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Biodiversity Enhancement Strategy

Trackway at Holmsted Farm, Staplefield RH17 5JT

Client

Bill Hayward

Date of Issue

17th September 2025

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Report Summary

1. Libby Morris was commissioned by Bill Hayward to provide a Biodiversity Enhancement Strategy to be submitted alongside a planning application to Mid Sussex District Council in regards to a proposed trackway with associated habitat enhancement on land east within Holmsted Farm. This document outlines targeted enhancement measures and details of management and remedial responsibilities.

2. This report is submitted to further enhance the site for protected and priority species and contribute to a net gain in biodiversity in accordance with the NPPF requirements and Schedule 7A of the Town and Country Planning Act 1990 as well as policies laid out in the Mid Sussex District Plan 2014–2031.

3. Section 3 of this report sets out proposed enhancements of the site which include:

- Enhancement of grassland habitat
- Implementation of sensitive lighting scheme
- Implementation of log piles as hibernacula for invertebrates and reptiles

4. A broad methodology for these works is laid out in section 3. A further works schedule is provided in section 4, outlining management responsibilities, with section 5 detailing the specification of works that are to be undertaken, and whether a licenced individual is required for these works. This section also recommends that a site inspection is undertaken by a suitably qualified ecologist after completion of enhancement measures to ensure compliance with this report and that all enhancement measures are correctly implemented.

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About the Author

This report has been prepared by Libby Morris BSc (Hons), an ecologist with eight years experience undertaking field-based surveys as well as being a FISC level 4 accredited botanist and a MoRPH5 licenced surveyor of rivers. She is experienced in habitat and PEA surveys as well as statutory Biodiversity Net Gain and habitat assessing.

1. Introduction

1.1 Purpose of the Report

Libby Morris has been commissioned by Bill Hayward to design a Biodiversity Enhancement Strategy in response to a proposed application to create a permeable track on land at Holmsted Farm. Enhancements to the site comprise the enhancement of modified grassland, as well as providing provisions for amphibians and invertebrates. This document outlines both the proposed enhancement measures and the methodology and implementation requirements for the site and must be implemented in accordance with the instructions set out below. This document will be submitted to Mid Sussex District Council as part of the planning application.

The mitigation measures laid out within this document are to be issued to the client and all works contractors to ensure that they are carried out in full and in accordance with the methodologies described. Where applicable, implementation of this will be overseen by a suitably licensed ecologist.

1.2 Site Background

The site is located within a rural location south of Staplehurst and North of Slough Green, West Sussex, grid reference TQ 28243 26344. The farm itself comprises hardstanding and arable fields and is surrounded on all aspects by arable farmland. The site boundary for the site is shown in Figure 1.



Figure 1. An aerial image showing the location of the site outlined in red and the application site shown in yellow. Images produced courtesy of Google maps (Map data ©2023 Google).

The application site concerns the creation of an unsealed track to the south of the site, extending through an area of modified grassland leading to the east of the site to Holmsted Hill.

1.3 Management Plan

The aims and objectives for the landscape and biodiversity elements of this development project are as follows:

- Enhancement of grassland habitat
- Provide targeted and appropriate habitat enhancement features for amphibians and invertebrates.

2. Proposed Enhancements

2.1 Overview

This enhancement strategy is designed to maximise the ecological value of the retained and created habitats within a given site. Enhancement of the habitats on site will provide foraging

and breeding habitats for a wide range of protected species including bats, hedgehogs, amphibians and reptiles as well as allow opportunities for botanically diverse habitats to establish. Emphasis is also placed on enhancing the grassland on site to create opportunities for pollinating invertebrates through the improvement of existing grassland habitats. The enhancements within this document are in accordance with the National Planning Policy Framework (NPPF)¹ which states in section 185:

“To protect and enhance biodiversity and geodiversity, plans should:

a) Identify, map and safeguard components of local wildlife-rich habitats and wider ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity; wildlife corridors and stepping stones that connect them; and areas identified by national and local partnerships for habitat management, enhancement, restoration or creation;

and

b) promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity.”

Figure 3 shows the proposed enhancements within the site; which comprises enhancement of grassland and the placement of hibernacula for reptiles and amphibians.

¹ HM Government (December 2023). National Planning Policy Framework. Department for Communities and Local Government. Available [online](#).



Figure 2: Map of proposed enhancements according to UKHAB classification. Produced using QGIS. Enhanced grassland is shown in green and the dead wood hibernacula shown with yellow squares.

2.2 Enhancement of Grassland

The modified grassland currently on site is close-mown, poor quality grassland, comprising grass species Cock's-foot (*Dactylis glomerata*) Yorkshire Fog (*Holcus lanatus*), Perennial Rye (*Lolium perenne*) and Common Daisy (*Bellis perennis*).

The parcel of grassland habitat to be enhanced totals an area of 0.086ha and is to be enhanced to good condition modified grassland within 5 years, with the aim of increasing species diversity to at least 9 species per m² and retaining a mosaic of sward lengths within the grassland habitat. This will be achieved through utilising rotational grazing and a cut-and-collect management scheme along with planting of Yellow Rattle (*Rhinanthus minor*) plugs (Figure 3). Yellow Rattle reduces the nutrient levels in grassland by acting as a hemi-parasite,

drawing nutrients from the roots of grasses. Nutrient removal reduces the dominance of rank grasses, allowing less competitive wildflowers to germinate.



Figure 3. Yellow Rattle (*Rhinanthus minor*) to be planted as part of enhancement of grassland

The establishment of a diverse plant community will be undertaken through the over-sowing of appropriate native seed mixes holding species such as Yarrow (*Achillea millefolium*), Crested Dog's Tail (*Cynosaurus cristatus*), Oxeye Daisy (*Leucanthemum vulgare*) and Field Scabious (*Knautia arvensis*). The sowing of seed mix will be combined with scarification and harrowing of the grassland parcel. Establishing higher quality grassland will allow the habitat to be utilised by invertebrates, herptiles, bats and small mammals as well as aid in retaining the soil structure of the site. No pesticides will be used on the grassland habitats, and the areas which have been set aside for enhancement will have restricted access and be fenced to avoid damage by vehicles.

2.3 Sensitive Lighting Scheme

There is a treeline to the east of the site which offers valuable foraging and commuting habitat for bats. Therefore artificial light sources will be kept to a minimum on all aspects of valuable grassland, treeline and scrub habitat within the site. There will be no flood lighting, and any

necessary outdoor lights will comply with the artificial lighting guidelines and regulations in Appendix 3.

2.4 Dead Wood Log Piles and Hibernacula

Deadwood invertebrates depend on decaying wood for at least one aspect of their lifecycle, and represent 20% of British fauna. They contribute to the decomposition of plant matter and promote nutrient cycling, increasing overall forest productivity and biodiversity. At least three hibernacula created using a combination of dead wood, topsoil and rubble as shown in diagram 'A' in Figure 4 measuring at least 50cm x 50cm will be placed in suitable habitat within the application site in the Bramble scrub and the treeline to the east of the site in the locations shown in Figure 3. The presence of hibernacula will create refuge and breeding opportunities for invertebrates such as Stag Beetle (*Lucanus cervus*), as well as amphibians and reptiles, including Common Toad (*Bufo bufo*).

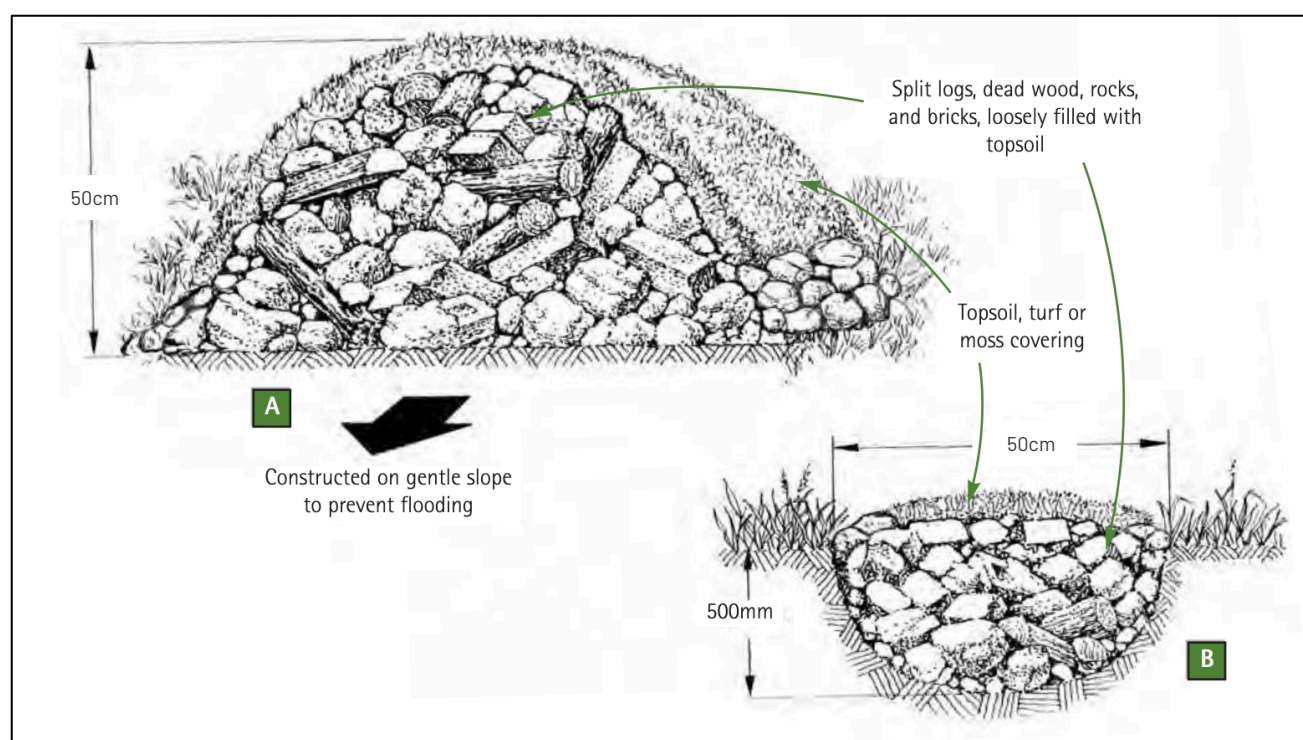


Figure 4. Example of hibernaculum refuge for amphibians and reptiles (Courtesy of the Great Crested Newt Conservation Handbook, published by Froglife).

3. Post Construction Management Plan

3.1 Enhancement of Grassland

The area set to be enhanced and created will be scarified and disturbed to expose bare earth prior to wildflower seeds being sown, with Yellow Rattle plugs being hand planted during the early spring to ensure successful germination. This area of grassland will be left to establish, with mowing using a 'cut and collect' method to a height of 5cm approximately six to eight weeks after seedlings appear, with this being repeated every eight weeks throughout the initial summer. Following this, half of the area of grassland will be mown to a height of 7.5cm in April and the other half in June in rotation, to create a variety of heights. This can be occasionally supplemented with rotational grazing, but the grass will not be overgrazed. The cuttings are to be collected as part of the mowing process to remove nutrients from the soil. The presence of competitive species and scrub such as Common Nettle (*Urtica dioica*) and Creeping Thistle (*Cirsium vulgare*) will be controlled through removal. No pesticides will be used on the areas of grassland present on the site and the site will be watered during dry periods.

Areas of grassland with structured plant growth are valuable for protecting soil against erosion and nutrient run-off. The enhancement of these habitats will aid in soaking up nutrients and pollutants such as fertilisers from the adjacent land.

A recommended species list for flowering plants is laid out in Appendix 1.

3.2 Dead Wood Log Piles and Hibernacula

The created hibernacula will be placed in areas which receive at least 50% shade daily to maximise potential for herptiles and invertebrates. Clean brick and stone rubble without cement residue will be used alongside logs to create the hibernacula by piling them within a shallow excavation. These hibernacula will then be covered in topsoil and kept damp to encourage vegetation cover on them, with the aim of blending them into the surrounding habitat. Further materials will be added to the piles if and when required, with materials from tree management and 'clean' rubble from the farm being utilised.

4. Work Schedule

Table 1 below provides a summary of the timings of works to be undertaken as enhancements across the site on an annual basis.

Table 1. Annual work schedule.

Action	Timing of Works
Creation of log piles and hibernacula	When dead wood becomes available post construction; any time of year
Scarification of grassland	Post construction when conditions are damp
Sowing of wildflower seeds	Autumn, to be repeated annually if seed fails
Mowing grassland	Bi-annually; once in April and once in July with cuttings collected
Removal of nutrient rich species such as Nettle and Dock	Weekly, as part of regular management.
Implementation of sensitive lighting scheme	Post construction, any time of year

5. Specifications of Works to be Undertaken

A site inspection must be undertaken by a suitably qualified ecologist following the implementation of prescriptions under this Biodiversity Enhancement Strategy to ensure compliance with this report.

All relevant works must be carried out by someone suitably qualified as follows:

- Installation of all wildlife boxes will be undertaken or overseen by a suitably qualified ecologist;
- initial and monitoring site inspections will be undertaken by a suitably qualified ecologist.

If any protected species are found during the proposed work, work should be stopped immediately, and an ecologist must be contacted immediately for advice.

APPENDIX 1: Landscape and Planting Design

Recommended Wildflower Species

Cornflower	<i>Centaurea cyanus</i>
Corncockle	<i>Agrostemma githago</i>
Dwarf Sunflower	<i>Helianthus annuus</i>
Goat's Beard	<i>Trogopogon pratensis</i>
Rough Hawkbit	<i>Leontodon hispidus</i>
Knapweed, Common	<i>Centaurea nigra</i>
Linseed	<i>Linum usitatissimum</i>
Marigold, Corn	<i>Chrysanthemum segetum</i>
White Millet	<i>Panicum miliaceum</i>
Oxeye Daisy	<i>Leucanthemum vulgare</i>
Phacelia	<i>Phacelia tanacetifolia</i>
Quinoa	<i>Chenopodium quinoa</i>
Field Scabious	<i>Knautia arvensis</i>
Selfheal	<i>Prunella vulgaris</i>
Common Sorrel	<i>Rumex acetosa</i>
Teasel	<i>Dipsacus fullonum</i>
Bird's-foot Trefoil	<i>Lotus croniculatus</i>
Tufted Vetch	<i>Vicia cracca</i>
Yarrow	<i>Achillea millefolium</i>
Wild Carrot	<i>Daucus carota</i>
Meadow Buttercup	<i>Ranunculus acris</i>
Red Campion	<i>Silene dioica</i>
White Campion	<i>Silene alba</i>

APPENDIX 2 – Legislation and Best Practice

The following text is intended for general guidance only and does not constitute comprehensive professional legal advice. It provides a summary of the current legal protection afforded to wildlife in general and certain species. It includes current national planning policy relevant to nature conservation.

- **The Conservation of Habitats and Species Regulations 2017**

These regulations, referred hereafter as “the Habitats Regulations”, represent the primary method by which Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora (the “Habitats Directive”) is transposed for England and Wales and their territorial seas. The Habitats Directive, in conjunction with the Birds Directive (Council Directive 2009/147/EEC) forms the basis for implementation of Europe’s nature conservation policy through both habitat and species level protection. The Habitats Directive requires the designation of strictly protected European sites known as Special Areas of Conservation (SACs). Together with the Special Protection Areas (SPAs) established by the Birds Directive, these collectively form the Natura 2000 Network of protected sites. The Habitats Directive also requires the strict protection of animals and plants of Community Interest listed under Annex IV. Habitat types requiring strict protection as SACs are listed under Annex I. The conservation of animals and plants listed under Annex II requires the designation of SACs. The Habitats Regulations require that public bodies must exercise their nature conservation responsibilities to ensure compliance with the Habitats Directive. These regulations also require the conservation of natural habitats and habitats of species through the selection, designation and notification of marine and terrestrial ‘European Sites’ to be afforded protection under the Habitats Directive. The habitats and species of European Importance are listed under Annexes I and II of the Habitats Directive. The regulations also contain provision for the appropriate management of these European Sites including the control of damaging operations, special nature conservation orders and restoration orders, for example. The Habitats Regulations afford strict protection to European Protected Species of animals under Schedule 2 and plants under Schedule 5. Offences (subject to certain exceptions) include the deliberate capture, killing, disturbance or trade in these animals. Similarly plants listed under Schedule 5 are protected (subject to exceptions) from picking, collection, cutting, destruction or trade.

- **The Wildlife and Countryside Act 1981 (as amended)**

The Wildlife and Countryside Act 1981 (as amended) (WaCA) is still a leading mechanism for the legislative protection of wildlife and national parks across the United Kingdom. The WaCA draws on elements of pre-existing legislation and supports the Habitats Regulations in implementing the Bern Convention (1979) and Directive 2009/147/EC on the conservation of wild birds. Schedules within the WaCA provide a list of protected species and habitats, in addition to prohibited actions. It also contains measures for controlling invasive non-native species and amendments to a number of laws. Most notably within the scope of this report are Schedule 9 of the WaCA which lists non-native species that are already established in the wild and continue to pose a conservation threat to native biodiversity and habitats and stipulates that further releases should be regulated. Schedule 9 also includes some native species (for example, Barn Owl (*Tyto alba*)) in order to provide a level of control to ensure that releases, in particular re-introduction programmes, are carried out in an appropriate manner and biodiversity is properly safeguarded; and Schedule 14, which prohibits the introduction into the wild of any animal of a kind which is not ordinarily resident in, and is not a regular visitor to, Great Britain in a wild state, or any species of animal or plant listed in Schedule 9 of the WaCA.

- **The Natural Environment and Rural Communities (NERC) Act 2006**

The Natural Environment and Rural Communities Act imposes a Biodiversity Duty (S.40) on all public bodies to conserve biodiversity at both species and habitat levels (S40);

“Every public authority must, in exercising its functions, have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity.”

Section 41 of the Act requires the publication of a list of

“living organisms and types of habitat which in the Secretary of State’s opinion are of principal importance for the purpose of conserving biodiversity.”

The list generated under Section 41 of the Act contains a number of types of habitats and species of animal and plant that have the potential to be affected by development projects of a range of sizes and impacts including lowland deciduous woodland, floodplains and calcareous grassland habitats.

The Act also establishes Natural England as the independent body to:

“ensure that the natural environment is conserved, enhanced and managed for the benefit of present and future generations, thereby contributing to sustainable development”.

943 species and 56 habitats of principal importance are included on the S41 list as guidance for public bodies on decisions that affect biodiversity.

- **The Hedgerow Regulations 1997**

On 1 June 1997, the Hedgerow Regulations came into force under section 97 of the Environment Act 1995 to address the dramatic decline in UK hedgerows. The regulations protect important hedgerows by limiting removal through a system of notification via local planning authorities. The regulations are aimed at countryside hedgerows in England and Wales;

Section 3.6: *"on or adjoining, common land, village greens, Site of Special Scientific Interest (which include National Nature Reserves, Special Protection Areas under the Birds Directive and Special Areas of Conservation under the Habitats Directive), Local Nature Reserves, or land used for agriculture, forestry or the breeding or keeping of horses, ponies or donkeys"*

Written permission is required from the local planning authority before the removal of any hedgerow over 20 metres and more than 30 years old. Hedgerows less than 20 metres long may also be considered if they form part of a continuous network of hedges.

The LPA will then either issue a Hedgerow Retention or Hedgerow Removal Notice within 42 days depending on whether they define the hedgerow as important or not based on the following criteria:

- "They have been in existence 30 years or more; and"
- "They satisfy at least one of the criteria set out in Part II of Schedule 1 of the Regulations."

Exemptions to the Regulations fall into three categories:

- "small scale works;"
- "works approved under other procedures which ensure careful assessment and consideration of the impact on the local environment; and"
- "works authorised under other legislation which justify the removal of a hedgerow without first establishing its importance."

It is an offence to remove a hedgerow subject to a retention notice, or to remove a hedgerow protected under the Hedgerow Regulations without first obtaining the required removal notice.

Updated regulations as part of the Hedgerow Regulations due in 2024 regulations will include a two metre 'buffer strip' from the centre of hedgerows with no cultivation or application of pesticides or fertilisers, and a hedge cutting ban between 1 March and 31 August to protect nesting birds. These updates are also to include over 90,000km of hedgerows being managed through 16,000 agreements in the government's Countryside Stewardship and Sustainable Farming Incentive schemes, and more than 13,000km of hedgerows created or restored using Countryside Stewardship grants.

- **The UK Post-2010 Biodiversity Framework**

The UK Post-2010 Biodiversity Framework was published on 17 July 2012. It was produced by JNCC and Defra, on behalf of the Four Countries' Biodiversity Group (4CBG), through which the environment departments of all four governments in the UK work together. It covers the period from 2011 to 2020, and was developed in response to two main drivers: the Convention on Biological Diversity's (CBD's) Strategic Plan for Biodiversity 2011-2020 and its five strategic goals and 20 'Aichi Targets', published in October 2010; and the EU Biodiversity Strategy (EUBS), released in May 2011. The framework shows how the work of the four UK countries joins up with work at a UK level to achieve the 'Aichi Targets' and the aims of the EU Biodiversity Strategy. It identifies the activities required to complement the country biodiversity strategies, and where work in the country strategies contributes to international obligations. In total, 23 areas of work were identified where all the countries agreed that they wanted to contribute to, and benefit from, a continued UK focus.

The development of the framework reflects a revised direction for nature conservation, towards an approach which aims to consider the management of the environment as a whole, and to acknowledge and take into account the value of nature in decision-making. The framework sets out the common purpose and shared priorities of the UK and the four countries, and, as such, is a hugely important document, which is to be owned, governed, and implemented by the four countries.

- **National Planning Policy Framework (NPPF)**

This framework acts as guidance for planning authorities (LPAs) in England to form Local Plan policies in favour of sustainable development as part of the government's reforms to increase the accessibility of the planning system and promote long term sustainable growth.

The framework states that "planning policies and decisions should contribute to and enhance the local environment" (paragraph 170).

Chapter 15 of the framework focusses on habitats and biodiversity. Specifically, paragraph 175 states:

"...when determining planning applications, local planning authorities should apply the following principles:

- if significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused"*
- development on land within or outside a Site of Special Scientific Interest, and which is likely to have an adverse effect on it (either individually or in combination with other developments) should not normally be permitted. The only exception is where the benefits of the development in the location proposed clearly outweigh both its likely impact on the features of the site that make it of special scientific interest, and any broader impacts on the national network of Sites of Scientific Interest (SSSI);*
- development proposals whose primary objective is to conserve or enhance biodiversity should be supported;*
- opportunities to incorporate biodiversity improvements in and around developments should be encouraged;*
- development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists"*

The NPPF also states section 185 in regard to planning applications:

"To protect and enhance biodiversity and geodiversity, plans should:

a) Identify, map and safeguard components of local wildlife-rich habitats and wider ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity; wildlife corridors and stepping stones that connect them; and

areas identified by national and local partnerships for habitat management, enhancement, restoration or creation; and

b) promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity.”

- **Circular 06/2005: Biodiversity and Geological Conservation**

The Circular 06/2005 complements the NPPF by advising on how the law relates to planning and nature conservation in England, with particular reference to designated sites and protected species;

“It is essential that the presence or otherwise of protected species, and the extent that they may be affected by the proposed development, is established before the planning permission is granted, otherwise all relevant material considerations may not have been addressed in making the decision” (Paragraph 99).

However;

“developers should not be required to undertake surveys for protected species unless there is a reasonable likelihood of the species being present and affected by the development.”

Part IV also reminds LPAs and developers that licences and mitigation measures may be required in addition to planning permissions if protected species are to be affected by the development

“The breach of protected species legislation can often give rise to a criminal offence” (Paragraph 101).

- **Bats**

All British bats are “European Protected Species” (EPS) and listed on Annex II and Annex IV of the EC Habitats Directive. The Directive is transposed into UK law through the Conservation of Habitats and Species Regulations 2017. The following actions affecting bats are prohibited under the legislation:

- deliberate capture, injury or killing of a bat;
- deliberate disturbance of a bat and in particular disturbance which is likely to impair their

ability:

- to survive, to breed or reproduce, or to rear or nurture their young, or
- in the case of animals of a hibernating or migratory species, to hibernate or migrate;
- or to affect significantly the local distribution or abundance of the species to which

they belong.

- damage or destruction of a breeding site or resting place;
- possessing, controlling transporting, selling or exchanging, or offering for sale or exchange any bat or any part of a bat or anything derived from one.

Bats are also afforded protection from intentional or reckless 'disturbance' by the Wildlife and Countryside Act 1981 (as amended). The deliberate or reckless obstruction of access to a structure or place used by bats for shelter and protection is also an offence under the Act.

- **Birds**

All wild birds in the UK are afforded protection under the Wildlife and Countryside Act 1981 (as amended). This protection includes killing, injuring or taking wild birds as well as taking, damaging or destroying bird nests in use or being built, and taking or destroying eggs. Birds listed under Schedule 1 of the Act are afforded additional protection from disturbance during nesting and offences relating to these birds are subject to special penalties. The nest sites of birds listed under Schedule ZA1 of the act are afforded strict, year-round protection even when the nests are not in active use.

- **Great Crested Newts**

Great Crested Newts (*Triturus cristatus*) are a "European Protected Species" (EPS) and listed as such on Annex II and Annex IV of the EC Habitats Directive. The Directive is transposed into UK law through the Conservation of Habitats and Species Regulations 2017. The following actions affecting great crested newts are prohibited under the legislation:

- deliberate capture, injury or killing of a great crested newt;
- deliberate disturbance of a great crested newt and in particular disturbance which is likely to impair their ability:

- to survive, to breed or reproduce, or to rear or nurture their young, or
- in the case of animals of a hibernating or migratory species, to hibernate or migrate;

- or to affect significantly the local distribution or abundance of the species to which they belong.
- damage or destruction of a breeding site or resting place;
- possessing, controlling transporting, selling or exchanging, or offering for sale or exchange any great crested newt, any part of a great crested newt or anything derived from one.

Great crested newts are also afforded protection from intentional or reckless 'disturbance' by the Wildlife and Countryside Act 1981 (as amended). The deliberate or reckless obstruction of access to a structure or place used by great crested newts for shelter and protection is also an offence under the Act. This applies to both aquatic and terrestrial habitat.

APPENDIX 3 – Reducing Impacts of Artificial Light

External lighting has been proven to have a negative impact on foraging and commuting bats, as well as impact other nocturnal species such as invertebrates, birds and mammals such as Badger and Hedgehog. The Bat Conservation Trust has guidelines² which should be referred to when designing lighting schemes for proposed developments. In areas where the introduction of lighting will have a significant impact on the surrounding environment such as rural locations it is recommended that an ecologist is consulted prior to a lighting scheme being designed. The key measures recommended by the guidelines are as follows:

- Avoid unnecessary exterior lighting where possible
- Maintain a balance between appropriate lighting levels and the impact that exterior lighting will have on wildlife
- Comply with existing legislative buffers and avoid lighting key habitats and features altogether.
- Avoid lighting key habitats and features altogether
- Comply with guidance on illuminance levels and buffers

It may be necessary to demonstrate that the proposed lighting will comply with any agreed light-limitation or screening measures set as a result of your ecologist's recommendations and evaluation. This is especially likely to be requested if planning permission is required. Baseline, pre-development lighting surveys may be useful where existing on or off-site lighting is suspected to be acting on key habitats and features and so may prevent the agreed or modelled illuminance limits being achieved. As a condition of planning, post-completion lighting surveys by a suitably qualified person should be undertaken and a report produced for the local planning authority to confirm compliance. Any form of non-compliance must be

² Bat Conservation Trust and Institute for Lighting Professionals (2023) Guidance note 8. Bats and Artificial Lighting. Available [online](#)

clearly reported, and remedial measures outlined. Ongoing monitoring may be necessary, especially for systems with automated lighting/dimming or physical screening solutions.

The Bat Conservation Trust recommends the following specifications for lighting on developments to prevent disturbance:

- Lighting spectra: peak wavelength >550nm
- Colour temperature: <2700K (warm)
- Reduction in light intensity
- Minimal UV emitted
- Upward light ratio of 0% and good optical control

APPENDIX 4 – Conditions of use

This report has been prepared by Libby Morris, with all due diligence and care within the terms of the Contract with the client. This report only becomes the property of the client once payment for it has been received in full. The author disclaims any responsibility to the client and others in respect of any matters outside the scope of the above.

This report is confidential to the client, and the author accepts no responsibility to third parties to whom this report, or any part thereof, is made known. Any such party relies on the report at their own risk.