), sycamore (*Acer pseudoplatanus*) and *Magnolia sp.*. The scattered trees offer moderate ecological value, with the mature pedunculate oak having high ecological value as a habitat in its own right.

Surrounding Habitats

Surrounding the Site were:

- *Built-up Areas and Gardens (u1)* surround the Site to the north and west, with residential properties, outbuildings, vegetated and un-vegetated garden areas and a minor road.
- *Lowland Mixed Deciduous Woodland (w1f)* – Priority Habitat – lies to the south and east of the Site and includes primarily mature trees with limited understorey vegetation.

3.2.3 Assessment of Effects

The development will see the loss of sealed surface, removed to facilitate the extension to the property. No habitats of ecological value will be removed. Changes to the residential property and outbuilding will be made.

It is therefore expected that there will be no loss of habitats of ecological value as result of the development and that the development has scope to achieve a biodiversity net gain.

Any heavy groundworks undertaken could impact root protection zones of the adjacent woodland, which could also be vulnerable to dust pollution as a result of works.

3.2.4 Requirements

The following will ensure there is no impact on adjacent priority habitat.

Pre-Construction/ Construction Stage

The following should be implemented to protect the adjacent priority habitat woodland;

- Root and tree/hedgerow protection measures (in line with the British Standard for trees in relation to construction BS 5837:2012) must be installed in the pre-construction phase and maintained throughout the construction phase.
- Dust and pollution prevention measures will be in place to reduce any impacts during works.

3.2.1 Enhancements for Biodiversity Net Gain

Design Stage

- Tree Planting, consisting of four fruit trees, such as apple, pear (*Pyrus sp.*), cherry (*Prunus sp.*), or plum (*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 or Non-Statutory Sites within 1km of the Site. The Site lies in an Impact Risk Zone (IRZ), which are used by local authorities to assess whether developments are likely to impact Statutory Sites, including internationally designated sites¹⁸ as well as Sites of Special Scientific Interest (SSSIs). Information regarding the relevant Statutory Sites, *Gypsy Camp Meadows*, *Thrandeston SSSI* and *Hoxne Brick Pit SSSI*, is noted in Table 1.

Table 2: Statutory and Non-Statutory Site Descriptions

Name	Designation	Distance	Direction	Notable Features
IRZ – Statutory Sites				
Hoxne Brick Pit	SSSI	2km	East	A geological site and is considered one of the most important Pleistocene sites in Britain.
Gypsy Camp Meadows, Thrandeston	SSSI	3.8km	W-NW	Gypsy Camp Meadows, representing one of the few remaining wet meadow sites in Suffolk, consists of a large and a smaller species rich wet meadow, situated on poorly drained Suffolk boulder-clay.

3.3.2 Assessment of Effects

The Site does not meet any of the IRZ criteria requiring LPA consultation with Natural England, nor do any IRZ criteria suggest a likely impact as a result of the development on any statutory site.

3.3.3 Requirements

No further consideration.

3.4 Great Crested Newts

3.4.1 Desk Study

The desk study returned two records of great crested newts within 2km of the Site. These records were dated between 2017 and 2019, the closest to Site being the 2019 record which correlates to the location of Pond 11 in Figure 2, below with the 2017 record noted as being a terrestrial record between Ponds 11 and 12.

A total of 22 ponds were identified within 500m of the proposed development. Figure 2 shows the pond locations in relation to the Site, with the 500m search area highlighted and the ponds numbered by distance from the Site. Details of each pond are provided in Table 2, overleaf.

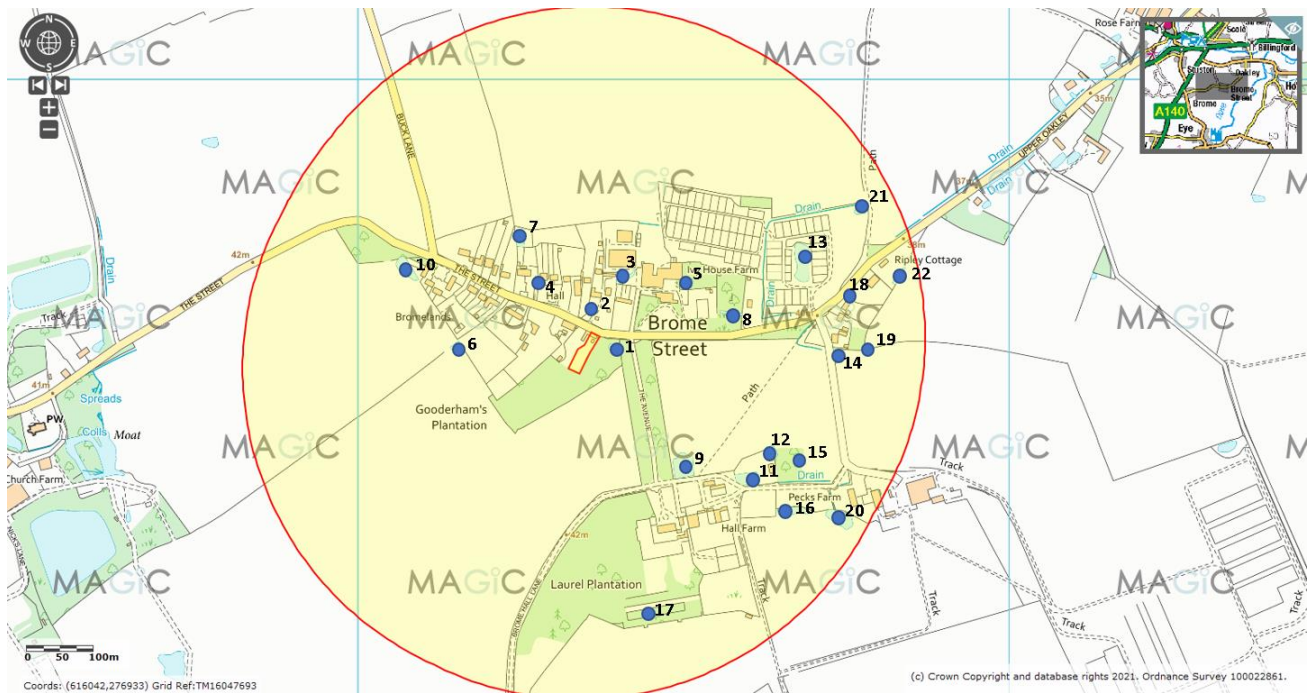


Figure 2: Ponds within 500m of the Proposed Development Site

3.4.2 Field Survey

The majority of the Site has minimal value for great crested newts. The modified grassland and hedgerows could provide low value foraging habitat. The hard standing and gravel have no value for great crested newts, although a small log pile on the eastern boundary did provide a refugia opportunity.

Pond 1, which lies in woodland to the east of the Site, was viewed from a public right of way. The pond was largely dry, with the surrounding vegetation showing no sign that the pond had contained more water in recent months, although there is scope for the pond to have greater capacity. The pond was fully shaded and heavily choked with leaves and branches. No macrophyte cover was noted. The woodland does however provide good terrestrial habitat for great crested newt. A Habitat Suitability Index (HSI)¹¹ of the pond was undertaken suggesting the pond has ‘poor’ suitability for great crested newts.

The area around Pond 2 was viewed from the public highway; while the pond itself was not visible, it was surrounded by a c.1m high fence and 5 strand electric fence. It was considered that it was therefore possible that the pond could contain either significant numbers of fish or wildfowl which both significantly decrease likely suitability for great crested newts.

Table 3: Pond Details

Pond #	Distance	Direction	Visited	HSI Score	Dispersal Barriers to the Site
1	20m	E	Yes	0.47/Poor	A small woodland pond with a lack of management, heavily choked and under total shade. The pond likely dries regularly.
2	35m	N	No		Viewed from road. Fence indicates possibly either a high fish or waterfowl population. No dispersal barriers to Site.
3	85m	N	No		None
4	115m	NW	No		None
5	150m	NE	No		None
6	175m	W	No		None
7	175m	NW	No		None
8	190m	E	No		None
9	210m	SE	No		None
10	270m	W	No		Distance is a partial barrier
11	295m	SE	No		Distance is a partial barrier. Great crested newts confirmed in 2019.
12	315m	SE	No		Distance is a partial barrier
13	320m	E	No		Distance is a partial barrier
14	365m	E	No		Distance is a partial barrier
15	360m	SE	No		Distance is a partial barrier
16	375m	SE	No		Distance is a partial barrier
17	390m	S	No		Distance is a partial barrier
18	390m	E	No		Distance is a partial barrier
19	410m	E	No		Distance is a partial barrier
20	440m	SE	No		Distance is a partial barrier
21	445m	NE	No		Distance is a partial barrier
22	470m	E	No		Distance is a partial barrier

3.4.3 Assessment of Effects

The habitat onsite of suitability for great crested newts and the area impacted is minimal. The hard standing and gravel, which includes the majority of the impacted area, has no value for great crested newts. However, there is potential for great crested newts to be present in ponds within 100m of the Site.

Natural England's Rapid Risk Assessment Tool¹⁹ has been used to ascertain the potential impacts and likelihood of an offence being committed and provide further guidance on appropriate proportionate mitigation. Given the removal of discrete refuge habitat, a small log pile, and impacts upon <0.01ha an offence is considered unlikely to occur.

However, the Rapid Risk Assessment Tool notes that further consideration towards mitigation should be considered if necessary. Given the Site habitats which will be effected are of poor value for great crested newts, but include potential refuge, it is considered that as a precaution a non-licensed method statement is appropriate, to mitigate residual risks. This method statement will detail ecological supervision of the initial stages of clearance is undertaken and that safe storage of materials onsite to avoid refugia

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 pond²⁰. As such, it is considered reasonably unlikely that if great crested newts were present in ponds beyond 100m, i.e. from the known population occurring to the southeast, that they would utilise the Site.

3.4.4 Requirements

A non-licensed method statement, detailing methods and timings of clearance, storage and disposal of materials onsite, and an element of ecological supervision, should be produced and put in place prior to works onsite commencing to reduce the residual risk to great crested newts during works.

4 Bats

4.1.1 Desk Study

The following records of bats were returned by the desk study within 2km of the Site and occur within the last 10 years:

Table 4: Records of Bat Records and Roost Details

Scientific Name	Common Name	Roost-Note	Locality	Records	Year/s
<i>Barbastella barbastellus</i>	barbastelle	No	Eye and Oakley	2	2018-2019
<i>Eptesicus serotinus</i>	serotine	No	Eye, Brome, Oakley, Stuston	6	2018-2019
<i>Myotis sp.</i>	Myotis species	No	Oakley	1	2017
<i>Myotis daubentonii</i>	Daubenton's bat	No	Brome and Oakley	5	2014 - 2018
<i>Myotis nattereri</i>	Natterer's bat	No	Eye, Brome, Oakley, Stuston	7	2018 - 2019
<i>Nyctalus leisleri</i>	Leisler's bat	No	Eye, Brome, Oakley, Stuston	3	2018 - 2019
<i>Nyctalus noctule</i>	Noctule	No	Eye, Brome, Oakley, Stuston	8	2014 - 2019
<i>Pipistrellus pipistrellus</i>	common pipistrelle	<10 bats, 2017-31950-EPS-MIT	Long Beren Upper Street, 820m NE	1	2017
		Droppings	Brome Church, 850m west	1	2017
		Small Roost - EPSM2013-6802	2 The Street, Brome *Adjacent to Site *	1	2013
		Multiple roosts in barn	Church Farm, 900m W	1	2016
		Multiple roosts in barn	Warrenhill Farm, Oakley, 1.4km NW	1	2016
		Roosting in roof	'The Bungalow' 350m SE	1	2016
		No	Eye, Brome, Oakley, Stuston	11	2014 - 2018
<i>Pipistrellus pygmaeus</i>	soprano pipistrelle	<10 bats, 2017-31950-EPS-MIT	Long Beren Upper Street, 820m NE	1	2017
		No	Eye, Brome, Oakley, Stuston	11	2013 - 2019
<i>Plecotus auritus</i>	brown long-eared	Droppings	Brome Church, 850m west	1	2016
		Roost in barn	Church Farm, 900m W	1	2016
		Maternity Roost	Warrenhill Farm, Oakley, 1.4km NW	1	2016
		Individual bat - EPSM2013-6802	2 The Street, Brome *Adjacent to Site *	1	2013
		No	Eye, Brome, Oakley, Stuston	5	2013 - 2019

These records include records from the adjacent property (2 The Street Brome), which was surveyed in 2013²¹. Both the Site and 2 The Street were initially assessed at the same time, as both properties applied to convert loft spaces to residential at the same time. Ecology survey documents were submitted covering both properties, with PEA-equivalent and a bat survey report undertaken. The bat survey report was only detailed in the application for 2 The Street (PP ref: 3732/12), as dropping had been found in the loft void. The Site was assessed as having negligible suitability for bats and was covered by surveys of 2 The Street in any event. Bats were absent from the Site and a European Protected Species License was obtained for works to 2 The Street (EPSM2013-6802) with roosting common pipistrelle and brown long-eared bats present.

4.1.2 Field Survey

Roosting Habitat

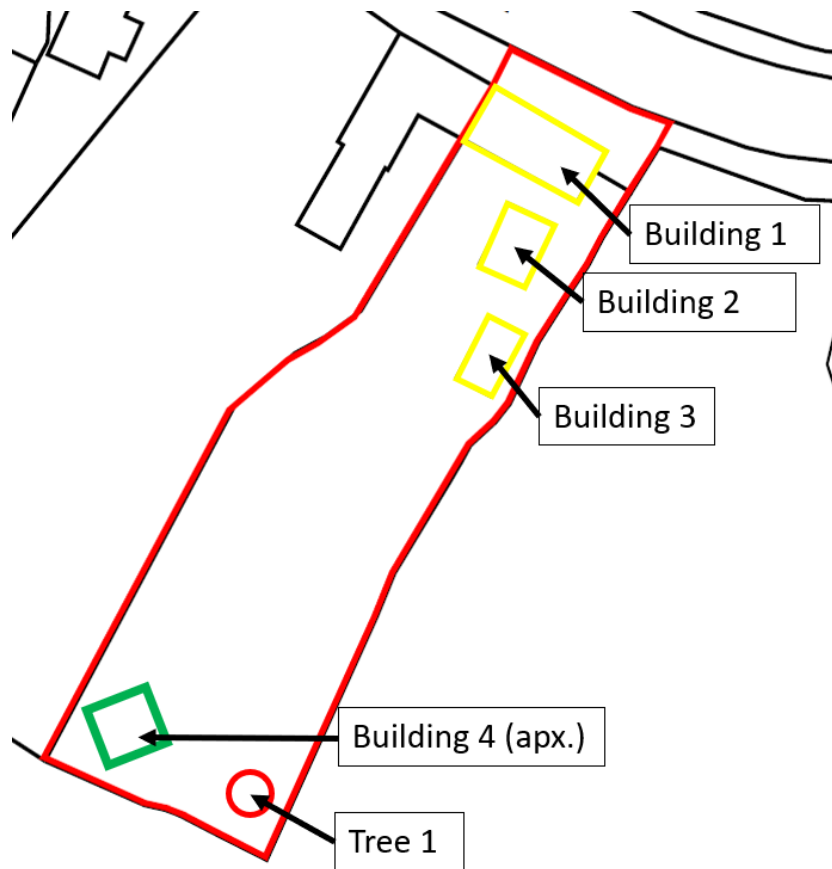


Figure 3: Buildings Onsite

Building 1 – Low Suitability¹²

A two-storey listed residential property, dating back to the early 17th century, formerly used as a public house. The building is timber framed and rendered. The northern aspect of the roof is thatched, with clay pan tile on the southern aspect. This southern aspect includes a low number of lifted tiles which provide potential crevice features suitable for roosting bats, constituting low suitability features. These features were not noted in the 2013 assessment.

The loft void has been converted and as such, there is no internal roosting suitability for bats.

Building 2 – Low Suitability¹²

A single storey rendered outbuilding with a clay pan tile gable roof. Potential roost features were limited to lifted tiles on both the east and west aspect. The low number and nature of these are indicative of low suitability features which have the potential to support low status roosts.

The interior was divided into two rooms used for storage. A small room to the north had a boarded ceiling and no suitability for roosting bats. The larger room to the south, was subject to notable light ingress from a west facing window. The roof was lined with felt sarking, heavy cobwebbing was present across the roof space. No evidence of bats was noted. It is not considered that this room increases suitability of the building.

Building 3 – Low Suitability¹²

A breeze block garage with clay pan tile roof. Potential roost features were limited to lifted tiles.

Building 4 – Negligible Suitability¹²

A summer house in the southwest corner of the Site. No potential roost features were noted.

Trees**Tree 1 – High Suitability¹²**

A mature pedunculate oak tree in the southeast corner of the Site, unaffected by development proposals. Features include several woodpecker holes and deadwood in the crown. The woodpecker holes are considered to offer high suitability for bats.

No other trees on the Site were noted to have any potential roost features (PRFs) and, consequently, all trees were assessed as having *negligible suitability¹²* for roosting bats.

Foraging and Commuting

The development area itself is considered to have no value or suitability for foraging and commuting bats, comprising a small area of artificial surface. The planting, notably trees, within the Site do provide *moderate suitability¹²* and lie on the edge of woodland, which is considered to meet the criteria for *high suitability¹²* foraging and commuting habitat. T

he nature of the Site means that, while bats may commute across it, it is not of notable suitability for commuting bats.

4.1.3 Assessment of Effects

Building 2 will be directly impacted by the proposals. While the development will not impact the roof of Building 1, the extension has potential to impact access for bats if a roost were to occur under a lifted tile on the southern elevation of Building 1.

Therefore, further assessment survey is required, in the form of a presence/ absence survey, to ascertain whether bats are roosting within external features on the southern aspect of Building 1 or in Building 2. Without further assessment, the development has potential to cause the injury or death of bats and damage or destroy a bat roost.

Building 3 could be indirectly impacted by the development should changes in external lighting occur.

Building 4 and Tree 1 are unaffected by the proposals.

Any changes in external lighting could also impact the value of foraging and commuting habitat of the adjacent woodland which has high suitability for use by bats.

4.1.4 Requirements

Prior To Submission

A single dusk emergence survey should be undertaken between May and August to ascertain whether bats are roosting in the southern aspect of Building 1 or in Building 2. This should follow best practice guidelines. Should bats be present then further surveys and a Natural England license may be required.

Design Stage

Compensate for the loss of potential roosting features by including a wall mounted bat box on the southern gable end of the Building 3. Either a stonecrete or Kent-style bat box is suitable.

Any lighting schemes to be installed during and post-construction must be designed to prevent unnecessary light spill onto boundary vegetation and any bat boxes installed as part of the development. The following guidance²²²³ 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 bats²⁴.
- A warm white spectrum (ideally <2700Kelvin) 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 columns²⁵ will reduce the spill of light into unwanted areas such as the aforementioned habitats.
- Artificial lighting proposals must not directly illuminate boundary habitats, trees, or bat box locations.

With these lighting measures implemented, it is considered that any potential adverse effects from lighting upon bats will be minimised.

4.1.5 Enhancements for Biodiversity Net Gain

Include three Kent-style bat boxes on Tree 1, situated c.4m high, facing southeast, southwest, and north.

4.2 Birds

4.2.1 Desk Study

Records of species returned by the data search included a range of species typical of the landscape surrounding the Site and included notable²⁶ species listed in Table 3, below.

Table 5: Notable Birds within Data Search

Species		Protection			
Scientific Name	Common Name	Schedule 1 WCA	BoCC Status	National Priority	Local Priority
<i>Apus apus</i>	Swift		Amber		✓
<i>Delichon urbicum</i>	House sparrow		Amber		
<i>Muscicapa striata</i>	Spotted flycatcher		Red	✓	✓
<i>Passer domesticus</i>	House sparrow		Red	✓	✓
<i>Poecile palustris</i>	Marsh tit		Amber	✓	✓
<i>Prunella modularis</i>	Dunnock		Amber	✓	✓
<i>Pyrrhula pyrrhula</i>	Bullfinch		Amber	✓	✓
<i>Strix aluco</i>	Tawny owl		Amber		
<i>Sturnus vulgaris</i>	Starling		Red	✓	✓
<i>Turdus philomelos</i>	Song thrush		Red	✓	✓

4.2.2 Field Survey

The field survey noted the following species on the Site, seen in Table 6.

Table 6: Birds Seen On Site Visit

Species			Protection			
Scientific Name	Common Name	Breeding?	Schedule 1 WCA	BoCC Status	National Priority	Local Priority
<i>Cyanistes caeruleus</i>	Blue tit	Possible		Green		
<i>Troglodytes troglodytes</i>	Wren	Possible		Green		
<i>Turdus merula</i>	Blackbird	Possible		Green		

The pantiles on Buildings 1-3 offer suitable nesting habitat, with Building 2 also providing suitable features for species such as wren inside and on external vegetation where a *Clematis sp.* was noted on the southern elevation.

4.2.3 Assessment of Effects

The development will see small a loss of suitable habitat for nesting birds and has potential to cause the damage or destruction of active nests. There is suitable scope to enhance the Site for nesting birds.

4.2.4 Requirements

Initial roofing works should be undertaken outside of the nesting bird season (the nesting bird season is considered to run from March to August, inclusive, but does vary depending on weather).

If this is not possible and works begin during the during nesting season, then it should only be undertaken 24-48 hours after a nesting bird check undertaken by a suitably experienced ecologist. Should nests be encountered then clearance around the nest will be paused and a reasonable buffer installed until young have fledged the nest.

The loss of nesting habitat should be compensated for by including two house sparrow terraces on the new extension or Building 3. These should be facing north or east and at least 2m above ground level.

4.2.5 Enhancements for Biodiversity Net Gain

A total of three hole-fronted nest boxes, including holes between 28 and 38mm, mounted on retained trees around the site, 2-4m high, away from full sun.

4.3 Priority & Notable Species

4.3.1 Desk Study

The desk study returned records for hedgehog (*Erinaceus europaeus*) within 1km of the Site.

4.3.2 Field Survey

The garden provides suitable habitat for foraging hedgehogs and a range of notable invertebrates.

4.3.3 Assessment of Effects

The development has notably low 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.

4.3.4 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 to the Site boundary.

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 impermeable fencing; failing this, any impermeable fencing installed should have 13x13cm holes in the base to provide access. These ideas will allow a hedgehog highway to be created across the Site. To further raise awareness these access points can be marked with "Hedgehog Highway" signs.

4.3.5 Enhancements for Biodiversity Net Gain

A hedgehog house should be installed in a quiet area of the Site, such as the southern boundary.

4.4 Invasive Species

4.4.1 Desk Study

The desk study returned records of a range of invasives, these were limited to fauna and aquatic flora unlikely to be present onsite, with the exception of Few-flowered garlic (*Allium paradoxum*) and yellow archangel (*Lamium galeobdolon* subsp. *Argentatum*).

4.4.2 Field Survey

No invasive species were noted during the field survey.

4.4.3 Assessment of Effects

With no invasive species noted, the development is not considered likely to contribute to the spread on invasive species.

4.4.4 Requirements

No further requirements.

5 Enhancements for Biodiversity Net Gain 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 7, 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 7: Summary of Additional Biodiversity Enhancement Measures

Group or Habitat	Enhancement
Habitats	Four fruit trees to be planted
Bats	Three Kent-style bat boxes mounted on Tree 1
Birds	Three hole-fronted bird boxes in a range of sizes
Hedgehogs	Install a hedgehog house on the southern boundary

6 References

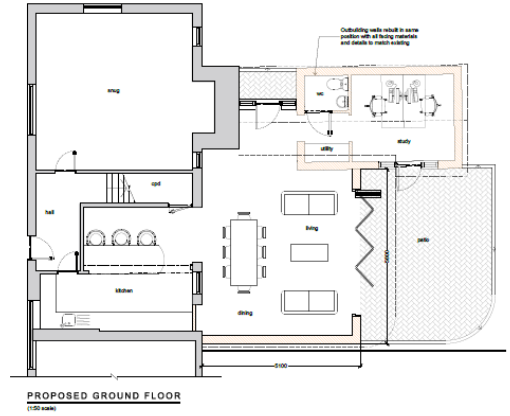
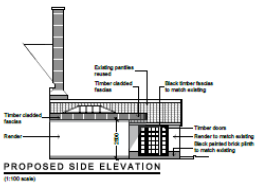
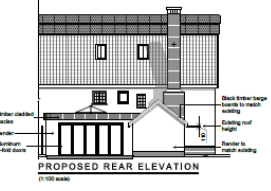
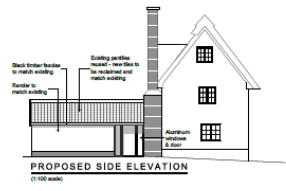
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Appendix 1: Proposed Site Plan

1 THE STREET, BROME

GENERAL NOTES:

1. This drawing is to be read in conjunction with all relevant drawings, reports, approvals and specifications.



1	1/100	Proposed Extension	1/100
2	1/200	Proposed Site Plan, Floor Plan and Elevations	1/200

M/S Scales

Proposed Extension
1 The Street, Brome
Scale: 1/100

Proposed Site Plan, Floor Plan and Elevations
Scale: 1/200

15/01/19 | 15/01/19 (A) | 15/01/19 (B)

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Appendix 2: Site Photographs

P1: B 1 and 3, Northern Elevation



P2: B 1 Southern Elevation and B 2 West Aspect



P3: B 2 Eastern Elevation



P4: B 2 West Elevation showing lifted tiles



P5: B 1 Lifted tiles



P6: Vegetated Garden with Tree 1 centre left



P7: B 2 Interior



P8: B 2 Interior



P9: Log pile on driveway



P10: Pond 1



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).