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**Review and update:**

**Preliminary Ecological Assessment (PEA) and Impact Assessment**

at

**Quinton Hazel, Glan y Wern Road, Mochdre, LL28, 4SS**

for

**Mr. Steve Frost**

**Document Issue Date:** 13<sup>th</sup> December 2021 REV 2

**Approved by:** Mr. Stuart Kato M.Sc., MCIEEM

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## 1. INTRODUCTION

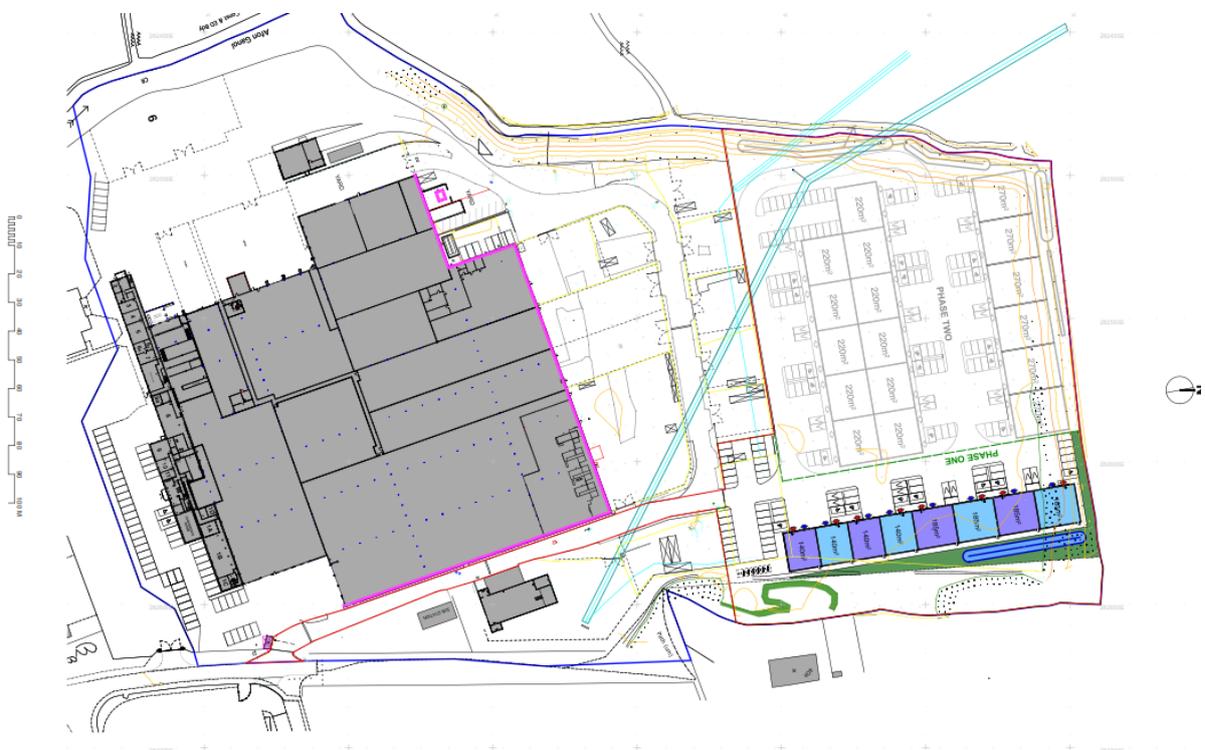
### 1.1 Description of Brief

1.1.1 Ecoscope Ltd was requested to update a former Preliminary Ecological Assessment (PEA) undertaken in May 2019 (*'Preliminary Ecological Assessment and Reptile survey: land at Glan y Wern Road, Mochdre'*. Ecoscope Ltd 30<sup>th</sup> May 2019).

1.1.2 The brief was to reassess the potential of the land to support protected species after standing abandoned and unmanaged for several years, and to update the report in respect of any alterations to the proposal. No significant differences between the proposal impacts and the findings were noted.

### 1.2 Purpose of study

1.2.1 Proposals to develop the land as commercial premises on the Quinton Hazel Enterprise Park (**Figure 1**).



**Figure 1** Proposed design

1.2.2 As part of the Senedd commitment to Biodiversity Net Gain<sup>1</sup> incorporated into new development, and following the guidance provided by the Chartered Institute of Ecology & Environmental Management (CIEEM)<sup>2</sup>, the report recommends compensation for potential losses and enhancements to achieve gains in the proposed development.

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<sup>1</sup> [Environment \(Wales\) Act 2016 Part 1 Section 6: The Biodiversity and Resilience of Ecosystems - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/consultations/environment-wales-act-2016-part-1-section-6-the-biodiversity-and-resilience-of-ecosystems)

<sup>2</sup> [CIEEM-Environmental-Net-Gain-Principles-Final-July2021.pdf](#)

## **2. METHOD**

### **2.1 Desk study**

2.1.1 The desk study involved collecting data from the following sources:

- Protected sites locations from Magic Map at <https://magic.defra.gov.uk/MagicMap.aspx>;
- Designations and Qualifying Features at <https://naturalresources.wales/environmental-topics/wildlife-and-biodiversity/find-protected-areas-of-land-and-sea>;
- Biodiversity data from the Local Environmental Record Centre (LERC) at <https://www.cofnod.org.uk>.

### **2.2 Field survey**

2.2.1 The walkover survey was updated in line with CIEEM protocol.

2.2.2 42 1m<sup>2</sup> reptile refugia mats, were placed along the north (10), east (5), south (7) and west (20) boundaries of the development land at Quinton Hazel on the 10/08/21 by trained personnel (Tab.1). Refugia were inspected weekly during the length of the survey to identify any potential reptiles utilising the site. Access directly along the western boundary was restricted due to a high density of thistles, therefore, refugia was placed further towards the centre of the field on that side. Reptiles and amphibians often inhabit open grassland habitats with denser vegetation in order to thermoregulate, therefore seeking out warm areas. Reptile refugia absorbs heat from the sun, providing warmth for basking reptiles and amphibians as well as protection from predatory species.



**Figure 2 Position of reptile refugia on the site.**

**Table 1 Personnel carrying out surveys**

PERSONNEL	EXPERIENCE
<b>Mr. Stuart Kato MSc.</b>	M.D. at Ecoscope. 18 years' experience as a professional ecologist. Licensed for bats, newts, and dormouse in Wales; bats and newts in England.
<b>Dr Richard Birch CEcol.</b>	Principal Ecologist Qualified horticulturalist and 1 <sup>st</sup> class degree in Botany. 20 years practising ecologist. Licences for bats & newts in England & Wales. Chartered since 2016.
<b>Miss Kira Lovatt BSc. (Hons.)</b>	Graduate Ecologist. 1 <sup>st</sup> Class degree in Zoology with Conservation, currently studying Conservation and Land Management at master's level.

### 3. RESULTS

#### 3.1 Site Description

- 3.1.1 The development area is approx. 1.25ha of acid grassland surrounded by dense scrub and a mix of small trees, dense bramble thickets are located along the eastern boundary of the site (fig.3a), following the fence line as well as the north and south boundary. A high abundance of thistles dominated the western boundary of the site, restricting access. Areas of the site exhibited high sward height (fig.3b), whilst other more frequently used paths exhibited low botanical diversity and exposure of sandy soils.
- 3.1. The site is an abandoned playing field, apparently formed on top of levelled spoil from previous land clearance, and consequently forming a plateau with earth banks sloping down on the south and west sides.
- 3.1.3 The vegetation is predominately neutral grassland appropriating to a National Vegetation Classification (NVC) of Mesotrophic Grassland MG1, developing to W22 scrub around the perimeter (tab.2c), where a number of non-native conifers are achieving semi-maturity. Exposed soil is a mixture of ruderal weeds appropriating to an 'Other Vegetation' category OV25 (see Table 4). There is some potential for reptiles and amphibians, particularly grass snake (*Natrix natrix*) alongside the dyke but this is outside the development area.

**Table 2 Site Images**



a) Dense vegetation along western boundary restricting access. Mixture of bramble, thistles, and grasses



b) Dense vegetation with high sward height consisting of predominantly thistles



c) Example of refugia placement and size



d) Example of an adult and juvenile common toad (*Bufo bufo*) found under refugia

**Table 3 Site images and refugia**



a.) Refugia imbedding into vegetation



b.) Fox dropping on refugia



c.) View looking South from North of site vegetation

3.1.4 The suburban habitat – including a nearby cemetery – provides potential habitat for foraging bats and butterflies, both of which may overspill.

3.1.5 Non-native trees, areas of scrub on the margins and tall non-ruderal vegetation (reedbed) provide nesting sites for birds included in Table 4, along with other more common bird species.

**Table 4 Vegetation definition**

NVC CODE	DEFINITION
<b>MG 1</b>	<i>Arrhenatherum elatius-Festuca rubra</i> (false oat grass-red fescue neutral grassland)
<b>W22</b>	<i>Prunus spinosa-Rubus fruticosus</i> (blackthorn-bramble scrub)
<b>OV25</b>	<i>Urtica dioica-Cirsium arvense</i> (nettle-creeping thistle community)

## 3.2 Desk study

3.2.1 Protected Sites and their Qualifying Features within 2km are listed in Table 5.

**Table 5 Protected sites and Qualifying Features within 5km**

NAME	CLASSIFICATION	SUMMARY OF QUALIFYING FEATURES	AREA	DISTANCE
Creuddyn	SSSI, SAC	<ul style="list-style-type: none"> <li>• Semi-natural woodland</li> <li>• Calcareous grassland</li> <li>• Rare vascular plants</li> <li>• Grassland invertebrates</li> </ul>	179.2 Ha	250 m
Bryn Euryn	SSSI (GCR <sup>3</sup> site)	<ul style="list-style-type: none"> <li>• Carboniferous Limestone outcrop</li> </ul>	11.5 Ha	0.5 Km
Bwlch Mine	SSSI (GCR site)	<ul style="list-style-type: none"> <li>• Closed mine with rare sulphide materials</li> </ul>	0.38 Ha	3.8 Km
Chwarellaa Glaswelltir Deganwy	SSSI (inc. GCR site)	<ul style="list-style-type: none"> <li>• Fossiliferous late Ordovician mudstone</li> <li>• Sandstone rocks</li> <li>• Small-leaved sweet briar</li> <li>• Maiden pink</li> <li>• Rare vascular plants</li> </ul>	7.28 Ha	4.1 Km
Aber Afon	SSSI	<ul style="list-style-type: none"> <li>• Marine and terrestrial invertebrate biology</li> </ul>	1295 Ha	4 Km

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<sup>3</sup> GCR – Geological Conservation Review

NAME	CLASSIFICATION	SUMMARY OF QUALIFYING FEATURES	AREA	DISTANCE
Creigiau Rhiwledyn/Little Ormes Head	SSSI (inc. GCR site)	<ul style="list-style-type: none"> <li>Geological, botanical, ornithological and marine biological features</li> </ul>	35.5 Ha	3 Km
Y Fenai aBae Conwy	SAC, SPA	<ul style="list-style-type: none"> <li>Waders, wildfowl &amp; seabirds</li> <li>Marine features</li> <li>Unique physiographic conditions</li> </ul>	26,483 Ha	3.3 Km
Cadnant	SSSI (GCR site)	<ul style="list-style-type: none"> <li>Complete sequence through the Cadnant Shales (Ordovician)</li> </ul>	1.7 Ha	5 km

3.2.2 Significant species are listed in Table 6 below.

**Table 6 Significant species (including status and distance from site)**

COMMON NAME	LATIN NAME	STATUS	NOTES
Common Toad	<i>Bufo bufo</i>	<b>Schedule 5 WCA</b>	210 m from site
Pipistrellus Bat Species	<i>Pipistrellus</i>	<b>Annex II species</b>	249 m from site
Hedgehog	<i>Erinaceus europaeus</i>		316 m from site
Dunnock	<i>Prunella modularis</i>	<b>BTO Amber List</b>	316 m from
Bullfinch	<i>Pyrrhula pyrrhula</i>	<b>BTO Amber List</b>	316 m from site
Common Lizard	<i>Zootoca vivipara</i>	<b>Schedule 5 WCA</b>	316 m from site
Small Heath	<i>Coenonympha pamphilus</i>		361 m from site
Dingy Skipper	<i>Erynnis tages</i>		361 m from site
Silver-studded Blue	<i>Plebejus argus</i>	<b>Schedule 5 WCA</b>	361 m from site
Brown Long-eared Bat	<i>Plecotus auritus</i>	<b>Annex II species</b>	400 m from site
Common Juniper	<i>Juniperus communis subsp. communis</i>		424 m from site
Herring Gull	<i>Larus argentatus</i>	<b>BTO Red List</b>	424 m from site
Bluebell	<i>Hyacinthoides non-scripta</i>	<b>Schedule 8 WCA</b>	447 m from site
Common Pipistrelle	<i>Pipistrellus pipistrellus</i>	<b>Annex II species</b>	526 m from site
Badger	<i>Meles meles</i>	<b>Protection of Badgers Act</b>	539 m from site
Cough	<i>pyrrhocorax pyrrhocorax</i>		539 m from site

### 3.3 Field survey

3.3.1 A Phase 1 map is included in Figure 3 Phase 1 Map, APPENDIX

3.3.2 Reptile survey results are shown in Table 7 below.

**Table 7 Reptile Survey Results**

DATE	VISIT No.	CONDITIONS	RESULT
10/08/2021	1	Drizzle but warm conditions	42 refugia placed
18/08/2021	2	Dry and warm 60% cloud cover, rained during the night	2 adult and 12 juvenile Common toads ( <i>Bufo bufo</i> )
27/08/2021	3	Warm and dry 35% cloud cover	8 juvenile Common toads ( <i>Bufo bufo</i> )
2/09/2021	4	Warm and dry 20%	1 adult and 19 juvenile common toads ( <i>Bufo bufo</i> )
6/09/2021	5	Warm and dry 0% cloud cover	5 juvenile common toads ( <i>Bufo bufo</i> )
8/09/2021	6	Warm and dry 15% cloud cover	None
16/09/2021	7	Warm sunny day, 0% cloud	6 common toads ( <i>Bufo bufo</i> )
22/09/2021	8	Warm but overcast	28 common toads ( <i>Bufo bufo</i> )

## 4. CONCLUSION

### 4.1 Summary of results

- 4.1.1 There are eight protected sites within 5 km of the proposals, none of which will be directly affected. However, some of the qualifying features of the sites may also be present, particularly butterflies
- 4.1.2 The site supports a large population of rabbit and is also likely to be frequented by badger with indication of presence through evidence of digging towards the centre of the site. No other evidence of badger was present, and no sett was found on site or nearby. Foxes are also present with evidence of scatt on one of the refugia.
- 4.1.3 There is a resident population of the more common birds, including Dunnock and Reed Bunting – both **amber** listed species.
- 4.1.4 Both juvenile and adult common toad (*Bufo bufo*) occurred regularly beneath refugia on bank above the drainage ditch.
- 4.1.5 Biodiversity interest is restricted to habitats on the north, west and south boundaries, which contain scrub, specimen trees and reedbed bordering a drainage dyke respectively. Common toad is listed in Section 9(5) of the Wildlife and Countryside Act 1981 (protection against sale only). The habitat is very suitable for grass snake (*Natrix natrix*) although none were recorded.

## 4.2 Risk assessment

4.2.1 The anticipated risks of the development are detailed below:

**Table 8 Risk assessment (without mitigation)**

IMPACT	FEATURE AFFECTED	RISK	SEVERITY	RISK × SEVERITY
Loss of habitat (Permanent)	Nesting birds (all species)	5	5	25
Disturbance (short and long term)		5	3	15
Site clearance	Amphibians (Common Toad)	5	3	15
Loss of habitat (Permanent)		2	2	4
Disturbance (short- and long term)		2	2	4
Loss of habitat (Permanent)	Badger	5	2	15
Disturbance (short- and long term)		5	2	15

### Key

RISK		SEVERITY		RISK × SEVERITY	
1	Negligible	1	Negligible	1-9	Cumulative effect of likelihood × severity = minor negative (potentially positive) impact
2	Slight risk	2	Low level of impact		
3	Moderate risk	3	Moderate impact	10-16	Cumulative effect of likelihood × severity = moderate negative impact
4	Event likely to occur	4	Major impact		
5	High risk of event occurring	5	Severe impact	17 - 25	Cumulative effect of likelihood × severity = major negative impact

## 4.3 Conclusion

4.3.1 Without Mitigation the impact is regarded as **Moderate** at a **Local** level, as defined in the Hierarchy of Impact in Table 9. **All impacts can be easily mitigated against (see section 5).**

**Table 9. Hierarchy of Impact**

HIERARCHY OF IMPACT	DEFINITION
<b>International</b>	Having an impact on the population size or habitat area on a Worldwide scale
<b>National</b>	Having an impact on a habitat or species distributed throughout the British Isles
<b>Regional</b>	Having an impact on a habitat or species distribution in any of the individual countries making up the British Isles
<b>Local</b>	Having an impact on a habitat or species that may be significant at a local level (Borough or Parish)

## **5. RECOMMENDATIONS**

### **5.1 Mitigation Strategy**

5.1.1. Risk is reduced by implementation of a hierarchy of strategies:

- Avoidance
- Protection
- Reduction
- Enhancement
- Mitigation

5.1.2 Only those relevant to the specified project will be considered.

### **5.2 Avoidance**

5.2.1 Site clearance and vegetation strip must be conducted outside the season for nesting birds, which is officially from February to August inclusive (generally considered as 1<sup>st</sup> March-31<sup>st</sup> August). If this is not possible the area should be surveyed immediately before clearance by an appropriately experienced ornithologist. If birds are found to be nesting the clearance can only take place once the last chick from the last brood has fledged.

### **5.3 Protection**

5.3.1 The majority of the biodiversity interest is to be found in the site boundaries, boundary features will be retained and protected as part of the proposal. This will result in:

- Protection of nesting birds.
- Harm and disturbance to badgers will be avoided and reduced;
- Amphibian habitat to be safeguarded permitting a corridor around the site;
- Rabbit warrens are restricted to the boundary and will be protected (although rabbits are not protected, there is an issue with animal welfare).

5.3.1 The retained boundaries should be demarked during the construction process with high visibility site boundary fencing.

## 5.4 Mitigation & enhancement

5.4.1 The following mitigation is proposed:

- The works area must be delineated by fencing that restricts access by Plant into the site boundary
- Works must not take place in the site boundary, which will be retained as a 'Wildlife corridor' around the perimeter of the site.

5.4.2 We recommend that a mixed hedge of approximately 30m must be planted on top of the bank at the western end of the site, in front of the existing trees This hedge must be shown on the proposal drawings and should consist of the species listed in Table 9.

**Table 10. Hedge Species**

Hawthorn	<i>Crataegus monogyna</i>	30%
Hazel	<i>Corylus avellana</i>	20%
Blackthorn	<i>Prunus spinosa</i>	20%
Holly	<i>Ilex aquifolium</i>	15%
Goat Willow	<i>Salix caprea</i>	15%

## 6. REVISED RISK ASSESSMENT

6.1.1 Compliance with the avoidance and mitigation strategies as described permits a post-construction assessment of the impacts after the strategies have been implemented (see Table 11):

**Table 11 Risk assessment (after mitigation)**

IMPACT	FEATURE AFFECTED	MITIGATION STRATEGY	RISK	SEVERITY	RISK × SEVERITY
Site clearance	Breeding birds (all species)	<ul style="list-style-type: none"> <li>• Scrub clearance outside the nesting season;</li> <li>• Boundary habitat retained;</li> <li>• Hedge planted on western boundary.</li> </ul>	1	3	3
Loss of habitat					
Disturbance					
Site clearance	Amphibians (Toad)	<ul style="list-style-type: none"> <li>• Boundary demarcated at start of works; Boundary habitat retained.</li> </ul>	1	1	1
Loss of habitat					
Disturbance					
Site clearance	Badger	<ul style="list-style-type: none"> <li>• Demarcation fencing at start of works; Habitat boundary retained.</li> </ul>	1	3	3
Loss of habitat	Badger	<ul style="list-style-type: none"> <li>• Demarcation fencing at start of works; Habitat boundary retained.</li> </ul>	1	3	3
Disturbance					

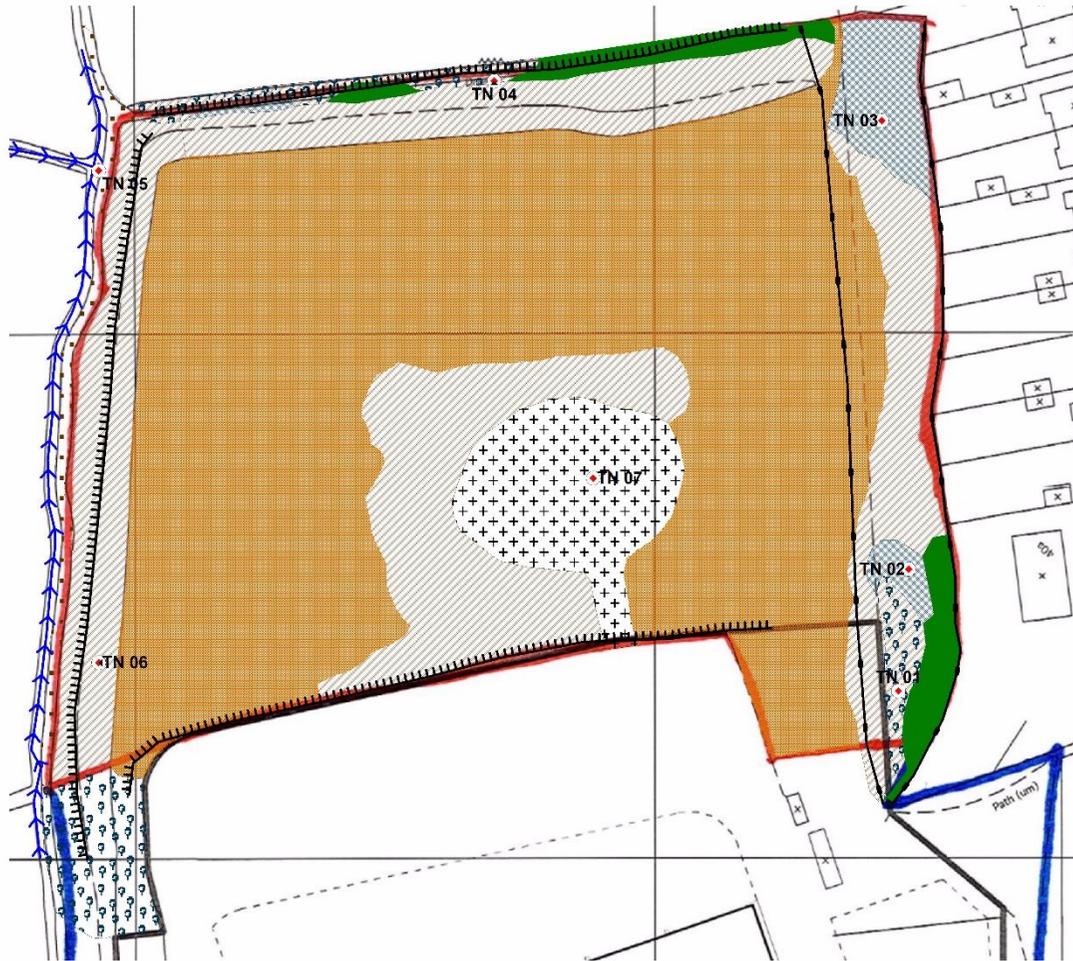
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2	Slight risk	2	Low level of impact		
3	Moderate risk	3	Moderate impact	10-16	Cumulative effect of likelihood × severity = moderate negative impact
4	Event likely to occur	4	Major impact		
5	High risk of event occurring	5	Severe impact	17 - 25	Cumulative effect of likelihood × severity = major negative impact

6.1.2 The risk of impact to key species as a result of the mitigation strategy is reduced to **Negligible** at a **Local** level. The proposal will have an overall positive impact on biodiversity gain.

**APPENDIX I: PHASE ONE MAPPING**

**Figure 3 Phase 1 Map**



**HABITAT**

-  Ephemeral
-  Neutral grassland
-  Tall non-ruderal (reedbed)
-  Tall ruderal (Neutral grassland)

**TREES & SHRUBS**

-  Conifers
-  Dense scrub
-  Scattered scrub

**LINEAR FEATURES**

-  Earth bank
-  Fence
-  Running water eutrophic

**TARGET\_NOTE**

-  TN 01

## **APPENDIX II: LEGISLATION**

### **Bats**

In Britain, all bat species and their roosts are legally protected in both domestic (the Wildlife & Countryside Act England & Wales 1981 – as amended) and international (The Habitats Directive 1992 / Conservation of Habitats and Species Regulations 2017 as amended) legislation, whereby it is an offence to:

- Deliberately take , injure or kill a wild bat
- Intentionally or recklessly disturb a bat in its roost or deliberately disturb a group of bats.
- Damage or destroy a place used by bats for breeding or resting (roosts) (even if bats are not occupying the roost at the time)
- Possess or advertise/sell/exchange a bat of a species found in the wild in the EU (dead or alive) or any part of a bat.
- Intentionally or recklessly obstruct access to a bat roost.

### **Birds**

All birds, their nests and eggs are protected by law and it is thus an offence (with certain exceptions) to:

- Intentionally kill, injure or take any wild bird.
- Intentionally take, damage or destroy the nest of any wild bird while it is in use or being built.
- Intentionally take or destroy the egg of any wild bird.
- Have in one's possession or control any wild bird, dead or alive, or any part of a wild bird, which has been taken in contravention of the Act.
- Have in one's possession or control any egg or part of an egg which has been taken in contravention of the Act.
- Use traps or similar items to kill, injure or take wild birds.
- Have in one's possession or control any bird of a species occurring on Schedule 4 of the Act unless registered, and in most cases ringed, in accordance with the Secretary of State's regulations in the Act's schedules.

- Intentionally or recklessly disturb any wild bird listed on Schedule 1 while it is nest building, or at a nest containing eggs or young, or disturb the dependent young of such a bird.

### **Badgers**

Badgers and their setts (burrows) are protected and so are. Under the protection of Badgers Act 1992 in England and Wales, where it is an offence to:

- Wilfully kill, injure or take a badger (or attempt to do so).
- Cruelly ill-treat a badger.
- Dig for a badger.
- Intentionally or recklessly damage or destroy a badger sett, or obstruct access to it.
- Cause a dog to enter a badger sett.
- Disturb a badger when it is occupying a sett.