



Preliminary Ecological Appraisal

163 New Street

Survey Date: 15th September 2026

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Contents

1. Introduction
 - 1.1 Report rationale
 - 1.2 Site description and works
2. Survey Methodology
 - 2.1 Desktop Survey
 - 2.2 Field Survey
3. Desktop Survey Results
 - 3.1 Statutory Sites
 - 3.2 Species Records
4. Field Survey
 - 4.1 Habitats
 - 4.2 Species
 - 4.3 Potential impacts of the works
5. Recommendations
 - 5.1 Designated Sites
 - 5.2 Habitats
 - 5.3 Species
 - 5.4 Site Enhancements
6. References
7. Appendices

Appendix A: Site Plans

Appendix B: Phase 1 Habitat Maps

Appendix C: Site Photographs

Appendix D: Biodiversity Legislation and Policy

Appendix E: Bats and Artificial Light
8. Notice to Readers: Conditions of this Report

1. Introduction

1.1 Report rationale

This report has been prepared at the request of Mr Michael Coffey. Eco 360 were commissioned to undertake a Preliminary Ecological Appraisal at 163 New Street, Earl Shilton, LE9 7FT. The survey effort involved a desktop study and field survey.

The main purpose of this assessment was to identify the broad habitats (as stated in the UKHab Ltd (2023). UK Habitat Classification V.2.0) and the flora species present within the survey area, with any evidence of protected species usage and/or features of potential ecological interest also included. The field survey was carried out on 15th September 2026 by Nathan O'Shea BSc (Hons), Ecologist.

1.2 Site description and works

The surveyed site comprises a single-storey residential dwelling, a detached garage, associated hardstanding and front and rear gardens at 163 New Street, Earl Shilton. Habitats within the site comprise developed land; sealed surface, vegetated garden, introduced shrub, a short section of non-native ornamental hedgerow and an individual mature apple tree.

The rear garden includes lawn, raised beds, introduced shrub planting along the western boundary and sealed surfaces associated with the garage, paths and paving. A mature apple tree is present close to the northern boundary, with several younger trees overhanging from the neighbouring garden to the west. The eastern boundary is partly lined by Lawson cypress. The front garden comprises driveway and paved surfaces, vegetated garden and introduced shrubs. A small brash pile occurs in the south-western corner and provides limited shelter for common wildlife, including hedgehogs.

1.3 Proposals

The submitted plan indicates the reconfiguration and extension of the existing dwelling to form three residential units. Four parking spaces are proposed to the front of the site, with garden and amenity space retained to the rear.

1.4 Survey Limitations

No significant survey limitations were encountered.



Figure 1: Application site boundary (red).

2. Survey Methodology

2.1 Desktop Survey

A variety of resources were independently consulted to assess the known local records within the nearby area and the importance of the site within the local landscape from an ecological perspective. The resources used were www.naturalengland.org.uk, www.ordnancesurvey.co.uk, Google Maps, Google Earth and Bing Maps. A search of other relevant nature conservation information was made through the use of the National Biodiversity Network (NBN) and the Multi-Agency Geographic Information for the Countryside (MAGIC) database.

The local records centre was contacted to provide data on all protected species and designated sites within a 2km radius of the proposed development site.

2.2 Field Survey

A Preliminary Ecological Appraisal (previously referred to as an Extended Phase 1 Habitat Survey) was carried out using the method outlined in the JNCC Handbook for *Phase 1 Habitat Survey: a technique for environmental audit (2010)*. This method aims to map and describe the broad habitat types and notable features present on the surveyed site.

As part of the field survey, the floral species will be identified and noted down. This will consider the dominant, abundant, frequent, occasional and rare (DAFOR) species within each habitat on the survey site. The impacts of the proposed development scheme will be assessed by this report.

Each habitat will be assessed for the presence and/or the potential presence of protected species. The impacts of the proposed scheme of works on all potential protected species on site will be assessed. From this, either remedial action or recommended phase 2 presence/absence surveys will be devised.

Some of the classification codes and colours listed within the JNCC handbook may have been slightly modified for this project.

Habitat Surveys can be carried out at any time of the year, with the optimal time period falling between the months of April through until September. Eco 360 feels confident that the majority of the floral species located on the site were competently identified during the survey effort. In addition to this, Eco 360 feels confident that this report reflects an accurate representation of the sites suitability for protected species to be present.

All sites surveyed by Eco 360 will be run against the relevant Local Wildlife Site Criteria to assess whether or not they meet the required standards.

3. Desktop Survey Results

3.1 Sites

A search of MAGIC Maps identified no statutory designated nature conservation sites within 1 km of the application site. Given the residential setting and the small scale of the site, no impacts upon statutory designated sites are anticipated.

3.2 Species Records

3.2.1 Amphibians

Within the ecological data search, three amphibian species were detected within the 1 km search radius, including Common Toad (*Bufo bufo*), Smooth Newt (*Lissotriton vulgaris*), and Common Frog (*Rana temporaria*).

3.2.2 Birds

Within the ecological data search, 81 bird species were detected within the 1 km search radius. These included UKBAP species of sky lark (*Alauda arvensis*), common cuckoo (*Cuculus canarus*) and lapwing (*Vanellus vanellus*).

3.2.3 Crustaceans

Within the ecological data search, no species of protected crustaceans were revealed within the 1 km search radius.

3.2.4 Fish

Within the ecological data search, no species of protected or rare fish species were revealed within the 1 km search radius.

3.2.5 Flora

Within the ecological data search, 361 species were identified within the radius.

3.2.6 Fungi

Within the ecological data search, no fungal species were revealed within the 1 km search radius.

3.2.7 Invertebrates

Within the ecological data search, 23 invertebrate species were revealed within the 1 km search radius.

3.2.8 Mammals

Within the ecological data search, one notable mammal species was detected within the 1 km search radius. This was the water vole (*Arvicola amphibius*). No bat or other terrestrial species could be identified.

3.2.9 Molluscs

Within the ecological data search, 4 mollusc species were revealed within the 1 km search radius.

3.2.10 Reptiles

Within the ecological data search, no reptile species were revealed within the 1 km search radius.

4. Field Survey

4.1 Habitats

The preliminary ecological appraisal identified the habitats listed below. The habitat map is provided in Appendix B.

4.1.1 Developed Land; Sealed Surface

Developed land and sealed surfaces comprise the existing dwelling, detached garage, driveway, paths and paved areas. These habitats are of negligible intrinsic ecological value.

The hard surfaces are concentrated around the dwelling and garage and extend along the principal access through the site.

4.1.2 Vegetated Garden

Vegetated garden occurs within both the front and rear gardens and is dominated by regularly managed lawn and ornamental planting. Raised beds are present within the rear garden.

Although common and managed, the garden vegetation provides limited foraging and sheltering opportunities for common wildlife within the surrounding residential area.

4.1.3 Introduced Shrub and Non-native Ornamental Hedgerow

Introduced shrub beds and borders occur along the western boundary of the rear garden and within the front garden. The eastern boundary is partly lined by a non-native Lawson cypress hedgerow.

These ornamental features are of limited botanical value but provide some habitat structure and potential nesting, sheltering and foraging opportunities for common wildlife.

4.1.4 Individual Trees

A mature apple tree is present adjacent to the northern boundary. Several younger privet and apple trees overhang the western boundary from the neighbouring garden.

The trees contribute to the habitat structure of the site and provide limited nesting and foraging opportunities for common wildlife.

4.2 Species

The habitats within the proposed development area provide generally limited protected species potential. The assessment below also considers adjacent habitats and connectivity within the surrounding residential landscape.

4.2.1 Amphibians (including Great Crested Newts)

No suitable aquatic habitat was identified within the application site. The managed garden and built environment provide only limited terrestrial habitat for amphibians.

Taking account of the habitat types, their management and the residential setting, the potential for impacts upon amphibians, including great crested newts, is considered negligible.

4.2.2 Badgers

No evidence of badger activity or setts was identified within the application site.

The enclosed, regularly managed residential garden provides limited opportunities for badgers. The potential for impacts upon badgers is considered negligible.

4.2.3 Bats

The buildings, trees and garden habitats were assessed for their potential to support roosting, foraging and commuting bats.

Building Survey

Two buildings are present: the main residential dwelling (B1) and detached garage (B2).

B1 - Main Dwelling

External

B1 is a single-storey brick-built dwelling beneath a pitched tiled roof. Potential roosting features comprise gaps at the eaves, particularly on the southern elevation where the building adjoins the tree and vegetated garden habitats.

No bats or definitive evidence of bat roosting were recorded. The identified eaves features provide limited crevice access and the building is assessed as having Low potential to support roosting bats. Its residential surroundings and limited habitat connectivity reduce the likelihood of regular use or use by a roost of higher conservation significance.

Internal

The accessible roof void was inspected for bats and evidence of use, including droppings, staining and feeding remains.

No bats or definitive evidence of bat use were identified internally.

On the basis of the identified external eaves features, B1 is assessed as having Low potential to support roosting bats.

B2 - Detached Garage

External

B2 is a detached brick-built garage beneath a pitched tiled roof. The building was inspected externally and internally where accessible.

No suitable roosting features or evidence of bat use were identified in association with B2.

B2 is assessed as having negligible potential to support roosting bats.

Internal

The internal garage roof structure was visible and was inspected for bats and evidence of use.

No bats, droppings, staining, feeding remains or other evidence of bat use were identified.

Trees

The mature apple tree and overhanging young trees were assessed from ground level. No potential roosting features were identified in trees that may be affected by the works.

The potential for impacts upon roosting bats associated with trees is considered negligible, provided the trees are retained.

Foraging and Commuting Habitat

The vegetated garden, introduced shrubs, ornamental hedgerow and trees provide limited foraging and commuting habitat for bats within an otherwise residential setting.

The site is small and does not form a significant linear habitat connection. The retained garden and boundary vegetation nevertheless contribute to local habitat structure.

Potential impacts upon roosting bats are Low due to the eaves features on B1. Potential impacts upon foraging and commuting bats are considered negligible, subject to retention of boundary vegetation and sensitive lighting.

4.2.4 Birds

No active bird nest was identified. Bird droppings beneath a gap between the wall and eaves indicate previous nesting use, likely by a common species such as house sparrow or tit.

The eaves, mature apple tree, overhanging trees, ornamental hedgerow and introduced shrubs provide suitable nesting habitat for common birds.

4.2.5 Hazel Dormouse

The site lacks the extent, diversity and connectivity of woody habitat required to provide suitable habitat for hazel dormouse.

The potential for impacts upon hazel dormouse is considered negligible.

4.2.6 Invertebrates

The managed garden, shrubs, hedgerow, tree and small brash pile may support common invertebrates, but no features indicating likely use by protected or notable species were identified.

The potential for impacts upon protected or notable invertebrates is considered negligible.

4.2.7 Reptiles

The regularly managed garden provides little dense ground cover. The small brash pile offers limited shelter, but the site is isolated within a residential area and no evidence of reptiles was identified.

The potential for impacts upon reptiles is considered negligible.

4.2.8 Water Voles

No suitable aquatic or riparian habitat is present within or immediately adjacent to the application site. The potential for impacts upon water voles is considered negligible.

4.2.9 White-clawed Crayfish

No suitable aquatic habitat is present within the application site. The potential for impacts upon white-clawed crayfish is considered negligible.

4.3 **Potential impacts of the works**

Based upon the results from the desktop survey, field survey and using a degree of academic supposition, the uncompensated development impacts have been summarised as follows:

- Amphibians – **Negligible**
- Badgers – **Negligible**
- Bats – **Low**
- Birds – **Low**
- Flora – **Negligible**
- Hazel Dormouse – **Negligible**
- Invertebrates – **Negligible**
- Reptiles – **Negligible**
- Water Voles - **Negligible**
- White-clawed crayfish – **Negligible**

5. Recommendations

5.1 Designated Sites

A search of MAGIC Maps identified no statutory designated nature conservation sites within 1 km. No specific mitigation in relation to statutory designated sites is required.

5.2 Habitats

No habitats of principal importance or other habitats of significant conservation value were identified within the application site. Where practicable, the mature apple tree, boundary vegetation and areas of vegetated garden should be retained and protected during works.

5.3 Species

The following measures are required in relation to species and habitats recorded or potentially present within the site:

5.3.1 Bats

B1 has Low potential to support roosting bats. One dusk emergence survey should be completed during the appropriate bat survey season before works that could affect the roof, eaves or identified potential roosting features. The results should inform any necessary mitigation and licensing requirements. If works are limited so that these features will not be affected, the requirement should be reviewed by a suitably qualified ecologist against the final plans. New external lighting should be kept to the minimum necessary and directed away from the roofline, trees and retained garden or boundary vegetation.

5.3.2 Birds

Evidence indicating previous bird nesting was identified beneath an eaves gap, and the buildings and garden vegetation provide suitable nesting habitat for common birds. Works affecting the roof or eaves, and any removal or substantial pruning of trees, hedgerows or shrubs, should be undertaken outside the main bird breeding season of March to August inclusive where practicable.

Where such works during the breeding season cannot be avoided, the affected features should be checked by a suitably qualified ecologist no more than 24 hours before works commence. If an active nest is identified, an appropriate exclusion zone must be retained until the young have fledged and the nest is no longer active.

5.4 **Site Enhancements**

For the proposed development works, the following site enhancement measures could be incorporated into the site post-development. These measures are optional but are bespoke to the site surveyed for the enhancement of biodiversity.

5.4.1 Amphibians and Reptiles

The existing brash pile should be retained within a quiet area of garden where practicable, or replaced with a compact log and brash pile after completion. This would provide shelter for amphibians, reptiles, hedgehogs and invertebrates.

5.4.2 Flora

Native species should be incorporated into any new landscaping. Nectar-rich and night-scented flowering plants would increase resources for pollinating insects and foraging bats.

5.4.3 Invertebrates

In conjunction with native and wildflower planting, a bumblebee box and insect hotel could be installed within a sheltered location. These features would provide additional nesting and sheltering opportunities for local invertebrates.

5.4.4 Hedgehogs

A hedgehog nesting box could be installed within suitable retained or newly established boundary vegetation.

Where new boundary fencing is proposed, gaps measuring approximately 13 cm × 13 cm should be incorporated at ground level to maintain connectivity for hedgehogs between the site and neighbouring gardens.

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7. Appendices

Appendix A: Site Plans

Appendix B: Phase 1 Habitat Map

Appendix C: Site Photographs

Appendix D: Biodiversity Legislation and Policy

Appendix E: Bats and Artificial Light

Appendix A: Site Plans

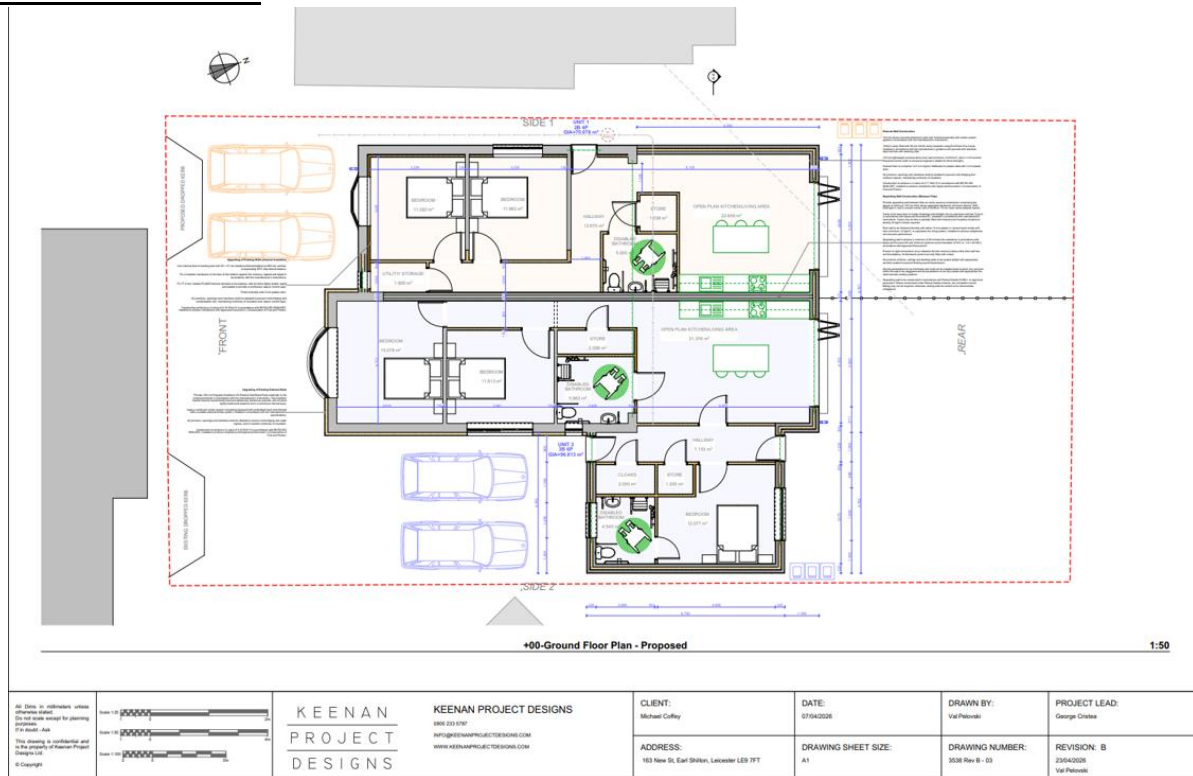


Figure A1: Proposed ground-floor plan

Appendix B: Phase 1 Habitat Map



Appendix C: Site Photographs



Plate 1: The driveway, sealed surfaces and detached garage viewed from the front of the site.



Plate 2: The accessible roof void showing the timber roof structure.



Plate 3: The internal roof structure and brick gable wall.



Plate 4: An overview of the roof void and chimney breast.



Plate 5: The rear elevation of the main dwelling and tiled roof.



Plate 6: A wider view of the rear elevation and surrounding garden vegetation.



Plate 7: A close view of the eaves and wall junction between the dwelling and neighbouring building.



Plate 8: The main dwelling viewed from the garden, showing its brick elevations and pitched tiled roof.



Plate 9: A close view of the tiled roof covering and chimney.



Plate 10: The side roof slope, chimney, eaves and associated rainwater goods.



Plate 11: The front elevation and principal roof slopes of the main dwelling.



Plate 12: The detached garage and narrow access between the buildings.



Plate 13: A close view of the garage eaves and roof junction.



Plate 14: The internal structure of the detached garage roof.



Plate 15: The detached garage viewed from the rear garden, with the main dwelling beyond.



Plate 16: The rear garden showing managed lawn, introduced shrubs, raised beds and paved areas.



Plate 17: The rear garden showing the greenhouse, managed lawn, planting beds and boundary trees and shrubs.



Plate 18: Dense shrubs and ornamental boundary vegetation within the garden.



Plate 19: The front vegetated garden and ornamental planting beside the main dwelling.

Appendix D: Biodiversity Legislation and Policy

General Legislation and Policy:

The framework of legislation and policy which underpins nature conservation in England. This is a material consideration in the planning process in England.

Conservation of Habitats and Species Regulations 2017 (Habitats Regulations 2010 as amended)

The Conservation of Habitats and Species Regulations 2017 consolidate and update the Conservation Regulations 1994 and the conservation of habitats and species regulations 2010 (and all their amendments). The Conservation of Habitats and Species Regulations 2017 are the principal means by which the EEC Council Directive 92/43 (The Habitats Directive) as amended is transposed into English and Welsh law.

The Conservation of Habitats and Species Regulations 2017 place duty upon the relevant authority of government to identify sites which are of importance to the habitats and species listed in Annexes I and II of the Habitats Directive. Those sites which meet the criteria are, in conjunction with the European Commission, designated as Sites of Community Importance, which are subsequently identified as Special Areas of Conservation (SAC) by the European Union member states. The regulations also place a duty upon the government to maintain a register of European protected sites designated as a result of EC Directive 79/409/EEC on the Conservation of Wild Birds (The Birds Directive). These sites are termed Special Protection Areas (SPA) and, in conjunction with SACs, form a network of sites known as Natura 2000. The Habitats Directive introduces for the first time for protected areas, the precautionary principle; that is that projects can only be permitted having ascertained no adverse effect on the integrity of the site. Projects may still be permitted if there are no alternatives, and there are imperative reasons of overriding public interest.

The Conservation of Habitats and Species Regulations 2017 also provide for the protection of individual species of fauna and flora of European conservation concern listed in Schedules 2 and 5 respectively. Schedule 2 includes species such as otter and great crested newt for which the UK population represents a significant proportion of the total European population. It is an offence to deliberately kill, injure, disturb or trade these species. Schedule 5 plant species are protected from unlawful destruction, uprooting or trade under the regulations.

The Wildlife and Countryside Act (WCA) 1981 (As amended)

The WCA, as amended, consolidates and amends pre-existing national wildlife legislation in order to implement the Bern Convention and the Birds Directive. It complements the Conservation (Natural Habitats. & c.) Regulations 1994 (as amended), offering protection to a wider range of species. The Act also provides for the designation and protection of national conservation sites of value for their floral, faunal or geological features, termed Sites of Special Scientific Interest (SSSIs).

Schedules of the act provide lists of protected species, both flora and fauna, and detail the possible offences that apply to these species.

The Countryside and Rights of Way (CROW) Act 2000

The CROW Act, introduced in England and Wales in 2000, amends and strengthens existing wildlife legislation detailed in the WCA. It places a duty on government departments and the National Assembly for Wales to have regard for biodiversity, and provides increased powers for the protection and maintenance of SSSIs.

The Act also contains lists of habitats and species (Section 74) for which conservation measures should be promoted, in accordance with the recommendations of the Convention on Biological Diversity (Rio Earth Summit) 1992.

The Natural Environment and Rural Communities (NERC) Act 2006

Section 40 of the NERC Act places a duty upon all local authorities and public bodies in England and Wales to promote and enhance biodiversity in all of their functions. Sections 41 (England) and 42 (Wales) list habitats and species of principal importance to the conservation of biodiversity. These lists supersede Section 74 of the CRoW Act 2000. These species and habitats are a material consideration in the planning process.

The Hedgerow Regulations 1997

The Hedgerow Regulations make provision for the identification of important hedgerows which may not be removed without permission from the Local Planning Authority.

UK Biodiversity Action Plan

The United Kingdom Biodiversity Action Plan (UKBAP), first published in 1994 and updated in 2007, is a government initiative designed to implement the requirements of the Convention of Biological Diversity to conserve and enhance species and habitats. The UKBAP contains a list of priority habitats and species of conservation concern in the UK, and outlines biodiversity initiatives designed to enhance their conservation status. Lists of Broad and Local habitats are also included. The priority habitats and species correlate with those listed on Section 41 and 42 of the NERC Act.

The UKBAP requires that conservation of biodiversity is addressed at a County level through the production of Local BAPs. These are complementary to the UKBAP, however are targeted towards species of conservation concern characteristic of each area. In addition, a number of local authorities and large organisations have produced their own BAPs. UKBAP and Local BAP targets with regard to species and habitats are a material consideration in the planning process.

Planning Policy (England) and National Planning Policy Framework

In early 2012, the National Planning Policy Framework (NPPF) replaced much previous planning policy guidance, including Planning Policy Statement 9: Biological and Geological Conservation. The government circular 06/05: Biodiversity and Geological Conservation - Statutory Obligations and Their Impact within the Planning System, which accompanied PPS9, still remains valid. A presumption towards sustainable development is at the heart of the NPPF. This presumption does not apply however where developments require appropriate assessment under the Birds or Habitats Directives. The latest National Planning Policy Framework was updated in February 2019, with the section in relation to conserving the natural environment being located within section 15.

Section 15, on conserving and enhancing the natural environment, sets out how the planning system should contribute to and enhance the natural and local environment by minimising impacts on biodiversity and, where possible, provide net gains in biodiversity. Opportunities to incorporate biodiversity gains into a development should be encouraged.

If a proposed development would result in significant harm to the natural environment which cannot be avoided (through the use of an alternative site with less harmful impacts), mitigated or compensated for (as a last resort) then planning permission should be refused.

Species Specific Legislation

This section contains a summary of legislation with relation to the species present or potentially present in the survey area. The reader should refer to the original legislation for definitive interpretation.

Nesting and Nest Building Birds

Nesting and nest building birds are protected under the Wildlife and Countryside Act WCA 1981 (as amended). Some species (listed in Schedule 1 of the WCA) are protected by special penalties.

Subject to the provisions of the act, if any person intentionally:

- kills, injures or takes any wild bird;
- takes, damages or destroys the nest of any wild bird while that nest is in use or being built; or
- takes or destroys an egg of any wild bird, he shall be guilty of an offence.

'Reckless' offences with regard to the disturbance of nesting wild birds included in Schedule 1 of the Wildlife and Countryside Act were added by the Countryside and Rights of Way Act 2000.

The Natural Environment and Rural Communities (NERC) Act 2006 places a duty on Government Departments to have regard for the conservation of biodiversity and maintains lists of species and habitats which are of principal importance for the purposes of conserving biodiversity in England and Wales. These lists include a number of bird species.

The reader is referred to the original legislation for the definitive interpretation.

Badger

The main legislation protecting badgers in England and Wales is the Protection of Badgers Act 1992 (the 1992 Act). Under the 1992 Act it is an offence to:

- wilfully kill, injure, take or attempt to kill, injure or take a badger;
- possess a dead badger or any part of a badger;
- cruelly ill-treat a badger;
- use badger tongs in the course of killing, taking or attempting to kill a badger;
- dig for a badger;
- sell or offer for sale or control any live badger;
- mark, tag or ring a badger; and
- interfere with a badger sett by:
 - damaging a sett or any part thereof;
 - destroying a sett;
 - obstructing access to a sett;
 - causing a dog to enter a sett; and
 - disturbing a badger while occupying a sett.

The 1992 Act defines a badger sett as: "any structure or place which displays signs indicating current use by a badger".

Bats

All species of bat are fully protected under a variety of domestic, European and international legislation and conventions. These include:

- Bern Convention (Appendix II)
- Bonn Convention (Appendix II)
- Conservation Regulations (Northern Ireland) 1995
- Conservation of Habitats and Species Regulations 2010
- Countryside Rights of Way Act 2000
- Eurobats Agreement
- Habitats Directive (Annexes IV and II)
- Habitats Regulations 1994 (as amended) Scotland
- NERC Act 2006
- Wildlife and Countryside Act 1981 (as amended)
- Wild Mammals Protection Act

In addition to this, some species have additional protection by being listed on the UK Biodiversity Action Plan (UKBAP).

The legislation afforded to bats makes it illegal to possess or control any live or dead specimens, to damage, destroy or obstruct access to any structure or place used for shelter, protection or breeding, and to intentionally disturb a bat while it is occupying a structure or place which it uses for that purpose.

All nesting birds are protected under the Wildlife and Countryside Act 1981 (as amended), which protects birds, nests, eggs and nestlings from harm. In addition to this, some rarer species, such as barn owls are afforded extra protection.

National Planning Policy Framework, Section 15:

The published framework in 2018 replaces the previous Planning Policy Statement 9 and National Planning Policy (dated 2012).

Section 15: Conserving and enhancing the natural environment reaffirms the government's commitment to maintaining green belt protections and preventing urban sprawl, retains the protection of designated sites and preserves wildlife. It also aims to improve the quality of the natural environment and halt declines in species and habitats, protects and enhances biodiversity and promotes wildlife corridors.

Biodiversity 2020:

This sets out to halt overall biodiversity loss and support healthy well-functioning ecosystems by establishing coherent ecological networks, with more and better places for nature, to the benefit of wildlife and people. The government's policy is aimed at individuals, communities, local authorities, charities, business and government, which all have a role to play in delivering Biodiversity 2020.

Freshwater White-clawed Crayfish

The white-clawed crayfish is partially protected under Wildlife and Countryside Act 1981 (as amended). It is listed on schedule 5 and therefore afforded protection under Section 9 (1 and 5).

Therefore, it is an offence to take white-clawed crayfish and to sell, or attempt to sell, any part of the species, alive or dead, or intend to buy or sell.

Great Crested Newt

The great crested newt (*Triturus cristatus*) is fully protected under a variety of legislation and conventions. These include:

- Bern Convention (Appendix II)
- Conservation (Natural Habitats, &c.) Regulations 1994 (as amended)
- Conservation of Habitats and Species Regulations 2010
- EU Habitats Directive (Annex II and IV)
- Nature Conservation (Scotland) Act 2004
- NERC Act 2006 (Section 41 England; Section 42 Wales)
- Wildlife and Countryside Act 1981 (as amended)

In addition to this, the great crested newt has been listed as a priority species on the UK Biodiversity Action Plan (UKBAP).

This legislation covers all aspects of newt life stages (eggs, efts and adult newts) and makes it illegal to damage, destroy or obstruct access to any structure or place used for shelter, protection or breeding, and to intentionally disturb a great crested newt while it is occupying a structure or place which it uses for that purpose.

Licenses can be obtained from Natural England (DEFRA) under the Conservation (Natural Habitats etc.) Regulations 1994, to permit activities for the purposes of:

- Regulation 44(2)(e): Preserving public health or public safety or other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment, or
- Regulation 44(2)(f): Preventing the spread of disease
- Regulation 44(2)(g): Preventing serious damage to any form of property or fisheries

Or

- If there is no satisfactory alternative.

The above regulations allow people to carry out activities which would otherwise be illegal.

Hazel Dormouse

Hazel Dormouse and their habitats are protected by:

- Wildlife and Countryside Act 1981 (as amended)
- Countryside Rights of Way (CROW) 2000
- The Natural Environment and Rural Communities Act 2006
- Conservation of Habitat and Species Regulations 2010

These make it an offence to:

- Capture, injure or kill a Hazel Dormouse
- Disturb a Hazel Dormouse
- Damage or destroy breeding or nesting sites in use by Hazel Dormice
- Disturb a Dormouse whilst it is occupying a structure or place that they use for shelter or protection
- Obstruct access to any structure or place that the Dormouse uses for shelter and protection.
- To possess or control any live or dead specimens.

Otter

Otters are fully protected by the European Habitats Directive (92/43/EEC) by being incorporated in annex II of the legislation. In addition to this, otters are listed on schedule 5 of the Wildlife and Countryside Act 1981 (as amended). This makes it an offence to:

- To intentionally kill, injure or take an otter.
- To possess or control any live or dead specimens.
- To intentionally or recklessly damage, destroy or obstruct access to any structure, feature or place of shelter in use by otters.
- To intentionally or recklessly disturb an otter whilst it is in occupation of a feature or structure.
- To sell, possess or transport for the purpose of sale or publicly declare the desire to buy or sell otters.

Reptiles

All six native reptiles within Great Britain are legally protected, with the extent of protection varying dependent upon their rarity and conservation importance.

Those that receive full protection under the Wildlife and Countryside Act 1981 (as amended) are the rare sand lizard and smooth snake. These species also receive protection under the Conservation (Natural Habitats &c.) Regulations 1994 (also referred to as the Habitats Directive). This means that they are protected from deliberate disturbance, killing, injury or capture and the habitat in which they live is also fully protected against damage or destruction. Any activity involving disturbance or damage to habitats utilised by sand lizards or smooth snakes would require a licence issued by the Department of the Environment, Food and Rural Affairs (DEFRA) following consultation with the statutory nature conservation organisation (Natural England).

The remaining four reptile species are 'partially protected' under the Wildlife and Countryside Act 1981 (as amended), with these species being slow-worm, common lizard, grass snake and adder. This means that these species are protected against intentional killing, injuring and against sale, but their habitat is not protected. In planning terms this means that the presence of these species is a material consideration and there is a requirement to ensure that any reptile interest is safeguarded. If a proposed development is likely to have an impact on these reptiles, then the statutory nature conservation organisation must be notified, particularly if capture and translocation is being proposed. In some parts of the UK, sites that support common reptile species such as common lizards and slowworms can qualify as County Wildlife Sites. Sites of this designation may receive protection in planning policy.

Water Voles

Water Voles are fully protected under the Wildlife and Countryside Act 1981 (as amended). This makes it an offence to:

- To intentionally kill, injure or take a water vole.
- To possess or control any live or dead specimens.
- To intentionally or recklessly damage, destroy or obstruct access to any structure, feature or place of shelter in use by water voles.
- To intentionally or recklessly disturb a water vole whilst it is in occupation of a feature or structure.
- To sell, possess or transport for the purpose of sale or publicly declare the desire to buy or sell water voles.

Non-Native Floral Species

It is an offence under schedule 9 of the Wildlife and Countryside Act 1981 (as amended) to plant or otherwise cause non-native flora to grow in the wild. This includes the transportation of earth that has previously had non-native species growing and includes the spread of the species.

All stands of non-native floral species need to be disposed of safely at a licenced landfill site according to the Environmental Protection Act (Duty of Care) Regulations 1991.

Appendix E: Bats and Artificial Light

Artificial lighting is known to affect bat's roosting and foraging behaviour, with lighting resulting in a range of impacts that includes roost desertion (BCT, 2009), delayed emergence of roosting bats (Downs et al., 2003), increased activity of some bat species and decreased activity by others (Stone et al., 2012).

An experimental approach using LED units, demonstrated that relatively fast-flying bat species, including the common pipistrelle, showed no significant impacts as a result of new artificial lighting, even when lighting was set at relatively high levels close to 50 lux.

In contrast, slow flying bats such as the myotis bats (*Myotis* spp.) showed sharp reductions in presence, even at low light levels of 3.6 lux (Stone et al., 2012).

Current recommendations for all bat species specifies that no bat roost should be directly illuminated.

Due to the impacts of lighting, mitigation and sensitive lighting design schemes are required for projects where bats are present. These should include bat friendly lighting plans that should aim to avoid lighting wherever possible. If this is not possible, then the minimisation of any lighting impacts is required by adopting the following measures:

➤ **To introduce lighting curfews or use of PIR sensors.**

Lighting curfews can be an effective way of avoiding impacts on bats. These curfews may involve either turning off lighting or dimming light units at specific times of the night, dimming units at key times of the year, providing the luminaire allows for this option via a control unit. Lighting to be triggered by PIR sensors can be expected to be illuminated only when required and for a low proportion of time.

➤ **To consider no lighting solutions where possible.**

Options such as white lining, good signage and LED cat's eyes should be considered as preferable. Reflective fittings may help make use of headlights to provide any necessary illumination in some areas.

➤ **To use only high pressure sodium or warm white LED lamps where possible.**

High pressure sodium and warm white LED lamps emit lower proportions of insect attracting UV light than mercury, metal halide lamps and white LED lighting. Generally, lamps should have a lower proportion of white or blue wavelengths, with a colour temperature <4200 kelvin recommended (BCT, 2014).

➤ **To minimise the spread of light.**

The light spread should be kept at or near horizontal to ensure that only the task area is lit. Flat cut-off lanterns or accessories should be used to shield or direct light to where it is required. Baffles, hoods, louvres and shields should be used where necessary to reduce light spill.

➤ **To consider the height of the lighting column.**

While downward facing bollard lighting is often preferable, it should be noted that a lower mounting height does not automatically reduce impacts to bats as bollard lighting can often be designed to provide up-lighting. Where bollard lighting is considered to be the most appropriate system, bollard spacing or unit density should be kept to a minimum and units should be fitted with the appropriate hoods/deflectors to reduce any up-lighting.

➤ **To avoid reflective surfaces below lights.**

The polarisation of light by shiny surfaces attracts insects increasing bat activity (BCT, 2012). Consequently, surface materials around lighting require consideration.

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No reliance should be made on any such comments in relation to the structural integrity of the features located on the surveyed site. All information within the report is based solely on evidence that has been found on site during the service provided. No individual opinion or inference will be made other than that of the suitably qualified ecologist appointed to the project.