# ECOLOGICAL IMPACT ASSESSMENT THE GREEN MAN, NORTON DISNEY, LINCOLNSHIRE







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## **DOCUMENT & QUALITY CONTROL**

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# A. SUMMARY

E3 Ecology Ltd was commissioned to undertake an ecological impact assessment (EcIA) of a parcel of land at The Green Man, Norton Disney, Lincolnshire, where it is proposed to construct three glamping pods on the site. A desk study was completed, including consultation with DEFRA's MAGIC website and the Lincolnshire Environmental Records Centre (LERC), and an ecological walkover survey was undertaken on 21<sup>st</sup> September 2021 in order to inform this assessment.

The results of the desk study indicate that there are no statutorily protected sites within 2km of the proposed development site. The site does not lie within a SSSI Impact Risk Zone (IRZ). Five non-statutorily protected sites were highlighted within 2km and were all over 1km from the site. No granted European Protected Species mitigation licences were highlighted within 2km during the desk study and no priority habitats were shown on or adjacent to site.

The proposed development site covers approximately 0.3ha and is dominated by The Green Man pub to the north with gravel parking and a grass seating area to the south. The development site is considered to be of low/local value for the habitats it supports. The woodland to the east of the site, a small corner of which is included in the site boundary, is of local habitat value.

No further surveys of the site are required. The site is considered of up to local value for birds and of low value for bats, badger and hedgehog, with other protected and priority species likely to be absent.

Ecological Receptor	Impact	Mitigation
Habitats		
Trees	Damage to retained trees, including those immediately adjacent to site.	Works will be undertaken in accordance with BS5837-2012 'Trees in relation to construction' and retained trees adjacent to the western boundary, where the pods will be constructed, will be protected, including protection of roots.
Woodland	Damage/disturbance.	Retained woodland will be protected from disturbance during construction by heras fencing.
Grassland	Loss and degradation during construction and operational phase.	Wildflower grasslands and wildflower bulb planting will be incorporated into the landscape proposals.
Species		
Bats	Increased lighting affecting foraging/commuting areas potentially used by bats (and other nocturnal wildlife)	Light levels around foraging/commuting areas, particularly the site boundaries, will be low level, below 2m in height, and low lux (below 1 lux 5m from the light source). Warm-light LEDs with very low UV will be used, with cowls designed to accurately target which
		areas are lit.
Birds	Harm/disturbance to nesting birds if any dense vegetation clearance/tree surgery is carried out	A pre-commencement check for nesting birds will be undertaken by a suitably experienced ornithologist if any vegetation clearance is undertaken between March and August inclusive.

The results of the site survey combined with the desk study have highlighted the following mitigation or compensation requirements.



	during the bird breeding season	
Wildlife (general)	Entrapment of wildlife during construction if trenches are left open overnight	Any excavations left open overnight will have a means of escape for wildlife that may become trapped in the form of a ramp at least 300mm in width and angled no greater than 45°.

The development presents an opportunity for ecological benefit within the site and the following enhancements are recommended:

- Landscape planting should designed to enhance structural diversity and will include plants bearing flowers, nectar and fruits which are attractive to invertebrates, thereby helping to maintain food resources for wildlife in general.
- Wildflower grassland to be incorporated into the landscaping proposals.
- Installation of bird nest boxes and bat boxes in the trees on site, and adjacent to site if within the same ownership.
- Provision of integrated bird nesting features in the new pods on site.
- Any planting for screening will be of native, species-rich mixtures of scrub and trees.
- Creation of hedgehog hibernacula or habitat piles in quiet undisturbed areas of the site.

The local planning authority is likely to require the means of delivery of the mitigation to be identified. It is recommended that mitigation, compensation and enhancement proposals are incorporated into the planning documents.

Provided that the above recommendations are implemented, it is anticipated that the proposals may proceed with no significant adverse effect on protected or notable habitats and species. Ecological opportunities including landscaping focussed on biodiversity and bat and bird nest box provision, contributing to local and national conservation targets.

If you are assessing this report for a local planning authority and have any difficulties interpreting plans and figures from a scanned version of the report, E3 Ecology Ltd would be happy to email a PDF copy to you. Please contact us on 01434 230982.



# **B.INTRODUCTION**

E3 Ecology Ltd was commissioned by Crown & Canopy Ltd in August 2021 to undertake an EcIA of a proposed development site at The Green Man, Norton Disney, Lincolnshire.

This assessment has been prepared taking account of the Chartered Institute of Ecology and Environmental Management's (CIEEM) "Guidelines for Ecological Impact Assessment in the UK and Ireland" (2019).

## B.1 AUTHOR, SURVEYORS & QUALIFICATIONS

The author's professional qualifications and survey licences are detailed in the table below, as well as those of additional lead surveyors who completed survey work at the proposed development site:

TABLE 1: LEAD SURVEYORS					
Name	Position	Professional Qualifications			
Georgia Vessey	Graduate Ecologist	BSc			

Further details of experience and qualifications are available at www.e3ecology.co.uk.

All surveyors have the knowledge, skills and experience identified within the relevant CIEEM Competencies for Species Survey guidance, or were under the supervision of a surveyor with the required competencies.

## B.2 OBJECTIVES

The objectives of the assessment are to:

- Establish baseline ecological conditions and determine the importance of ecological features present or potentially present within the survey area;
- Identify and describe potentially significant ecological constraints and effects associated with the proposed development;
- Make recommendations for design options to avoid significant effects on important ecological resources at an early stage of development planning where possible;
- Identify the potential requirement for further surveys on protected species and habitats which may be present on site;
- Set out the mitigation, compensation and enhancement measures required to ensure compliance with nature conservation legislation and to address any potentially significant ecological effects;
- Identify how these measures could be secured; and
- Identify any requirements for post-construction monitoring of the site.

## B.3 PROPOSED DEVELOPMENT SITE

The site is located in Norton Disney, Lincolnshire, at an approximate central grid reference of SK 8876 5907.

The figures below illustrate firstly the survey boundary and secondly the broad habitats present on site and within an approximate 500m buffer zone.



FIGURE 1: SITE BOUNDARY (Reproduced under licence from Google Earth Pro.)



FIGURE 2: SITE AND 500M SETTING (Reproduced under licence from Google Earth Pro.)



### B.4 DEVELOPMENT PROPOSALS

The proposed project includes the construction of three glamping pods on the site. Development proposals are shown in the figure below, with the pods illustrated in green in the south of the site. If there is an existing connection to the mains drainage, septic tank or treatment plant (with enough capacity) then that will be used to deal with all waste and water. If these are unavailable then a small scale domestic sewage treatment plant will be installed.



FIGURE 3: DEVELOPMENT PROPOSALS



# C. METHODOLOGY

## C.1 SCOPE OF STUDY

The scope of the study, in terms of the survey area and the desk study area, is based on professional judgement. The likely zone of influence of the proposal has been considered, including both potential direct effects, such as habitat loss, and potential indirect effects, such as disturbance. Consideration has been given to potential effects both during the construction and operational phases of the development.

For this site the survey area comprised the green line boundary as defined within the figures in section B.

In some circumstances field signs and habitat suitability may indicate the potential presence of nearby protected species and/or habitats immediately adjacent to the site which may fall within the zone of influence. In this scenario, if access was available the survey boundary was extended to include these areas. If access was not possible at the time of initial survey, the ecological impact assessment and required mitigation measures have been prepared taking this limitation into account.

The desk study included an assessment of land-use in the surrounding area and a data search covering a 2km buffer zone (see below for further detail).

The following types of ecological receptors have been considered:

- Statutorily designated sites for nature conservation;
- Non-statutorily designated sites for nature conservation;
- Species protected by law;
- Species and/or habitats listed under the NERC Act (2009) as being of principal importance for conservation of biodiversity; and
- Species and/or habitats listed in relevant local biodiversity action plans.

Further details on planning and legislative context are provided in the appendices of this report.

## C.2 DESK STUDY

Initially, the site was assessed from aerial photographs and 1:25,000 Ordnance Survey maps.

Following this, a data search was submitted to the Local Records Centre in October 2021, requesting data relating to protected or otherwise notable species and non-statutory sites for nature conservation within 2km of the survey area.

In addition, a search was made of the MAGIC website<sup>1</sup> for all statutorily protected sites for nature conservation within 2km of the survey area, as well as notable habitats or species records.

## C.3 FIELD SURVEY

An ecological walkover survey of the site was completed, comprising a phase 1 habitat survey and a preliminary appraisal for protected and otherwise notable species.

<sup>&</sup>lt;sup>1</sup> MAGIC Website: www.magic.gov.uk



## C.3.1 <u>METHODOLOGY</u>

## C.3.1.1 PHASE 1 HABITAT SURVEY

The field survey of the proposed site was conducted using the methodology of the Joint Nature Conservation Committee's Phase 1 Habitat Survey, as outlined in their habitat-mapping manual<sup>2</sup>. Each parcel of land was assessed by a trained surveyor and classified as one of ninety habitat types. These were then mapped and the habitat information supplemented by dominant and indicator species codes and target notes where appropriate. Where areas within the study area do not fall into the Phase 1 Habitat Survey classification, alternative methods of classification have been used.

## C.3.1.2 PRELIMINARY PROTECTED/NOTABLE SPECIES APPRAISAL

A preliminary appraisal of the site was completed to search for field signs or evidence of protected or notable<sup>3</sup> species and to assess the suitability of habitats to support such species.

When conducting the survey, particular focus was concentrated on, but not restricted to, the following taxa:

- Amphibians, including great crested newt (GCN)
- Badger
- Bats
- Birds
- Brown hare
- Fish
- Hedgehog

- Notable butterfly species
- Non-native invasive species
- Otter
- Red squirrel
- Reptiles
- Water vole
- White-clawed crayfish

Assessment of habitat suitability to support such species was based on professional judgement and experience, species-specific habitat preferences, knowledge of local and broad geographical species distribution and connectivity to other areas of suitable habitat.

Where it is considered likely that there is a significant risk of protected or otherwise notable species being affected, or where habitats are of particularly high value, additional specialist survey work has been recommended. Further survey work may also be recommended where development proposals have the potential to affect statutorily designated sites in the vicinity.

## BATS

Where present, the bat roosting suitability of any buildings/structures and trees on site, or within the zone of influence, were appraised in accordance with the guidelines provided within the Bat Conservation Trust Bat Survey: Good Practice Guidelines<sup>4</sup> and these are detailed within the table below.

TABLE 2: ASSESSMENT OF BAT ROOSTING SUITABILITY OF BUILDINGS/STRUCTURES & TREES			
(TO BE APPLIED USING PROFESSIONAL JUDGEMENT, TAKEN FROM TABLE 4.1 OF BCT'S BAT SURVEY GUIDELINES)			
Suitability	Roosting Habitats		
Negligible	Negligible habitat features on site likely to be used by roosting bats.		

<sup>&</sup>lt;sup>2</sup> Handbook for Phase 1 habitat survey, A Technique For Environmental Audit, JNCC, 2010

<sup>&</sup>lt;sup>3</sup> To include national priority species as listed in Section 41 of the NERC Act (2006) and local or regional priority species as listed within the relevant Biodiversity Action Plan

<sup>&</sup>lt;sup>4</sup> Collins, J. (ed) (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines (3<sup>rd</sup> Edition). Bat Conservation Trust



Note that any comments within this report on the state or condition of buildings/structures relate solely to their potential use by bats and must not be taken as a professional assessment of the structural integrity or safety of the structures.

## C.3.2 SURVEY EQUIPMENT

The following equipment was used during the phase 1 habitat survey:

- Binoculars
- Camera

## C.3.3 ENVIRONMENTAL CONDITIONS

The table below details the environmental conditions during the survey.

TABLE 3: SURVEY CONDITIONS					
Date	Temperature ( <sup>0</sup> C)	Cloud Cover (%)	Precipitation	Wind Conditions (Beaufort scale)	
21/09/21	17	0	0	3	

# C.4 SURVEY CONSTRAINTS

Certain plant species may not be identifiable throughout the year. However, it is considered that sufficient botanical identification was possible to facilitate a robust assessment of habitats for the purposes of this report.

Trees were only assessed from ground level and from within the site. Furthermore, tree assessments may sometimes need to be undertaken in summer, while in full leaf, which may obscure potential roosting features during the assessment of bat roosting potential. However, the trees were assessed from various angles on site using good quality binoculars and professional judgement was used based on the tree characteristics to supplement the assessment. Where trees could not be confidently assessed, further survey has been recommended.

# C.5 ASSESSMENT METHODOLOGY

The relative value of the ecological receptors (habitats, species and designated sites) was assessed using a geographical frame of reference. For designated sites this is generally a straightforward process with the assigned designation generally being indicative of a particular value, e.g. Sites of Special Scientific Interest are designated under national legislation and are therefore generally considered to be receptors of national value. The assignment of value to non-designated receptors is less straightforward and as recognised by the Guidelines for



Ecological Impact Assessment produced by CIEEM<sup>5</sup>, is a complex and subjective process and requires the application of professional judgement.

When assessing the value of species and habitats, relevant documents and legislation are considered including the lists of species and habitats of principal importance annexed to the NERC Act (2006) and those provided within relevant local Biodiversity Action Plans. Data provided through consultation is also considered. These data sources can provide context at a local, regional and national scale.

The table below provides examples of receptors of value at different geographical scales.

TABLE 4: ECOLOGI	CAL RECEPTOR VALUATION			
Level of Value	Examples			
	An internationally designated site or candidate site.			
	A site meeting criteria for international designation.			
	A substantial* area of a habitat listed on Annex I of the EC Habitats Directive or smaller areas			
International	of such habitat, which are considered likely to be essential to maintain the functionality of a			
	larger whole.			
	The site is of functional importance** to a species population with internationally important			
	numbers (i.e. >1% of the biogeographic population)			
	A nationally designated site.			
	A substantial <sup>*</sup> area of a habitat listed as a Habitat of Principal Importance within Section 41 of			
National	the NERC Act (2006) or smaller areas of such habitat, which are considered likely to be			
	The site is of functional importance** to a species population with nationally important numbers			
	(i.e. >1% of the national population)			
	An area of habitat that falls slightly below the criteria necessary for designation as a SSSI but			
Pagional	is considered of greater than county value.			
Regional	The site is of functional importance** to a species population with regionally important numbers			
	(i.e. >1% of the regional population)			
	A Local Wildlife Site (LWS) or equivalent, designated at a County level			
	A substantial* area of a habitat listed within the relevant County Biodiversity Action plan or			
County	smaller areas of such habitat, which are considered likely to be essential to maintain the			
	tunctionality of a larger whole.			
	I he site is of functional importance <sup>44</sup> to a species population of county value (i.e. >1% of the county population)			
	A Local Wildlife Site (LWS) or equivalent, designated at a District level			
	A substantial* area of a habitat listed within the relevant District Biodiversity Action plan or			
District	smaller areas of such habitat, which are considered likely to be essential to maintain the			
District	functionality of a larger whole.			
	The site is of functional importance** to a species population of district value (i.e. >1% of the			
	district population)			
<b>_</b>	Area of nabitat or species population considered to appreciably enrich the nabitat resource			
Parish				
Local	Habitats and species that contribute to local biodiversity but are not exceptional in the context			
Low	Habitats that are unexceptional and common to the local area			
*Substantial defin	ned as 'of considerable size or value within that area based on professional judgement. rather			
than a small, inconsequential area'				
** Functional importance defined as 'a feature which, based on professional judgement, is of importance to the				
day to day funct	ioning of the population, the loss of which would have a detectable adverse effect on that			
population',				

<sup>5</sup> Chartered Institute for Ecology and Environmental Management (2019) Guidelines for Ecological Impact Assessment in the UK and Ireland - Terrestrial, Freshwater and Coastal



The site lies within Norton Disney Parish which covers approximately 948ha and is mainly the small village of Norton Disney, arable land, angling lakes and woodland.





## D.1 DESK STUDY

#### D.1.1 PRE-EXISTING INFORMATION

#### D.1.1.1 ORDNANCE SURVEY MAPPING AND AERIAL PHOTOGRAPHY

The figures in Section B show that the general land use in the surrounding area is predominantly rural, with the small village of Norton Disney immediately surrounding the site and agricultural land beyond. There are angling lakes 500m north of the site.

The most recent aerial photograph of the site (2020) indicates that habitats on site are dominated by The Green Man pub, set on hardstanding with gravel parking and a grass seating area to the south.

Historic imagery suggests that there was a line of ornamental shrubs between the car park and grass seating area, which appear to have been removed sometime between 2005 and 2007. A small area just south of the pub was fenced off between 2018 and 2020. The rest of the site has remained largely unchanged.

### D.1.1.2 MAGIC WEBSITE<sup>6</sup>

#### PROTECTED SITES

There are no statutorily designated sites within 2km of the site. The site does not lie within a SSSI Impact Risk Zone (IRZ).

#### HABITATS

No Priority Habitats are mapped on or immediately adjacent to the site.

#### **S**PECIES

No granted GCN European Protected Species (EPS) mitigation licences, GCN survey licence returns or eDNA survey records (2017-2019) are shown within 2km of the site.

There are no records of granted EPS mitigation licences for works affecting bats within 2km.

## D.1.2 CONSULTATION

#### LOCAL RECORD CENTRE

The table below summarises the records provided by the local records centre. The full data search results can be provided on request.

TABLE 5: CONSULTATION RECORDS					
Species	No. of Records	Closest distance (m – if sufficient record resolution provided)	Most recent date		
Amphibian					
Common Frog	12		19/08/2013		
Common Toad	17		09/04/2015		
Great Crested Newt	4	1239	07/07/2005		
Insect - butterfly					
Small Heath	10		02/09/2008		

<sup>&</sup>lt;sup>6</sup> Multi Agency Geographic Information for the Countryside (MAGIC) www.magic.gov.uk

Wall	5		04/08/1999
White Admiral	1	967	16/07/2010
White-letter Hairstreak	1	1764	22/07/2012
Reptile			
Adder	4		1977
Common Lizard	7	967	18/08/2017
Grass Snake	10	245	15/07/2017
Slow-worm	2	763	1977
Terrestrial mammal			
Brown Hare	19		01/10/2011
Eastern Grey Squirrel	13	142	19/04/1999
Eurasian Badger	21		22/04/2018
European Otter	13	902	2007
European Water Vole	8		14/03/1994
Harvest Mouse	4		19/08/2013
West European Hedgehog	21	240	07/05/2019
Terrestrial mammal (Bat)			
Bats	19	52	01/07/2016
Brandt's Bat	9	967	03/06/2016
Brown Long-eared Bat	18	763	26/10/2017
Common Pipistrelle	12	967	10/08/2016
Daubenton's Bat	22	967	10/08/2016
Lesser Noctule	4	967	09/08/2015
Nathusius's Pipistrelle	10	967	09/08/2015
Natterer's Bat	5	967	29/07/2016
Noctule Bat	6	967	29/07/2016
Pipistrelle	3	1237	11/07/2005
Pipistrelle Bat species	10		22/07/2015
Soprano Pipistrelle	22	967	10/08/2016
Unidentified Bat	1	1583	02/08/2014
Western Barbastelle	11	967	10/08/2016
Whiskered Bat	9	967	10/08/2016

The records centre also provided 2269 records of birds, including barn owl, hobby and kingfisher.

In addition, the records centre provided information relating to the non-statutory designated sites shown in the below figure, which lie within the search area:







#### Non-statutory sites within the search area

(LERC)

1) Butt Lane Pit 2) Hawdin's Wood 3) Norton Big Wood 4) River Witham 5) Stapleford Moor

## D.2 FIELD SURVEY

## D.2.1 <u>HABITATS</u>

The proposed development site covers approximately 0.3ha and is dominated by The Green Man pub to the north with gravel parking and a grass seating area to the south.

The habitats present within the survey area are illustrated within the figure below and described in more detail below.



FIGURE 4: HABITAT MAP



### WOODLAND

The site includes a small corner of a small plantation broad-leaved woodland, dominated by silver birch *Betula pendula* and ivy *Hedera helix*. The woodland was too dense to be accessible. This corner of woodland is included within the site boundary but unlikely to be directly impacted by the development.



### SCATTERED TREES

There is a mature horse chestnut *Aesculus hippocastanum* in the north of the site. A line of trees lies just beyond the fence marking the western boundary. These trees are mainly young or semi-mature and slightly overhang the fence into the site. Species include sycamore *Acer pseudoplatanus*, hawthorn *Crataegus monogyna*, horse chestnut, rowan *Sorbus aucuparia*, field maple *Acer campestre* and wild cherry *Prunus avium*. There is scattered hawthorn along the southern boundary.



## AMENITY GRASSLAND

The grassland areas on site are short (~5cm) and regularly mown. They have picnic benches and appear to be regularly used by patrons of the pub. Typical lawn grass species dominate the sward such as perennial rye grass *Lolium perenne* with some cock's foot *Dactylis glomerata*. Forb species comprise approximately 20% of the sward and include dandelion *Taraxacum officinale*, ribwort plantain *Plantago lanceolata*, yarrow *Achillea millefolium*, white clover *Trifolium repens* and daisy *Bellis perennis*.



#### INTRODUCED SHRUB

Small borders of introduced shrub are located around the edges of the hardstanding car park, with species present such as red robin *Photinia* sp., holly *Ilex* sp., *Elaeagnus* sp., cherry laurel *Prunus laurocerasus*, cypress *Cupressus* sp. and a number of other non-native ornamental species.



## **BUILDINGS & HARDSTANDING**

There are buildings in the north of the site, including The Green Man pub with associated small outbuildings, as well as a small storage building in the north-west of the site which is partly included within the site boundary. None of these buildings are due to be impacted by the development.

Hardstanding areas comprise paving stones surrounding the pub as well as the large gravel/stone car park and entrance to the site.





### FENCES AND WALLS

Timber panel and wire stock-proof fencing and walls demarcate the site boundaries.

### SURROUNDING HABITATS

There is dense scrub immediately west of the site, dominated by bramble. Farmland lies to the south of the site.



## D.2.2 HABITAT ASSESSMENT

The development site is considered to be of low/local value for the habitats it supports.

# D.2.3 <u>TARGET NOTES</u> **TARGET NOTE 1** Rabbit hole (off site within the scrub habitat to the west)





## D.2.3.1 SPECIES

### BATS

No potential roosting features were noted on the mature horse chestnut to the north of the site. The pub building is likely to provide potential roosting features, but a detailed roost assessment was not carried out as it is not to be affected by the proposed development.

The habitats on site provide a limited foraging resource for bats, being predominantly short amenity grassland, hardstanding and buildings. The trees surrounding the site, as well as the scrub to the west and small woodland to the east are likely to be used by foraging and commuting bats and are considered of local value. The site is well linked to the wider agricultural landscape through hedgerows.

The site, excluding the small area of woodland included in the boundary, is considered to be of low value to foraging and commuting bats.

#### **GREAT CRESTED NEWT**

There are no mapped ponds within 500m of the site and there are no aquatic habitats on or near the site. The habitats on site are unsuitable for use by common amphibians, being largely dominated by hardstanding and short grassland.

GCN and common amphibians are considered likely to be absent from the site.

#### BIRDS

No birds were recorded on site during the survey. The limited scattered trees within the site, as well as the scrub and woodland surrounding the site will provide nesting and foraging opportunities to locally common bird species. The short sward of the grassland is unsuitable for ground-nesting species.

Overall, the site is considered to be of local value to birds.

#### BADGER

The site contains limited foraging opportunities for badger and no paths under the fences bordering the woodland to the east or scrub to the west were found during the survey. The hole recorded beyond the south-west of site (target note 1) is likely to be used by rabbit as the tunnel dimensions are too narrow for badger. The woodland in the east of the site, which is typically a better habitat for badger sett creation, is beyond 30m of the development area and unlikely to be impacted by the works. Badger presence on the site is likely to be limited to occasional foraging and commuting.

The site is therefore considered to be of low value to badger.

#### REPTILES

There are records of reptiles within 2km of the site, however the short sward of the grassland and hardstanding which dominate the site are generally unsuitable for reptiles. They are therefore considered likely to be absent from the site.

#### INVERTEBRATES

The site lacks key larval food-plants for priority butterfly species and also lacks typically favoured habitat mosaics. Notable populations of priority butterfly species are considered likely to be absent.



### OTTER, WATER VOLE & WHITE-CLAWED CRAYFISH

There are no aquatic habitats on or within the vicinity of the site with suitability to support these species and they are considered likely to be absent from the site.

## OTHER NATIONAL PRIORITY AND LOCAL BAP SPECIES

The site contains some suitable habitat for hedgehog and is considered to be of low value for this species.



## E.1 POTENTIAL IMPACTS, MITIGATION, COMPENSATION & FURTHER SURVEY

The likely impacts of the proposed development, without appropriate targeted mitigation and/or compensation, are detailed in the table below.

Ecological Receptor	Impact	Mitigation
Habitats	•	
Trees	Damage to retained trees, including those immediately adjacent to site.	Works will be undertaken in accordance with BS5837-2012 'Trees in relation to construction' and retained trees adjacent to the western boundary, where the pods will be constructed, will be protected, including protection of roots.
Woodland	Damage/disturbance.	Retained woodland will be protected from disturbance during construction by heras fencing.
Grassland	Loss and degradation during construction and operational phase.	Wildflower grasslands and wildflower bulb planting will be incorporated into the landscape proposals.
Species		
Bats	Increased lighting affecting foraging/commuting areas potentially used by bats (and other nocturnal wildlife)	Light levels around foraging/commuting areas, particularly the site boundaries, will be low level, below 2m in height, and low lux (below 1 lux 5m from the light source). Warm-light LEDs with very low UV will be used, with cowls designed to accurately target which
<b>.</b>		areas are lit.
Birds	Harm/disturbance to nesting birds if any dense vegetation clearance/tree surgery is carried out during the bird breeding season	A pre-commencement check for nesting birds will be undertaken by a suitably experienced ornithologist if any vegetation clearance is undertaken between March and August inclusive.
Wildlife (general)	Entrapment of wildlife during construction if trenches are left open overnight	Any excavations left open overnight will have a means of escape for wildlife that may become trapped in the form of a ramp at least 300mm in width and angled no greater than 45°.

## E.2 RESIDUAL & CUMULATIVE IMPACTS

Provided that the measures detailed in the above table are implemented, no significant residual adverse impacts are envisaged.

No cumulative impacts have been identified during the impact assessment.

## E.3 MONITORING

Given the nature of the proposed mitigation and compensation strategy, no monitoring is proposed.

## E.4 ADDITIONAL ENHANCEMENT RECOMMENDATIONS

The development presents an opportunity for ecological benefit within the site and the following enhancements are recommended:

- Landscape planting should designed to enhance structural diversity and will include plants bearing flowers, nectar and fruits which are attractive to invertebrates, thereby helping to maintain food resources for wildlife in general.
- Wildflower grassland to be incorporated into the landscaping proposals.
- Installation of bird nest boxes and bat boxes in the trees on site, and adjacent to site if within the same ownership.
- Provision of integrated bird nesting features in the new pods on site.
- Any planting for screening will be of native, species-rich mixtures of scrub and trees.
- Creation of hedgehog hibernacula or habitat piles in quiet undisturbed areas of the site.

# **F.** CONCLUSIONS

Provided that the recommendations in this report are implemented, it is anticipated that proposals may proceed with no significant adverse effect on notable species and/or habitats. Ecological enhancement opportunities include landscaping focused on biodiversity and bat and bird nest box provision, contributing to local and national conservation targets.



# **APPENDICES**

### APPENDIX 1 - COPYRIGHT, CONFIDENTIALITY & LIABILITY

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## APPENDIX 2 - PLANNING POLICY AND LEGISLATIVE CONTEXT

#### NATIONAL PLANNING POLICY

The table below details the key paragraphs from the National Planning Policy Framework (NPPF)<sup>7</sup> relating to the natural environment:

TABLE 6: NATIONAL PLANNING POLICY FRAMEWORK: CONSERVING AND ENHANCING THE NATURAL ENVIRONMENT					
Statement					
Planning policies and decisions should contribute to and enhance the natural and					
local environment by:		1			
a) protecting and enhancing va	lued landscapes, sites of biodiversity or geological value and	1			
soils (in a manner commer	surate with their statutory status or identified quality in the	1			
development plan);					
b) recognising the intrinsic cha	racter and beauty of the countryside, and the wider benefits	1			
from natural capital and eco	system services – including the economic and other benefits				
of the best and most versati	le agricultural land, and of trees and woodland;	1			
c) maintaining the character o	f the undeveloped coast, while improving public access to it	1			
where appropriate:		174			
d) minimising impacts on and	providing net gains for biodiversity, including by establishing	1			
coherent ecological network	s that are more resilient to current and future pressures:				
e) preventing new and existing	development from contributing to, being put at unacceptable				
risk from, or being adversel	v affected by, unacceptable levels of soil, air, water or noise	1			
pollution or land instability.	Development should, wherever possible, help to improve local	1			
environmental conditions s	uch as air and water quality, taking into account relevant	1			
information such as river ba	sin management plans; and	1			
f) remediating and mitigating	despoiled, degraded, derelict, contaminated and unstable	1			
land, where appropriate					
Plans should: distinguish between th	e hierarchy of international, national and locally designated				
sites; allocate land with the least er	vironmental or amenity value, where consistent with other	1			
policies in this Framework <sup>8</sup> ; take a st	rategic approach to maintaining and enhancing networks of	175			
habitats and green infrastructure; and	plan for the enhancement of natural capital at a catchment				
or landscape scale across local author	prity boundaries.				
Great weight should be given to co	onserving and enhancing landscape and scenic beauty in				
National Parks, the Broads and Areas	of Outstanding Natural Beauty which have the highest status	1			
of protection in relation to these issue	s. The conservation and enhancement of wildlife and cultural	1			
heritage are also important consider	ations in these areas, and should be given great weight in	176			
National Parks and the Broads <sup>9</sup> . The	scale and extent of development within all these designated	1			
areas should be limited, while develo	pment within their setting should be sensitively located and	1			
designed to avoid or minimise adverse impacts on the designated areas.					
When considering applications for de	evelopment within National Parks, the Broads and Areas of	1			
Outstanding Natural Beauty, permiss	ion should be refused for major development <sup>10</sup> other than in	1			
exceptional circumstances, and where	e it can be demonstrated that the development is in the public	1			
interest. Consideration of such applic	ations should include an assessment of:	1			
a) the need for the development	nt, including in terms of any national considerations, and the	177			
impact of permitting it, or ref	using it, upon the local economy;				
b) the cost of, and scope for, d	eveloping outside the designated area, or meeting the need				
for it in some other way; and					
c) any detrimental effect on the	e environment, the landscape and recreational opportunities,				
and the extent to which that	could be moderated				
Within areas defined as Heritage Coa	ast (and that do not already fall within one of the designated	178			
Lareas mentioned in paragraph 176) r	planning policies and decisions should be consistent with the				

<sup>&</sup>lt;sup>7</sup> National Planning Policy Framework (July 2021), Department for Communities and Local Government,

<sup>&</sup>lt;sup>8</sup> Where significant development of agricultural land is demonstrated to be necessary, areas of poorer quality land should be preferred to those of a higher quality.

<sup>&</sup>lt;sup>9</sup> English National Parks and the Broads: UK Government Vision and Circular 2010 provides further guidance and information about their statutory purposes, management and other matters.

<sup>&</sup>lt;sup>10</sup> For the purposes of paragraphs 177 and 178, whether a proposal is 'major development' is a matter for the decision maker, taking into account its nature, scale and setting, and whether it could have a significant adverse impact on the purposes for which the area has been designated or defined.



TABLE 6: NATIONAL PLANNING POLICY FRAMEWORK: CONSERVING AND ENHANCING THE NATURAL ENVIRO			
Statement	Paragraph		
special character of the area and the importance of its conservation. Major development within a Heritage Coast is unlikely to be appropriate, unless it is compatible with its special character. To protect and enhance biodiversity and geodiversity, plans should:			
<ul> <li>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<sup>11</sup>; wildlife corridors and stepping stones that connect them; and areas identified by national and local partnerships for habitat management, enhancement, restoration or creation<sup>12</sup>; and</li> <li>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.</li> </ul>	179		
When determining planning applications, local planning authorities should apply the following			
<ul> <li>a) 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;</li> <li>b) 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 Special Scientific Interest;</li> <li>c) 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 reasons63 and a suitable compensation strategy exists; and</li> <li>d) development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to improve biodiversity in and around developments should be integrated as part of their design, especially where this can secure measurable net gains for biodiversity or enhance public access to nature where this is appropriate.</li> </ul>	180		
<ul> <li>The following should be given the same protection as habitats sites:</li> <li>a) potential Special Protection Areas and possible Special Areas of Conservation;</li> <li>b) listed or proposed Ramsar sites<sup>13</sup>; and</li> <li>c) sites identified, or required, as compensatory measures for adverse effects on habitats sites, potential Special Protection Areas, possible Special Areas of Conservation, and listed or proposed Ramsar sites.</li> </ul>	181		
The presumption in favour of sustainable development does not apply where the plan or project is likely to have a significant effect on a habitats site (either alone or in combination with other plans or projects), unless an appropriate assessment has concluded that the plan or project will not adversely affect the integrity of the habitats site.	182		

Section 40 of the Natural Environment and Rural Communities Act 2006, places a duty on all public authorities in England and Wales to have regard, in the exercise of their functions, to the purpose of conserving biodiversity.

Planning Practice Guidance<sup>14</sup> states:

<sup>&</sup>lt;sup>11</sup> Circular 06/2005 provides further guidance in respect of statutory obligations for biodiversity and geological conservation and their impact within the planning system.

<sup>&</sup>lt;sup>12</sup> Where areas that are part of the Nature Recovery Network are identified in plans, it may be appropriate to specify the types of development that may be suitable within them.

<sup>&</sup>lt;sup>13</sup> Potential Special Protection Areas, possible Special Areas of Conservation and proposed Ramsar sites are sites on which Government has initiated public consultation on the scientific case for designation as a Special Protection Area, candidate Special Area of Conservation or Ramsar site.

<sup>&</sup>lt;sup>14</sup> Planning Practice Guidance: Natural Environment (<u>www.planningguidance.communities.gov</u>) Updated July 2019



- Planning authorities need to consider the potential impacts of development on protected and priority species, and the scope to avoid or mitigate any impacts when considering site allocations or planning applications. (para. 016)
- Information on biodiversity and geodiversity impacts and opportunities needs to inform all stages of development (including site selection and design, pre-application consultation and the application itself). An ecological survey will be necessary in advance of a planning application if the type and location of development could have a significant impact on biodiversity and existing information is lacking or inadequate. (para. 018)
- Even where an Environmental Impact Assessment is not needed, it might still be appropriate to undertake an ecological survey, for example, where protected species may be present or where biodiverse habitats may be lost. (para. 018)
- As with other supporting information, local planning authorities should require ecological surveys only where clearly justified. Assessments should be proportionate to the nature and scale of development proposed and the likely impact on biodiversity. (para. 018)
- The National Planning Policy Framework encourages net gains for biodiversity to be sought through planning policies and decisions. Biodiversity net gain delivers measurable improvements for biodiversity by creating or enhancing habitats in association with development. Biodiversity net gain can be achieved on-site, off-site or through a combination of on-site and off-site measures. (para. 022)

## PROTECTED SPECIES LEGISLATION

The table below details the relevant legislation for the protected species covered within the scope of the survey.

TABLE 7: SUMMARISED SPECIES LEGISLATION						
Species	Relevant Legislation	Level of Protection				
Bats (All species)	<ul> <li>Protection under the Wildlife and Countryside Act (WCA) (1981) (Listed on Schedule 5) - as amended</li> <li>Classified as protected species under The Conservation of Habitats and Species Regulations 2017 (as amended)</li> <li>Bats are also protected by the Wild Mammals (Protection) Act 1996</li> </ul>	<ul> <li>The WCA (1981) and The Conservation of Habitats and Species Regulations 2017 (as amended) make it an offence to:</li> <li>Intentionally kill, injure, or take any species of bat</li> <li>Intentionally or recklessly disturb bats</li> <li>Intentionally or recklessly damage destroy or obstruct access to bat roosts</li> </ul>				
Otter	<ul> <li>Protection under the Wildlife and Countryside Act (WCA) (1981) (Listed on Schedule 5) - as amended</li> <li>Classified as protected species under The Conservation of Habitats and Species Regulations 2017 (as amended)</li> <li>Otters are also protected by the Wild Mammals (Protection) Act 1996</li> </ul>	<ul> <li>The WCA (1981) and The Conservation of Habitats and Species Regulations 2017 (as amended) make it an offence to:</li> <li>intentionally kill, injure, or take otters</li> <li>intentionally or recklessly disturb otters</li> <li>intentionally or recklessly amage destroy or obstruct access to otter holts or any place used by the animal for shelter or protection</li> </ul>				
Great Crested Newt	<ul> <li>Protection under the Wildlife and Countryside Act (WCA) (1981) (Listed on Schedule 5) - as amended</li> <li>Classified as protected species under The Conservation of Habitats and Species Regulations 2017 (as amended)</li> </ul>	<ul> <li>The WCA (1981) and The Conservation of Habitats and Species Regulations 2017 (as amended) make it an offence to:</li> <li>intentionally kill, injure, or take great crested newts</li> <li>intentionally or recklessly disturb great crested newts</li> <li>intentionally or recklessly damage destroy or obstruct access to any place used by the animal for shelter or protection</li> </ul>				



TABLE 7: SUMMARISED SPECIES LEGISLATION					
Species	Relevant Legislation	Level of Protection			
Red Squirrel	<ul> <li>Full protection under the Wildlife and Countryside Act (WCA) (1981) (Listed on Schedule 5) - as amended</li> <li>Red squirrels are also protected by the Wild Mammals (Protection) Act 1996</li> </ul>	<ul> <li>The WCA (1981) makes it an offence to:</li> <li>intentionally kill, injure, or take red squirrels</li> <li>intentionally or recklessly damage destroy or obstruct access to any place used by the animal for shelter or protection or disturb red squirrels whilst they are using such a place.</li> </ul>			
Birds	• Protection under the Wildlife and Countryside Act (1981) as amended with the exception of some species listed in Schedule 2 of the Act	<ul> <li>The WCA (1981) makes it an offence to (with exceptions for certain species):</li> <li>Intentionally kill, injure or take any wild bird</li> <li>Intentionally take, damage or destroy nests in use or being built (including ground nesting birds)</li> <li>Intentionally take, damage or destroy eggs</li> <li>Species listed on Schedule 1 of the WCA or their dependant young are afforded additional protection from disturbance whilst they are at their nests</li> </ul>			
White- clawed Crayfish	<ul> <li>Partially protected by the Wildlife and Countryside Act (1981)</li> </ul>	<ul> <li>The WCA (1981) makes it an offence to:</li> <li>Take a white-clawed crayfish from its habitat</li> <li>Sell, offer for sale, advertise for sale, possess or transport for the purposes of selling any live or dead white clawed crayfish</li> </ul>			
Badger	<ul> <li>Protection of Badgers Act 1992</li> <li>Badgers are also protected by the Wild Mammals (Protection) Act 1996</li> </ul>	<ul> <li>The Protection of Badgers Act (1992) makes it an offence to intentionally or recklessly:</li> <li>Damage a badger sett or any part of it</li> <li>Destroy a badger sett</li> <li>Obstruct access to, or any entrance of a badger sett</li> <li>Disturb a badger whilst it is occupying a badger sett</li> </ul>			
Water Vole	<ul> <li>Full protection under the Wildlife and Countryside Act (WCA) (1981) (Listed on Schedule 5) - as amended</li> <li>Water voles are also protected by the Wild Mammals (Protection) Act 1996</li> </ul>	<ul> <li>The WCA (1981) makes it an offence to:</li> <li>intentionally kill, injure, or take water voles</li> <li>intentionally or recklessly damage destroy or obstruct access to any place used by the animal for shelter or protection or disturb water voles whilst they are using such a place</li> </ul>			
Common reptiles (Slow- worm, Adder, Grass Snake, Common Lizard)	<ul> <li>Partially protected by the Wildlife and Countryside Act</li> </ul>	<ul> <li>The WCA (1981) makes it an offence to:</li> <li>intentionally kill or injure these animals</li> <li>sell, offer for sale, advertise for sale, possess or transport for the purposes of selling any live or dead animals or part of these animals</li> </ul>			

Under the Countryside and Rights of Way Act 2000 (CROW Act) the offence in section 9(4) of the Wildlife and Countryside Act 1981 of damaging a place of shelter or disturbing those species given full protection under the act is extended to cover reckless damage or disturbance.

## **INVASIVE SPECIES LEGISLATION**

The table below details the legislation in relation to invasive species and lists those invasive species most likely to be found in this region.



TABLE 8: SUMMARISED INVASIVE SPECIES LEGISLATION						
Relevant Legislation	Description of Offence	<b>Species</b> (Covered by the Legislation and most likely to be found in this Region)				
Listed on Part II of Schedule 9 of the Wildlife and Countryside Act (1981 as amended)	<ul> <li>Section 14 of the WCA (1981) states:</li> <li>if any person plants or otherwise causes to grow in the wild any plant which is included in Part II of Schedule 9, he shall be guilty of an offence.</li> </ul>	Himalayan balsam Cotoneaster Montbretia Japanese knotweed Giant hogweed Rhododendron Pirri-pirri bur New Zealand pygmyweed Giant rhubarb Japanese rose				

#### PROTECTED SITE LEGISLATION

#### CONTEXT IN REGARD TO THE UK'S EXIT FROM THE EUROPEAN UNION

As of 1<sup>st</sup> January 2021, the UK is no longer bound by the Birds Directive and Habitats Directive. However, the Conservation of Habitats and Species Regulations still applies, which formerly acted to transpose the Birds Directive and the Habitats Directive into English and Welsh law. These are still referred to below for contextual purposes, as designated site citations and conservation objectives may not have been updated following the changes to applicable legislation and may still refer to the Directives.

#### STATUTORILY DESIGNATED SITES

#### Ramsar Site

Ramsar sites are designated under the Convention on Wetlands of International Importance, agreed in Ramsar, Iran, in 1971. The Convention recognises wetlands as important ecosystems and includes a range of wetland types from marsh to both fresh and salt water habitats. The wetlands can also include additional areas adjacent to the main water-bodies such as river banks or coastal areas where appropriate.

#### Special Protection Area (SPA)

SPAs are classified by the UK Government under the EC Birds Directive and comprise areas which are important for both rare and migratory birds.

#### Special Areas of Conservation (SAC)

SACs are designated under the EC Habitats Directive and are areas which have been identified as best representing the range and variety of habitats and (non-bird) species listed on Annexes I and II to the Directive. SACs are designated under the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 unless they are offshore.

#### Sites of Special Scientific Interest (SSSI)

SSSIs are designated as sites which are examples of important flora, fauna, or geological or physiographical features. They are notified under the Wildlife and Countryside Act 1981 with improved provisions introduced by the Countryside and Rights of Way Act 2000.

#### National Nature Reserve (NNR)

NNRs are designated by Natural England under the National Parks and Access to the Countryside Act 1949 and the Wildlife and Countryside Act 1981 and support important ecosystems which are managed for conservation. They may also provide important opportunities for recreation and scientific study.

Country Parks



Country Parks are statutorily designated and managed by local authorities in England and Wales under the Countryside Act 1968. They do not necessarily have any nature conservation importance, but provide opportunities for recreation and leisure near urban areas.

#### Local Nature Reserves (LNR)

LNRs are designated under the National Parks and Access to the Countryside Act 1949 by local authorities in consultation with Natural England. They are managed for nature conservation and used as a recreational and educational resource.

#### NON-STATUTORILY DESIGNATED SITES

#### Non-Governmental Organisation Property

These are sites of biodiversity importance which are managed as reserves by a range of NGOs. Examples include sites owned by the RSPB, the Woodland Trust and the Wildlife Trusts.

#### Local Wildlife Site (LWS)

These are sites defined within the local plans under the Town and Country Planning system and are material considerations of any planning application determination. They are designated by the local authority although criteria for designation can vary between authorities.

#### PRIORITY SPECIES

Although not afforded any legal protection, national priority species (species of principal importance, as listed in Section 41 of the NERC Act (2006)), and local and regional priority species, as detailed within the relevant biodiversity action plans, are material considerations in the planning process and as such have been assessed accordingly within this report.

The tables below detail the species/species groups and habitats listed as priorities within the biodiversity action plans of the main Local Planning Authorities' within the north-east of England.

TABLE 9: BIODIVERSITY ACTION PLANS					
Northumberland Biodiversity Action Plan					
Species				Habitats	
Barn Owl	Bats	Black Grouse	Blanket Bog	Built Environment	Brownfield Land
Coastal Birds	Common Seal	Dingy Skipper	Calaminarian Grassland	Coastal heathland	Fen, Marsh & Swamp
Dormouse	Farmland Birds	Freshwater Fish	Gardens & Allotments	Heather Moorland	Lowland Heathland
Freshwater Pearl Mussel	Garden Birds	Great Crested Newt	Lowland Meadows & Pastures	Maritime Cliffs & Slopes	Native Woodland
Grey Seal	Hedgehog	Otter	Ponds, Lakes & Reservoirs	Recreational & Amenity Space	Reedbed
Red Squirrel	River Jelly Lichen	Upland Waders	Rivers & Streams	Rocky Shore, Reefs & Islands	Saline Lagoons
Violet Crystalwort	Water Rock- bristle	Water Vole	Saltmarsh & Mudflat	Sand Dunes	Transport Corridors
White-Clawed Crayfish			Trees & Hedgerows	Upland Hay Meadows	Whin Grassland
Durham Biodive	rsity Action Plan				
	Species	1	Habitats		
Barn Owl	Coastal Birds	Farmland Birds	Native Hedgerows	Veteran Trees, Parkland and Wood Pasture	Woodland and Scrub
Nightjar	Spotted Flycatcher	Upland Birds	Ponds, Lakes & Reservoirs	Lowland Fen	Rivers & Streams
Urban and Garden Wildlife	Freshwater Fish	Grass Snake	Blanket Bog and Upland Wet Heath	Calaminarian Grassland	Upland Calcareous Grassland



TABLE 9: BIODIVER	SITY ACTION PLANS					
Great Crested		Chalk Carpet	Upland Dry	Unland	Upland Screes	
Newt	Reptiles	Moth	heath and Acid Grassland	Haymeadows	and Rock Habitats	
Cistus Forrester	Dark Green Fritillary	Dingy Skipper	Brownfield Sites	Built Structures	Coastal Habitats	
Glow Worm	Grayling	Green Hairstreak	Lowland Heath	Lowland Meadows & Pasture	Magnesian Limestone Grassland	
Least Minor Moth	Mud Snail	Northern Brown Argus	Transport Corridors	Waxcap Grassland		
Northern Dart	Round Mouthed Whorl Snail	Small Pearl- bordered Fritillary				
White Clawed Crayfish	White-letter Hairstreak	Badger				
Bats	Brown Hare	Dormouse				
Harvest Mouse	Hedgehog	Otter				
Pine Marten	Polecat	Red Squirrel				
Water Vole	Water Shrew	Black Poplar				
Juniper	Pale Bristle- Moss	Yellow Marsh Saxifrage				
Newcastle and N	orth Tyneside Bio	diversity Action P	lan			
	Habitats	-		Species		
Brownfield Land	Transport Corridors	Open Water & Wetland	Amphibians	Dingy Skipper	Otter	
Rivers and Watercourses	Managed Urban Greenspace	Native Woodland	Urban Birds	Water Vole	Red Squirrel	
Lowland Grassland	Scrub, Shrub & Hedgerow	Buildings and Structures	Hedgehog	Slow Worm	Bumblebee	
Estuary & Coastal			Brown hare	Farmland Birds	Bats	
Tees Valley Biodiversity Action Plan						
Tees valley blog	iversity Action Pla	an				
Tees valley blog	iversity Action Pla Spe	in cies		Hab	itats	
Barn Owl	Ringed Plover	in cies Grey Partridge	Tree Sparrow	Hab Traditional Orchards	itats Semi-natural Broadleaved Lowland Woodland	
Barn Owl	Ringed Plover Corn Bunting	n cies Grey Partridge Shelduck	Tree Sparrow Wagtail Yellow	Hab Traditional Orchards Reedbeds	itats Semi-natural Broadleaved Lowland Woodland Rivers & Streams	
Barn Owl Little Tern Bittern	Ringed Plover Corn Bunting Swift	n cies Grey Partridge Shelduck Purple Milk- vetch	Tree Sparrow Wagtail Yellow Water Violet	Hab Traditional Orchards Reedbeds Arable field Margins	itats Semi-natural Broadleaved Lowland Woodland Rivers & Streams Roadside Verges	
Barn Owl Little Tern Bittern Globeflower	Ringed Plover Corn Bunting Swift Pepper saxifrage	n cies Grey Partridge Shelduck Purple Milk- vetch Tufted Sedge	Tree Sparrow Wagtail Yellow Water Violet Knotted hedge- parsley	Hab Traditional Orchards Reedbeds Arable field Margins Lowland Meadows	itats Semi-natural Broadleaved Lowland Woodland Rivers & Streams Roadside Verges Sand Dunes	
Barn Owl Little Tern Bittern Globeflower Yellow Star of Bethlehem	Ringed Plover Corn Bunting Swift Pepper saxifrage Burnt Orchid	an cies Grey Partridge Shelduck Purple Milk- vetch Tufted Sedge Green Winged Orchid	Tree Sparrow Wagtail Yellow Water Violet Knotted hedge- parsley Strawberry Clover	Hab Traditional Orchards Reedbeds Arable field Margins Lowland Meadows School Grounds	itats Semi-natural Broadleaved Lowland Woodland Rivers & Streams Roadside Verges Sand Dunes Maritime Cliffs and Slopes	
Barn Owl Little Tern Bittern Globeflower Yellow Star of Bethlehem Flat Sedge	Ringed Plover Ringed Plover Corn Bunting Swift Pepper saxifrage Burnt Orchid Small Leaved Lime	an cies Grey Partridge Shelduck Purple Milk- vetch Tufted Sedge Green Winged Orchid Black Poplar	Tree Sparrow Wagtail Yellow Water Violet Knotted hedge- parsley Strawberry Clover Lyme Grass	Hab Traditional Orchards Reedbeds Arable field Margins Lowland Meadows School Grounds Grazing Marsh	itats Semi-natural Broadleaved Lowland Woodland Rivers & Streams Roadside Verges Sand Dunes Maritime Cliffs and Slopes Hedgerows	
Barn Owl Little Tern Bittern Globeflower Yellow Star of Bethlehem Flat Sedge Scarlet Wax Cap	Ringed Plover Ringed Plover Corn Bunting Swift Pepper saxifrage Burnt Orchid Small Leaved Lime White-letter Hairstreak	an cies Grey Partridge Shelduck Purple Milk- vetch Tufted Sedge Green Winged Orchid Black Poplar Grayling	Tree Sparrow Wagtail Yellow Water Violet Knotted hedge- parsley Strawberry Clover Lyme Grass Dingy Skipper	Hab Traditional Orchards Reedbeds Arable field Margins Lowland Meadows School Grounds Grazing Marsh Gardens and Allotments	itats Semi-natural Broadleaved Lowland Woodland Rivers & Streams Roadside Verges Sand Dunes Maritime Cliffs and Slopes Hedgerows Saline Lagoons	
Barn Owl Little Tern Bittern Globeflower Yellow Star of Bethlehem Flat Sedge Scarlet Wax Cap Blomer's Rivulet	Iversity Action Pla         Spe         Ringed Plover         Corn Bunting         Swift         Pepper         saxifrage         Burnt Orchid         Small Leaved         Lime         White-letter         Hairstreak         Crescent         Striped	an cies Grey Partridge Shelduck Purple Milk- vetch Tufted Sedge Green Winged Orchid Black Poplar Grayling Forester	Tree Sparrow Wagtail Yellow Water Violet Knotted hedge- parsley Strawberry Clover Lyme Grass Dingy Skipper Large Red- Belted Clearwing	Hab Traditional Orchards Reedbeds Arable field Margins Lowland Meadows School Grounds Grazing Marsh Gardens and Allotments Marsh and Saltmarsh	itats Semi-natural Broadleaved Lowland Woodland Rivers & Streams Roadside Verges Sand Dunes Maritime Cliffs and Slopes Hedgerows Saline Lagoons Ponds, Lakes & Reservoirs	
Barn Owl Little Tern Bittern Globeflower Yellow Star of Bethlehem Flat Sedge Scarlet Wax Cap Blomer's Rivulet Fen Wainscot	Nersity Action Pla         Spe         Ringed Plover         Corn Bunting         Swift         Pepper         saxifrage         Burnt Orchid         Small Leaved         Lime         White-letter         Hairstreak         Crescent         Striped         Shore Wainscot	an cies Grey Partridge Shelduck Purple Milk- vetch Tufted Sedge Green Winged Orchid Black Poplar Grayling Forester Eccentric Grass Snail	Tree Sparrow Wagtail Yellow Water Violet Knotted hedge- parsley Strawberry Clover Lyme Grass Dingy Skipper Large Red- Belted Clearwing Moss Chrysalis Snail	Hab Traditional Orchards Reedbeds Arable field Margins Lowland Meadows School Grounds Grazing Marsh Gardens and Allotments Marsh and Saltmarsh Parks and Recreation Grounds	itats Semi-natural Broadleaved Lowland Woodland Rivers & Streams Roadside Verges Sand Dunes Maritime Cliffs and Slopes Hedgerows Saline Lagoons Ponds, Lakes & Reservoirs Lowland Heath	
Barn Owl Little Tern Bittern Globeflower Yellow Star of Bethlehem Flat Sedge Scarlet Wax Cap Blomer's Rivulet Fen Wainscot Moss Chrysalis Snail	Nersity Action Pla         Spe         Ringed Plover         Corn Bunting         Swift         Pepper         saxifrage         Burnt Orchid         Small Leaved         Lime         White-letter         Hairstreak         Crescent         Striped         Shore Wainscot         Bats (except         common         pipistrelle)	an cies Grey Partridge Shelduck Purple Milk- vetch Tufted Sedge Green Winged Orchid Black Poplar Grayling Forester Eccentric Grass Snail Brown Hare	Tree Sparrow Wagtail Yellow Water Violet Knotted hedge- parsley Strawberry Clover Lyme Grass Dingy Skipper Large Red- Belted Clearwing Moss Chrysalis Snail Harvest Mouse	Hab Traditional Orchards Reedbeds Arable field Margins Lowland Meadows School Grounds Grazing Marsh Gardens and Allotments Marsh and Saltmarsh Parks and Recreation Grounds Brownfields	itats Semi-natural Broadleaved Lowland Woodland Rivers & Streams Roadside Verges Sand Dunes Maritime Cliffs and Slopes Hedgerows Saline Lagoons Ponds, Lakes & Reservoirs Lowland Heath Churchyards and Cemeteries	
Barn Owl Little Tern Bittern Globeflower Yellow Star of Bethlehem Flat Sedge Scarlet Wax Cap Blomer's Rivulet Fen Wainscot Moss Chrysalis Snail Harbour Seal	Spe         Ringed Plover         Corn Bunting         Swift         Pepper         saxifrage         Burnt Orchid         Small Leaved         Lime         White-letter         Hairstreak         Crescent         Striped         Shore Wainscot         Bats (except         common         pipistrelle)         Water Vole	an cies Grey Partridge Shelduck Purple Milk- vetch Tufted Sedge Green Winged Orchid Black Poplar Grayling Forester Eccentric Grass Snail Brown Hare Common Lizard	Tree Sparrow Wagtail Yellow Water Violet Knotted hedge- parsley Strawberry Clover Lyme Grass Dingy Skipper Large Red- Belted Clearwing Moss Chrysalis Snail Harvest Mouse Slow Worm	Hab Traditional Orchards Reedbeds Arable field Margins Lowland Meadows School Grounds Grazing Marsh Gardens and Allotments Marsh and Saltmarsh Parks and Recreation Grounds Brownfields	itats Semi-natural Broadleaved Lowland Woodland Rivers & Streams Roadside Verges Sand Dunes Maritime Cliffs and Slopes Hedgerows Saline Lagoons Ponds, Lakes & Reservoirs Lowland Heath Churchyards and Cemeteries	
Barn Owl Little Tern Bittern Globeflower Yellow Star of Bethlehem Flat Sedge Scarlet Wax Cap Blomer's Rivulet Fen Wainscot Moss Chrysalis Snail Harbour Seal Great Crested Newt	Spe         Ringed Plover         Corn Bunting         Swift         Pepper         saxifrage         Burnt Orchid         Small Leaved         Lime         White-letter         Hairstreak         Crescent         Striped         Shore Wainscot         Bats (except         common         pipistrelle)         Water Vole         Bullhead	an cies Grey Partridge Shelduck Purple Milk- vetch Tufted Sedge Green Winged Orchid Black Poplar Grayling Forester Eccentric Grass Snail Brown Hare Common Lizard Salmon	Tree Sparrow Wagtail Yellow Water Violet Knotted hedge- parsley Strawberry Clover Lyme Grass Dingy Skipper Large Red- Belted Clearwing Moss Chrysalis Snail Harvest Mouse Slow Worm Brown Trout	Hab Traditional Orchards Reedbeds Arable field Margins Lowland Meadows School Grounds Grazing Marsh Gardens and Allotments Marsh and Saltmarsh Parks and Recreation Grounds Brownfields	itats Semi-natural Broadleaved Lowland Woodland Rivers & Streams Roadside Verges Sand Dunes Maritime Cliffs and Slopes Hedgerows Saline Lagoons Ponds, Lakes & Reservoirs Lowland Heath Churchyards and Cemeteries	
Barn Owl Little Tern Bittern Globeflower Yellow Star of Bethlehem Flat Sedge Scarlet Wax Cap Blomer's Rivulet Fen Wainscot Moss Chrysalis Snail Harbour Seal Great Crested Newt European Eel	Spe         Ringed Plover         Corn Bunting         Swift         Pepper         saxifrage         Burnt Orchid         Small Leaved         Lime         White-letter         Hairstreak         Crescent         Striped         Shore Wainscot         Bats (except         common         pipistrelle)         Water Vole         Bullhead         Brook Lamprey	an cies Grey Partridge Shelduck Purple Milk- vetch Tufted Sedge Green Winged Orchid Black Poplar Grayling Forester Eccentric Grass Snail Brown Hare Common Lizard Salmon Sea Lamprey	Tree Sparrow Wagtail Yellow Water Violet Knotted hedge- parsley Strawberry Clover Lyme Grass Dingy Skipper Large Red- Belted Clearwing Moss Chrysalis Snail Harvest Mouse Slow Worm Brown Trout River Lamprey	Hab Traditional Orchards Reedbeds Arable field Margins Lowland Meadows School Grounds Grazing Marsh Gardens and Allotments Marsh and Saltmarsh Parks and Recreation Grounds Brownfields	itats Semi-natural Broadleaved Lowland Woodland Rivers & Streams Roadside Verges Sand Dunes Maritime Cliffs and Slopes Hedgerows Saline Lagoons Ponds, Lakes & Reservoirs Lowland Heath Churchyards and Cemeteries	
Barn Owl         Little Tern         Bittern         Globeflower         Yellow Star of         Bethlehem         Flat Sedge         Scarlet Wax         Cap         Blomer's Rivulet         Fen Wainscot         Moss Chrysalis         Snail         Harbour Seal         Great Crested         Newt         European Eel         Cumbria Biodive	Ringed Plover Ringed Plover Corn Bunting Swift Pepper saxifrage Burnt Orchid Small Leaved Lime White-letter Hairstreak Crescent Striped Shore Wainscot Bats (except common pipistrelle) Water Vole Bullhead Brook Lamprey rsity Action Plan	an cies Grey Partridge Shelduck Purple Milk- vetch Tufted Sedge Green Winged Orchid Black Poplar Black Poplar Grayling Forester Eccentric Grass Snail Brown Hare Common Lizard Salmon Sea Lamprey	Tree Sparrow Wagtail Yellow Water Violet Knotted hedge- parsley Strawberry Clover Lyme Grass Dingy Skipper Large Red- Belted Clearwing Moss Chrysalis Snail Harvest Mouse Slow Worm Brown Trout River Lamprey	Hab Traditional Orchards Reedbeds Arable field Margins Lowland Meadows School Grounds Grazing Marsh Gardens and Allotments Marsh and Saltmarsh Parks and Recreation Grounds Brownfields	itats Semi-natural Broadleaved Lowland Woodland Rivers & Streams Roadside Verges Sand Dunes Maritime Cliffs and Slopes Hedgerows Saline Lagoons Ponds, Lakes & Reservoirs Lowland Heath Churchyards and Cemeteries	



TABLE 9: BIODIVERSITY ACTION PLANS					
Red Wood Ant	Wall Mason Bee	a ground beetle Dyschirius angustatus	Rivers	Lakes, Ponds and Tarns	Hedgerows
a ground beetle Bembidion testaceum	Oxbow Diving Beetle	Barn Owl	Traditional Orchards	Wood-Pasture & Parkland	Semi-natural Woodland
Song Thrush	Pearl Bordered Fritillary	High Brown Fritillary	Lowland Dry Acid Grassland	Calcareous Grassland	Hay Meadows and Pastures
Marsh Fritillary	Netted Carpet	Least Minor	Coastal and Floodplain Grazing Marsh	Heathland	Fen, Marsh and Swamp
a caddisfly Glossosoma intermedium	Freshwater Crayfish	Variable Damselfly	Bogs	Montane Habitats	Rock habitats
White-faced Dragonfly	Atlantic Salmon	Schelly	Calaminarian Grasslands	Previously developed land	Coastal Habitats above High Water
Vendace	Southern silver Stiletto-fly	Northern Silver Stiletto-fly	Coastal Intertidal Habitats	Coastal Saline lagoons	Coastal Subtidal Habitats
River Jelly Lichen	a lichen Lobaria amplissima	Pink Waxcap			
Medicinal Leech	Whiskered Bat	Brandt's Bat			
Natterer's Bat	Daubenton's Bat	Noctule			
Common	Soprano	Brown Long-			
Pipistrelle	Pipistrelle	eared Bat			
Red Squirrel	Water Vole	Hazel Dormouse			
Sandbowl Snail	a whorl snail Vertigo geyeri	Slender Green Feather-moss			
Great Crested Newt	Natterjack Toad	Pillwort			
Juniper	Northern Hawksbeard	Small White Orchid			