Appendix C

ECOLOGY REPORTS

Ecological Assessment

Cullompton Relief Road (CRR)

Draft_V1
December 2018

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Report Produced for **Mid Devon District Council**

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Issue: V1

Date: November 2018

EXECUTIVE SUMMARY

- The site Cullompton Relief Road (CRR) consisted of agricultural and recreational land dissected by the M5 Motorway, Cullompton, Mid Devon (Central Grid Reference ST 02653 07128).
- The draft proposals for the site include the creation of a relief road within the site, this will necessitate the removal of internal hedgerows, grassland, and woodland.
- A phase 1 survey was undertaken on site which included an extended survey for protected species.
- An unconfirmed wildlife site; Helle Marsh, was located within southern boundary of the site.
- The habitats on site included running water, amenity grassland, poor semi-improved grassland, hardstanding, broadleaved woodland, hedge with trees, species poor, hedge with trees species rich, defunct species poor hedgerow, buildings, scattered scrub, and a single pond.
- The hedgerows, woodland, and riparian habitats were assessed to be the key ecological features on site.
- The site was assessed to provide suitable habitat for a range of species including otter, dormouse, a range of birds, and bats.
- Adult and juvenile dormice were recorded across the site during dormouse tube surveys
- A detailed report will be issued when the final proposals are issued.
- The detailed report will highlight the ecological constraints regarding the impact of the relief road on protected species and will provide recommendations such as appropriate mitigation, compensation, and enhancements.

CONTENTS

1 INTRODUCTION

1.0 Aims and objectives

The overall assessment has been informed by guidelines provided in the *'CIEEM guidelines for ecological report writing 2nd Edition,* 2017*'*. Further guidance in relation to surveys for protected species is detailed in the relevant sections within this report. The primary aims of the ecological assessment is to provide a robust evaluation of the potential impacts of the proposed scheme on ecological features that may be affected; with due regard to relevant local planning policy and legislation.

The ecological appraisal has the following objectives:

- to identify the existing habitats on site;
- to identify the potential for protected species;
- to establish baseline ecological conditions and determine the importance of ecological features present within the specified area;
- to identify if any further surveys are required with regards to protected habitats or species.
- to identify key ecological constraints to the project and make recommendations for design options to avoid significant effects on important ecological features/resources;
- to establish any requirements for further surveys or licensing;

1.1 Structure of Report

The following sections are included within this report:

- Legislative and planning context;
- Methodology;
- Background data search;
- Phase 1 habitat survey;
- Protected species results; and,
- Discussion

1.2 Site Location

The site was located at Cullompton, Mid Devon (Central Grid Reference ST 02653 07128 as shown on **Figure 1**.

Figure 1: Site Location

1.3 Development proposals

The development proposals included the creation of a relief road. A final layout has not been given to date.

The draft proposals included the creation of a road from the north to the south within the western section of the site. Several draft proposals also included the creation of an adjoining road located to the south of the site and running from west to east. The proposals require the removal of certain areas of habitat including internal hedgerows.

2 LEGISLATIVE AND POLICY CONTEXT

This section provides a summary of the legislative and planning context which has been used to inform the ecological assessment and subsequent recommendations made in this report. Appendix 1 sets out further details in relation to the most relevant legislation and policy.

2.0 Summary of Legislation

The Habitats Directive (together with the Birds Directive) forms the cornerstone of Europe's nature conservation policy. It is built around two pillars: the Natura 2000 network of protected sites and the strict system of species protection. All in all, the directive protects over 1,000 animals and plant species and over 200 "habitat types" (e.g. special types of forests, meadows, wetlands, etc.), which are of European importance. The habitats Directive and parts of the Birds Directive are transposed into legislation by the **Conservation of Habitat and Species Regulations 2017**. Further detail on legislation and designated sites is provided in appendix A1.2; with reference to the protection of Special Areas of Conservation (SAC) and Special Protection Areas (SPA).

The Wildlife and Countryside Act 1981 (as amended) is a key piece of national legislation which implements the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) and implements the species protection obligations of Council Directive 2009/147/EC (formerly 79/409/EEC) on the Conservation of Wild Birds (EC Birds Directive) in Great Britain.

Badgers and their setts are protected under the **Protection of Badgers Act 1992** as amended by the Hunting Act 2004.

The **Natural Environment and Rural Communities Act 2006** (the NERC act) places a duty on all public authorities, including local planning authorities, to consider biodiversity in their work. Local planning authorities are to ensure that there is no net loss of biodiversity on a site, no net loss in habitat connectivity and aims to enhance biodiversity.

The **Hedgerows Regulations 1997** protect 'important hedgerows' from being removed (uprooted or destroyed). Hedgerows are protected if they are at least 30 years old and meet at least one of the criteria listed in part II of schedule 1.

Specific legislation related to different species such as bats, birds and reptiles is outlined in Appendix 1, A1.1.

2.1 Policy

The **National Planning Policy Framework (NPPF)** aims to minimise impacts on biodiversity and provide net gains in biodiversity where possible, contributing to the Government's commitment to halt the overall decline in biodiversity, including the establishment of coherent ecological networks more resilient to current and future pressures.

The UK Biodiversity Action Plan (UKBAP) was organised to fulfil the Rio Convention on Biological Diversity in 1992, to which the UK is a signatory.

There is no longer a UK Biodiversity Action Plan; this has been replaced by the **UK Post-2010 Biodiversity Framework (2012).** The England Biodiversity Strategy has been replaced by **Biodiversity 2020: A strategy for England's wildlife and ecosystem services (2011).** As a result, the BAP process has been devolved to local level with each county deciding its own way forward.

2.1.1 Local Policy

Development Management Policies

5.10 Major applications (defined in the glossary) should be accompanied by a habitat survey describing what flora and fauna are present on the site, with particular regard to protected species. In permitting the development, the Council must be satisfied that onsite biodiversity mitigation, where required, is sufficient to make the development acceptable in planning terms.

5.11 Green infrastructure provided within major development sites should normally serve a variety of purposes such as flood attenuation, leisure and recreation, provision of natural habitats, and shading and cooling of buildings and public areas. Green infrastructure functions can co-exist in one place, so the land coverage does not have to be extensive in every case. Green infrastructure within the site should be achieved as part of the broader objectives for sustainable design contained in Policy DM3 and high-quality design (Policy DM2). Applicants should have regard to the Town and Country Planning Association document, Biodiversity by Design, and should explore opportunities for green infrastructure to deliver wider environmental measures, such as those set out in the SW River Basin Management Plan.

5.25 County Wildlife Sites are undesignated sites selected because of the presence of important habitats or species. There are over 200 such sites in Mid Devon, representing a variety of habitats. Development proposals adversely affecting a County Wildlife Site will be considered on a case by-case basis, according to the amount of information available about the site and its significance, relative to the type, scale and benefits of the development being proposed. The same position will be taken on proposals that impact on Local Nature Reserves.

5.27 Policy DM30 affords protection to specific sites of significant wildlife or geological importance. The Council will also have regard to whether the application site is a priority habitat as defined in the UK Biodiversity Action Plan, including certain classifications of grassland, heathland, woodland or marsh. While the loss of irreplaceable habitats will not normally be permitted, the Council will seek the replacement of a priority habitat where it is significantly affected, and its replacement can be achieved, through a planning obligation as appropriate. The Countryside and Rights of Way Act 2000, the UK Biodiversity Action Plan and several other Regulations and Directives also designate protected species with legal protection. It is an offence recklessly or deliberately to kill, injure, capture or disturb protected species, which includes carrying out works which obstruct, damage or destroy access to that species habitat. These provisions are set out in law and apply in addition to relevant policies in the Local Plan.

3 METHODOLOGY

3.1 Background data search

A background data search was received from Devon Biodiversity Records Centre (DBRC) - June 2018. The search area included records of protected and notable species and non-statutory sites 2km from the proposed development site and statutory designated sites within 1km of the Site.

An additional search for granted European Protected Species (EPS) licenses was undertaken within 1.5km of the site boundary using publicly available information (DEFRA Magic map).

3.2 Phase 1 habitat survey

The Phase 1 habitat survey and mapping has drawn on guidance provided in the *Handbook for Phase 1 Habitat Survey - a technique for environmental audit* (JNCC 2010). A Phase 1 habitat survey was carried out on the 10th July 2018. The survey incorporated detailed assessment of the land within the development boundary, including a description and mapping of all key features and habitat types. The survey was carried out to identify the range of habitats within the site and the predominant and notable species of flora, including any invasive non-native species present.

3.3 Protected species surveys

The Phase 1 habitat survey has been extended to include an assessment for protected species in line with *Guidelines for Preliminary Ecological Appraisal, 2nd edition, CIEEM 2017*. Additionally, targeted surveys for bats were undertaken in the form of static detector surveys. Details of targeted surveys and general methodologies focusing on habitat suitability are described below.

3.3.1 NERC S. 41 Mammals

The survey included an assessment of the habitats on site for their potential to support NERC Section 41 species such as hedgehog *(Erinaceus europaeus)*, polecat *(Mustela putorius)*, harvest mouse *(Micromys minutus)* and brown hare *(Lepus europaeus)*. This included a search for nests, runs, latrines, paw prints, and live specimens.

3.3.2 Badger

The survey for badger *(Meles meles)* included a search of the development site for any evidence of badgers, including setts, foraging signs (snuffle holes), runs and latrines.

3.3.3 Hazel Dormouse

120 dormouse tubes were deployed in suitable habitat across the site on 26th July 2018 at roughly 20 metre intervals. The tubes were checked once a month between July – November 2018 under the supervision of Roger Martindale who holds a Natural England Class License for surveying dormice. Table 1 below (taken from **Table 5** of the *Dormouse Conservation Handbook*) shows the index of probability of finding evidence of dormouse in nest tubes. The score is based on 50 tubes deployed (doubled for 100 tubes and halved for 25 tubes) and a minimum score of 20 must be reached to determine presence/likely absence. The months and scores highlighted in red show the dates when the 120 dormouse tubes were deployed on site.

Table 1: Presence/absence likelihood

Month	Score
April	*1*
May	*4*
June	2
July	**2**
August	**5**
September	**7**
October	**2**
November	***2***
Total x 2 for over 100 tubes	**36**

3.3.4 Otter

A detailed otter survey was undertaken across the study area on 9th July 2018. The surveys involved searching along the banks of the River Culm, ditches and a small brook within the west of the site for signs of otter activity.

The methodology was informed by English Nature's advice sheet Monitoring the Otter, Conserving Natura 2000 Rivers Monitoring Series No. 10 and the national otter survey of Wales 2002. Principal field signs for otter are:

- Holts - underground shelters, often found under tree roots, in rock piles, earth banks, and can be located within existing structures such as badger setts, rabbit burrows, fox earths. Above ground shelters in dense scrubby vegetation.
- Couches - lying up places above ground. Often found in long grasses, dense vegetation or rushes near watercourses or in wetland areas.
- Feeding sites - where food remains are found, mainly fish, shellfish or amphibians.
- Spraints - faeces left by the otter, showing food remains. Typically, in prominent positions on rocks, trees or tree roots, beneath bridges, at crossing points of fences or walls, or confluence of river systems.
  Spraints can be placed in one of three categories: old, recent or fresh. This provides some indication of the level and most recent occurrence of activity.
- Tracks - otter tracks (typically footprints) are highly distinctive and diagnostic and clearly differentiated from mink tracks by both size and shape.

3.3.5 Water vole

Standard survey methodology based on that found in the 'Water Vole Conservation Handbook' 2nd edition (*Strachan 2006*) was undertaken on the 9th July 2018. Surveys were undertaken during the optimal period - May to September when voles are active.

Data was recorded on the standard water vole survey form (*Strachan et al.*) which records background and habitat information, which can inform the relative suitability of a water body for water voles. Presence of water voles is recorded and includes: number of sightings, number of latrines, number of burrows and presence of other evidence (footprints, feeding remains etc). All water bodies within the site have been visited on foot by experienced surveyors. The survey entailed a search for the following evidence:

- Sightings;
- Footprints;
- Run-ways in vegetation;
- Burrows;
- Lawns;
- Nests;
- Feeding stations;
- Faeces and latrines.

3.3.6 Bats

The methodology for the bat survey has been informed by the Bat Conservation Trust *Bat Surveys Good Practice Guidelines 2016.* The habitats on site were assessed for their suitability for foraging and commuting bats and the potential for roosting bats. Additionally, the following surveys and assessment were undertaken:

3.3.6.1 Bats: Habitats

The habitats on site were assessed for their suitability to support foraging and commuting bats. The assessment looked at availability of suitable habitat and connectivity features in the wider landscape.

3.3.6.2 Bats: Preliminary roost inspection

Physical external inspection of the buildings and an inspection for potential roosting features of the trees on site were undertaken by the surveyor using the equipment described below to assist the inspection. A CLU-10 (1 million candlepower) searchlight fitted with a red filter was used to search dark areas for signs of bats. Pentax 0.5m Papilio (8.5x21) close focusing binoculars were used to view areas inaccessible on foot.

The physical search includes a search for live animals and a search for other signs that give an indication of past or present occupancy as outlined below. In the case of bats, typical indicators include droppings (which are characteristic and can often be speciated or at least

be indicative of species type), signs of staining, urine splashing, characteristic odours, and accumulations of discarded prey remains.

3.3.6.3 Bats: Static activity surveys

Passive bat detector surveys were used to identify levels of bat activity on the Site, as recommended in BCT Survey Guidelines. Passive bat detectors can provide a greater understanding of the bat species using the Site and identify patterns in bat activity over long periods of time.

Four Wildlife Acoustics Song Meter 4 (SM4) passive bat detectors were deployed in suitable locations on site **(Figure 7)**. This provided an assessment of bat activity across the site and highlighted areas of high activity. All calls recorded were analysed using Kaleidoscope Software. Two additional detectors were deployed on site but failed to record; discussed in limitations section 3.5.

Figure 2: Detector locations

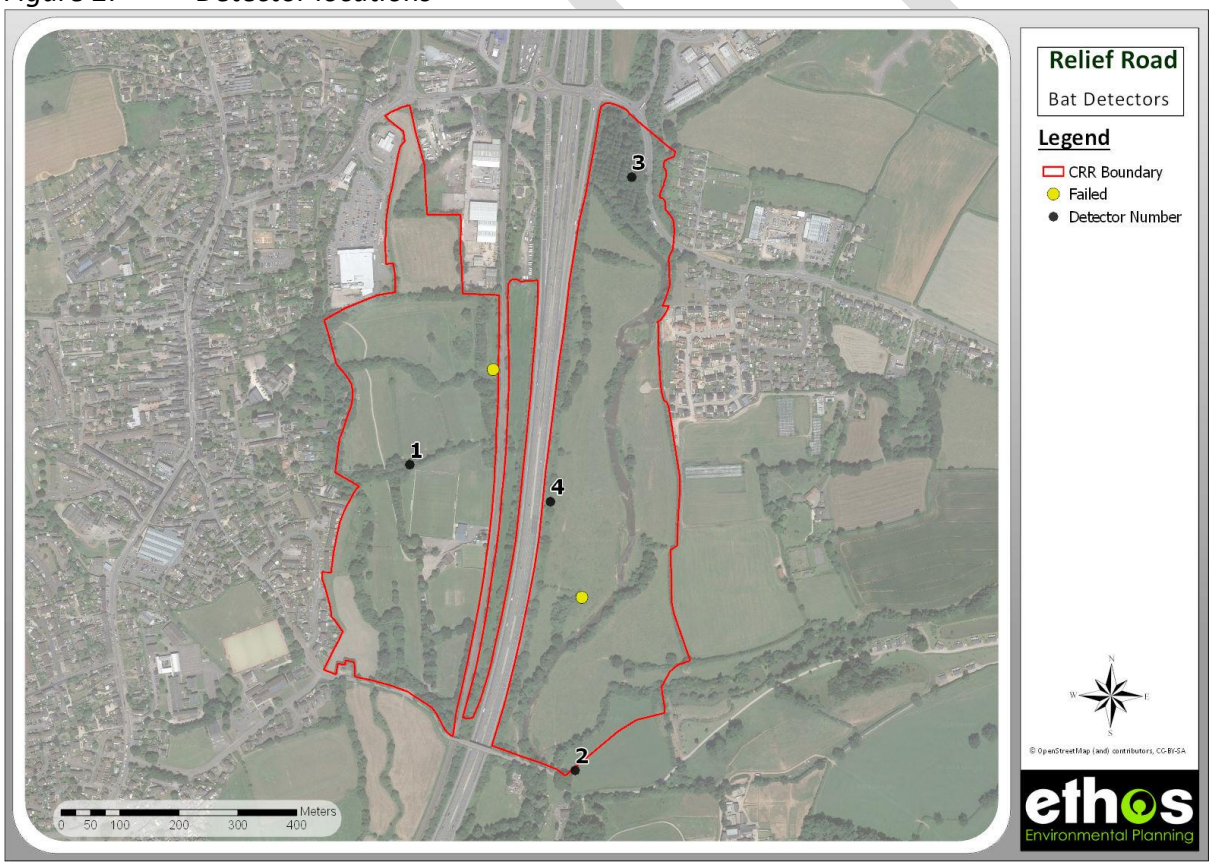


Table 2: Statics on site

Detector Number	Detector	Deploy Date	Collect date	Nights Recorded
1	SM4 ZC	10/07/2018	26/07/2018	16
2	SM4 ZC	23/08/2018	30/08/2018	7
3	SM4 ZC	22/07/2018	30/08/2018	8
4	SM4 ZC	30/08/2018	24/09/2018	25

3.3.6.4 Bats: Activity Surveys

Three activity surveys were undertaken on site. These involved surveyors walking a transect around the site for approximately 2 hours after sunset; see below.

Table 3: Activity surveys

Survey Night	Transects
10th July 2018	3
23rd August 2018	2
27th September 2018	2

3.3.6.5 Advanced bat surveys

Given the landscape scale of the development, determining the sex and breeding status of key bat species is also considered essential for the appropriate evaluation of the sites importance, which only bat trapping can achieve. The aims of the surveys are to:

- Further investigate the status of barbastelle and horseshoe bats at the proposed Garden Village site with an emphasis on woodland habitats and tree lines during the breeding season (May to September 2018);
- Radio-track key individuals using the site to locate breeding roosts of barbastelle, possibly Bechstein's *Myotis bechsteinii*, greater horseshoe *Rhinolophus ferrumequinum*, lesser horseshoe *Rhinolophus hipposideros* and the tree roosting species Natterer's *Myotis nattereri*, noctule *Nyctalus noctula* and Daubenton's *Myotis daubentonii* bats to determine activity patterns and habitat use; and
- Present a robust baseline of the use of the site and surrounding areas by a range of bat species, from which effective assessment of impacts can be made, and mitigation measures developed, including appropriate roost protection measures, lighting design, bat road crossing mitigation and detailed landscaping/planting inventories and habitat management.

3.3.7 Birds

The bird survey included an assessment of the habitats on site for their potential to support breeding birds. Surveyors were equipped with Barr and Stroud 8 x 42 binoculars and any bird species observed during all site visits were recorded.

3.3.8 Reptiles

The survey methodology for this assessment was informed by the Froglife Advice Sheet 10 – Surveying for Reptiles. One hundred refugia were positioned in suitable habitat on site, focusing on the grassland fringes and scrub. Whilst the site red line boundary totalled approximately 50 ha, the vast majority of this was heavily grazed semi-improved grassland which was assessed to be unsuitable for reptiles. Approximately ten percent of the site was assessed to provide suitable habitat for reptiles. Mats were therefore deployed at a density of 20 per ha, which doubles the maximum refugia rate in Froglife (5 – 10 per ha). The reptile mats were deployed on site on 4th July 2018.

A search of natural refugia and basking areas was also undertaken during site surveys.

Surveys were targeted to areas most likely to contain reptile habitats and to those areas that may be disturbed as part of the scheme and also (to maximize the encounters with reptiles) searches were undertaken when the air temperature was between 9°C and 18 °C with intermittent or hazy sunshine, little or no wind, and no rainfall.

3.3.9 Amphibians

The habitats on site were assessed for their potential to support amphibian species, including great crested newts (*Triturus cristatus)* (GCN). Surveys for GCN were informed by the *Great Crested Newt Conservation Handbook,* Froglifea 2001. The site was examined for suitable waterbodies and for breeding terrestrial habitat. Terrestrial habitats providing sufficiently structured vegetation in which amphibians may forage or hibernate over winter were also surveyed for. In addition to the on-site assessment, *Great Crested Newt Mitigation Guidelines* (English Nature, 2001) recommend that a desktop analysis of ponds within 500m of the site be undertaken, to identify any potential breeding ponds which may require further survey. Ponds within 500m of the site were mapped on GIS with an OS OpenData base map at 1:10,000 resolution.

HSI Scoring

HSI (Habitat suitability Index) assessments for GCN were undertaken on a single pond on site as well as three other ponds within a 500m radius of the site boundary. The HSI assessments were undertaken on the 9th June 2018 by a suitably experienced ecologist.

3.3.10 White Tailed Crayfish

Surveys for white-clawed crayfish (*Austropotamobius pallipes*) was undertaken using the manual searching methodology. On 9th June 2018, surveys were undertaken including a search along the river banks for live specimens or evidence of predated crayfish on the shore.

3.3.11 Insects

An assessment of the habitat on site for insects was undertaken, including the need for additional targeted surveys.

3.4 Personnel

Surveyors included Charlie Fayers, BSc (Hons), ACIEEM, Sarah Forsyth, BSc (Hons), ACIEEM, Rachel Fayers BSc (Hons) ACIEEM, Roger Martindale, BSC Hons), MSC. CEnv, MCIEEM, Matt Attrill BSc (Hons) grad CIEEM, Martin Smith BSc (Hons) Grad CIEEM, Joel Moore BSc (Hons), Steph Green MSc (Hons), and Katie Mitchell (Intern from Exeter University).

Charlie, Rachel and Sarah are qualified ecologists with over five years' experience of practical field ecology experience and are associate members of the Chartered Institute of Ecology and Environmental Management (CIEEM). Martin, Matt, and Steph are graduate members of CIEEM and between them hold Natural England bat and GCN licenses.

Roger Martindale (Alder Ecology) is an associate of Ethos and holds a Natural England dormouse license. Roger has worked on numerous projects with Ethos.

The survey team have worked together on numerous similar projects and have a complimentary range of skills and experience which are considered to have provided a robust ecological appraisal of the site.

3.5 Limitations

Two SM4 ZC bat detectors failed during deployment and did not record. This included two detectors deployed between the 10th – 26th July from different location on site **(see figure 7)**.

Reptile mats were deployed on site in line with the methodology. However, all of the reptile mats were removed across the site. Therefore, no further surveys were undertaken. Results within section 6.6 were of incidental records during site visits and systematic searches of natural refugia.

Pond 1 (P1) was dry at the time of survey and surveys were initiated in July. Therefore, GCN surveys were not undertaken within this assessment.

4 BACKGROUND DATA REVIEW

Previous surveys by Ethos were undertaken on a site approximately 500m east of the site boundary (Preliminary Ecological Appraisal, 2016). This included previous dormouse and GCN surveys. These surveys were used to inform the protected species results within this report.

A background data search was also provided by Devon Biodiversity Records Centre (DBRC) 4th June 2018.

The background data search included a 2km search for all species and statutory and non-statutory sites and an additional 4km search radius for bats and bat roosts.

4.1 Notable Sites

4.1.1 Statutory Sites

There were four ASNW (Ancient Semi-Natural Woodland) within the data search.

No other statutory sites within the data search. See below **(Figure 8)**.

Figure 3: Statutory Sites

4.1.2 Non Statutory Sites

There was one UWS (Unconfirmed Widlife Site) on site. This included Cullompton Hele Marsh, a possible flooodplain grazing marsh located within the western section of the site (**Figure 9**). Willand Marsh UWS was also located 200m north of the site and extended 5km north of the site boundary.

Figure 4: Non Statutory sites provided by Devon Biological Records Centre

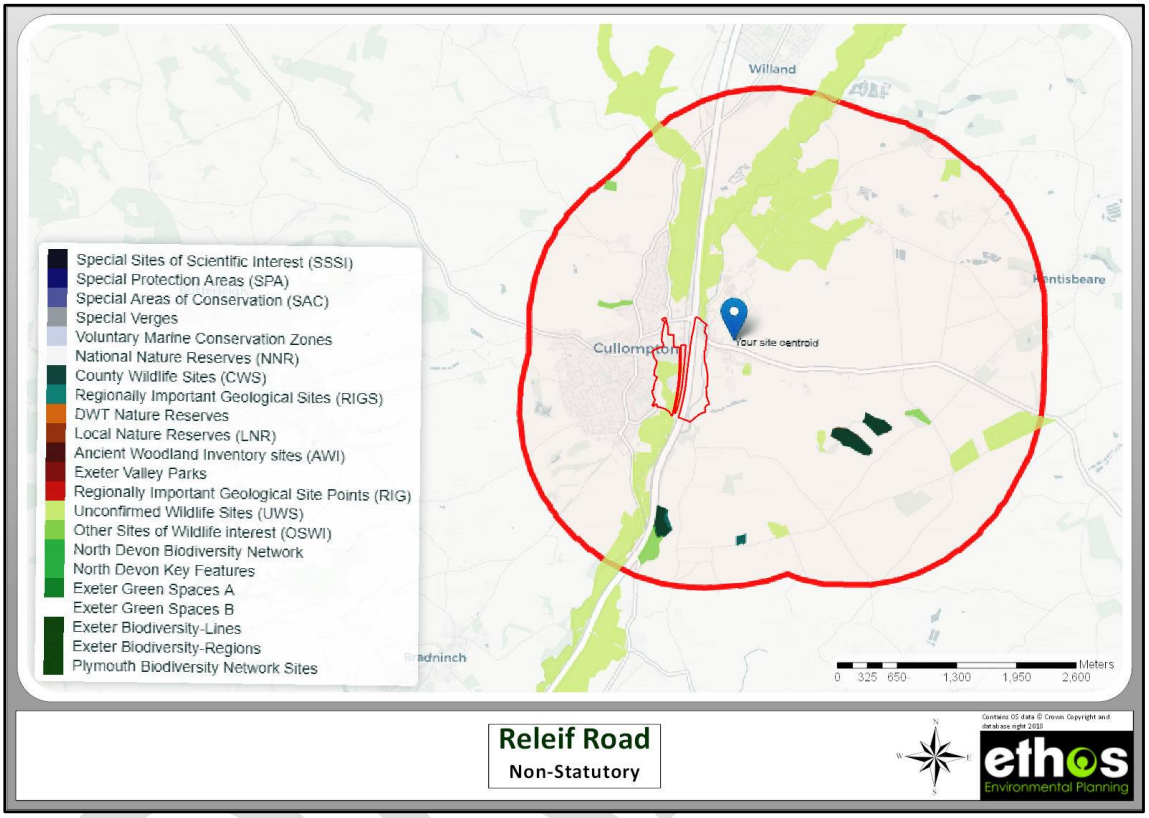


Table 4: Non-statutory sites

Site Name	Grid Reference	Distance from Site	Description	Status
Knight's Wood	ST023055	1km south	Ancient semi-natural woodland	CWS
Aller Wood	ST045064	1.6km east	Plantation on ancient woodland site, wet in areas	CWS
Weekes Farm Orchard	ST032053	1.5km south	Traditional ridge and furrow orchard	CWS
Bourne Wood	ST018092	2km north	Wet secondary broadleaved woodland	OSWI
St.Andrew's Hill	ST019079	600m north-west	Semi-improved neutral & marshy grassland	OSWI
Peverstone Embankment	ST022052	1km south	Unimproved neutral grassland with scrub	OSWI
Maddock's Farm	ST052066	2km east	Mixed plantation with a pond	OSWI
Kentis Moor	ST062065	3km east	Secondary woodland	UWS

Aller Wood (West)	ST041064	1.3km south-east	Broadleaved woodland	UWS
Gardener's Covert	ST056094	3.3km north-east	Broadleaved woodland	UWS
East Culm House	ST032071	340m east	Pond with amphibian interest	UWS
Willand - Cullompton Marsh	ST027096	2km north	Possible floodplain grazing marsh	UWS
Sherwoods (E)	ST036053	1.4 south-east	Orchard	UWS
Cullompton - Hele Marsh	ST016045	within site boundary	Possible floodplain grazing marsh	UWS
Culmstock - Willand Marsh	ST067122	6km north-east	Possible floodplain grazing marsh	UWS
KNIGHTS WOOD	ST023054	1km south	Ancient & Semi-Natural Woodland	ASNW
No Name	ST044063	1.6km east	Ancient Replanted Woodland	PAWS
No Name	ST047065	1.7km east	Ancient Replanted Woodland	PAWS

4.2 Notable Species

4.2.1 Amphibians

- The site was located within the Mid Devon GCN *(Triturus cristatus)* consultation zone.
- Two records of GCN were submitted within the data search; this included a record from the fishing lakes **(P3)** 300m east of the site, another record was submitted from Cullompton Ponds 600m south of the site. Both records were submitted post 2014.
- Four records of common frog *(Rana temporaria)* were submitted within the data search, three records were submitted from a pond over 1km south-west of the site, one from Court Drive 1km north west of the site, and another from Higher Nursery Down 1km south-east.
- Two common toad *(Bufo bufo)* records were submitted in the search, one over 2km north of the site boundary and the other 1.6km south of the site boundary.

4.2.2 Birds

- Birds within the data search included swift *(Apus apus)*, common bullfinch *(Pyrrhula pyrrhula)*, house sparrow *(Passer domesticus)*, and mallard *(Anas platyrhynchos)*.
- Wildlife and Countryside Act (WCA) schedule 1 species included red kite *(Milvus milvus)*, barn owl *(Tyto alba)*, and kingfisher *(Alcedo atthis).*
- Three records of kingfisher *(Alcedo atthis)* were submitted within the site boundary.

4.2.3 Mammals (Excluding bats)

4.2.3.1 Badger

- There were 11 records of badger *(Meles meles)* submitted within the data search since the year 2000.
- 5 records were submitted from the M5 motorway which dissects the site from north to south.
- One record was submitted 900m south of the site, one from 1.17km west of the site, and two records over 2km east of the site.
- No records were submitted from within the site boundary.

4.2.3.2 Brown hare

- One record of brown hare *(Lepus europaeus)* was recorded over 2km north west of the survey site.

4.2.3.3 Otter

- Five records of Otter *(Lutra lutra)* were submitted within the data search.
- Four records were associated with the River Culm, within the site boundary.
- One record was submitted 800m west of the site, whilst the other records were over 1km from the site boundary.

4.2.3.4 Dormouse

- Three records were submitted within the data search.
- Two records were submitted from Middle lane adjacent to the north western section of the site, 2006.
- The other record was submitted over 2km east of the site boundary.
- Dormouse *(Muscardinus avellanarius)* were recorded by Ethos 2017, north of the Honiton Road, 700m east of the site.

4.2.3.5 Polecat

- One polecat *(Mustela putorius)* was recorded from the Plymtree area, 1.6km south-east in 2015.

4.2.3.6 Hedgehog

- Three records of hedgehog *(Erinaceus europaeus)* were submitted within the data search.
- Two records submitted in 2016 were recorded from gardens over 1km west of the site.
- The other record was submitted 400m west of the site in 2009.

4.2.4 Invertebrates

- Invertebrates recorded within the last ten years included cinnabar moth (*Tyria jacobaeae*), jersey tiger (*Euplagia quadripunctaria*), rosy rustic (*Hydraecia micacea*), and small square spot, (*Diarsia rubi*).
- No records of white-clawed crayfish (*Austropotamobius pallipes*) were returned within the data search.

4.2.5 Plants

- Plant species returned were predominantly invasive WCA schedule 9 species.
- This included twelve records of Japanese knotweed (*Fallopia japonica*), two of Himalayan Balsam *(Impatiens balsamina)*, rhododendron *(Rhododendron ponticum)*, and floating pennywort (*Hydrocotyle ranunculoides*).
- Records of Himalayan balsam and Japanese knotweed were both returned within the site boundary.

4.2.6 Bats

- Bat species returned within the 4 km search radius within the last ten years included: common pipistrelle *(Pipistrellus pipistrellus)*, brown long-eared bat *(Plecotus auritus)*, lesser horseshoe bat *(Rhinolophus hipposideros)*, soprano pipistrelle *(Pipistrellus pygmaeus)*, whiskered bat *(Myotis mystacinus),* noctule bat *(Nyctalus noctula)*, Daubenton's bat *(Myotis daubentonii)*, and Brandt's bat *(Myotis brandtii)*.
- One record of pipistrelle bat was recorded within the site boundary in 2014.

4.2.6.1 Pipistrelle Roosts

- Three records of pipistrelle roosts were returned within the last ten years.
- This included an occasional roost within a building, Cockpit Road, 300m west, in 2015.
- Twenty bats emerging from a structure, Old Hill Barn, 300m south of site, 2014.
- A day roost at Newlands Farm, 1.3km east of site, 2015.

4.2.6.2 Brown long-eared roosts

- Six brown long-eared roosts were returned within the past ten years.
- One was 300m west in Cockpit Hill; bats observed emerging from the structure.
- Two bats were observed emerging from a barn at Upton Lakes, 300m east.
- Three records from Newlands Farm were returned 1.3km east of the site in 2015.

4.2.6.3 Lesser horseshoe roosts

- Three roosts were returned within the data search.
- A transitional roost was returned from Upton Lakes, 300m east, 2013.

- A night roost was recorded from an agricultural building at Newlands Farm, 13km east, 2015.
- A single bat was recorded flying within a stable, Newlands farm, 1.3km east, 2013.

4.3 Granted EPS licenses

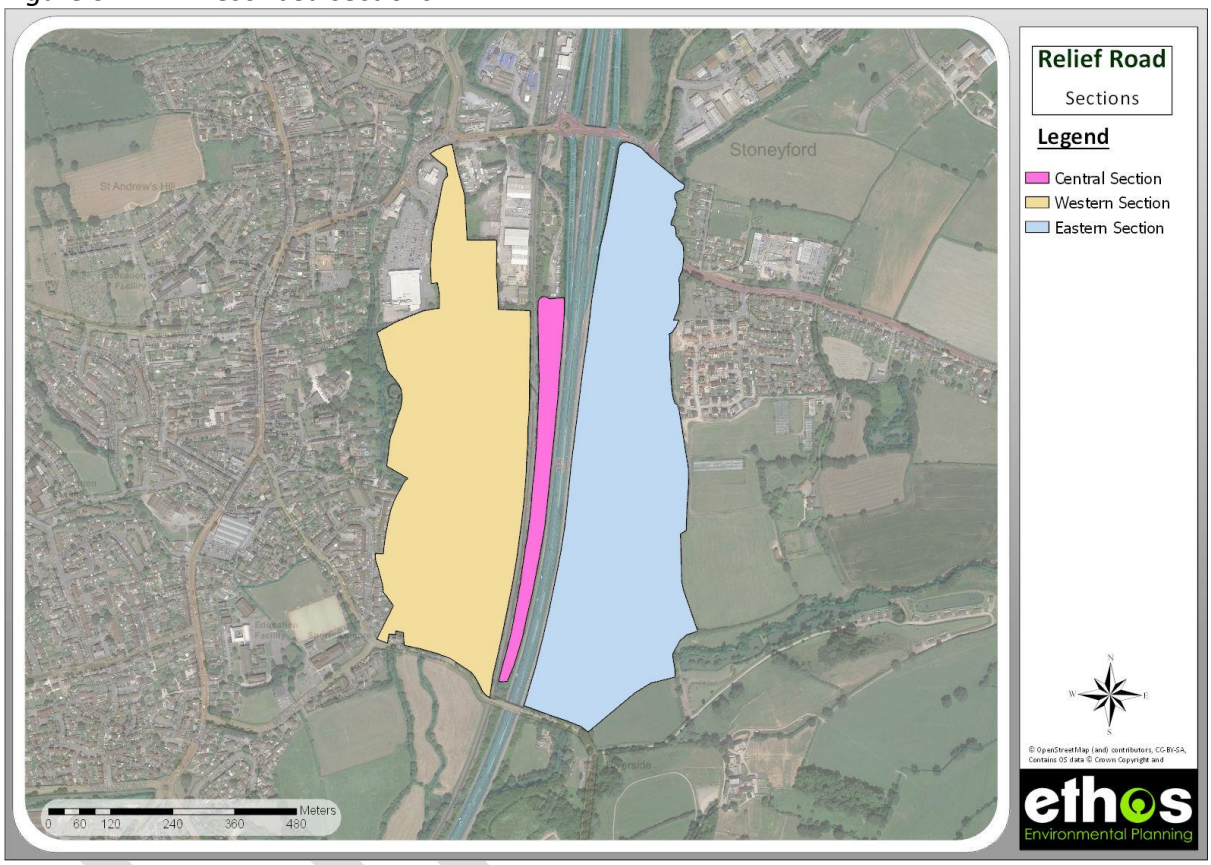
- Granted license for dormouse, 1.2km north-east, start date:2018
- Common pipistrelle and brown long-eared, 1.2km north-west, start date: 2011
- Brown long-eared and lesser horseshoe, 800m south east, start date:2014

5 PHASE 1 HABITAT SURVEY

5.1 General site description

The site consisted of three sections: the western section, central section, and eastern section. These sections are described below

Figure 5: Described sections



Western Section
The western section was dominated by grassland and contained the Cullompton Community Association fields sport grounds. The north of the western section was dominated by semi-improved grassland with sections of woodland, scrub, and hedgerow. The south was also dominated by grassland with sections of woodland and a small tributary which flows into the River Culm. The western section was bordered by residential properties to the west, industrial buildings to the north, and agricultural land to the south. The section was divided from the central section by the railway which ran from north to south.

Central section
The central section was a linear strip of grassland and scrub. The central section was bordered by a railway to the west, the M5 Motorway to the east, and commercial units to the north.

Eastern Section
The eastern section was dominated by permanent pasture which was cattle grazed. There was a woodland plantation to the north and several areas of scattered trees along the west

of the site. The River Culm ran through the site entering south of the plantation and then running through the centre of the section. The eastern section was bordered by the M5 to the west and agricultural land to the south, the south east of the site was adjacent to the Upton Lakes fishing lakes and an extensive area of woodland which extends over 1.7km south of the site boundary.

5.2 Habitat description

Figure 10 shows the key habitats using the Phase 1 habitat classifications. The key features described within this section are:

- Scattered Trees (A3.1)
- Broadleaved woodland plantation (A1.1.2)
- Broadleaved woodland semi-natural (A1.1.1)
- Buildings (J3.6)
- Cultivated disturbed land, amenity grassland (J1.2)
- Hardstanding (J5)
- Hedge with trees – native species rich (J2.3.1)
- Hedge with trees – species poor (J2.3.2)
- Neutral Grassland – semi-improved (B2.2)
- Poor semi-improved grassland (B6)
- Running water (G2)
- Standing water (G1)

Figure 6: Phase 1 Habitat Map

5.2.1 Scattered Trees

There were sections of scattered trees within the eastern section of the site. This habitat was located along the River Culm to the south. There was also a linear strip to the north of the eastern section. The habitat was dominated by willow *(Salix)* to the south whereas the habitat was comprised of trees such as blackthorn *(Prunus spinosa)*, apple *(Malus domestica)*, hawthorn *(Crataegus monogyna)*, and oak *(Quercus spp.)* to the north. The understorey was dominated by grasses with some patches of brambles to the north of the site.

Photo 1: willow along the River Culm

Photo 2: Scattered tree – eastern section

5.2.2 Broadleaved Woodland Plantation

The plantation was located to the north of the eastern section of the site. The plantation was dominated by white poplar *(Populus alba)*. Other species included field maple *(Acer campestre)*, sycamore *(Acer pseudoplatanus)*, hawthorn *(Crataegus monogyna)*, willow *(Salix)*, and English oak *(Quercus robur)*. The woodland had a good vegetative understorey comprised of bramble *(Rubus fruticosus)*, common nettle *(Urtica dioica)*, curly dock (*Rumex crispus*), tansy (*Tanacetum vulgare*), ox eye daisy (*Leucanthemum vulgare*), St John's wort (*Hypericum perforatum*). The northern section of the site also contained buddleia (*Buddleia davidii*), and Himalayan balsam (*Impatiens balsamina*).

Photo 3: Woodland plantation

5.2.3 Broadleaved Woodland semi-natural

Much of the woodland on site was located within the western section. This included several woodland copses. A copse to the south of the site contained species such as ash *(Fraxinus excelsior)*, hazel *(Corylus avellana)*, and crack willow *(Salix)*. The woodlands understorey was comprised of common nettle and hemlock, (*Conium maculatum*).

Another coppice located to the north of the western section was dominated by ash with field maple, elder *(Sambucus nigra)*, hawthorn, English elm *(Ulmus procera)*, and hazel. There were multiple trees with bat root potential within the woodland further discussed within section 7.4 of this report.

Photo 4: Woodland copse

Photo 5: Ash within copse

5.2.4 Buildings

There were several structures within the western section of the site. These are described in further detail within section 6.4.2

Photo 6: Corrugated tin shed

Photo 7: Building located at sport ground

5.2.5 Cultivated disturbed land, amenity grassland

The western section of the site was dominated by intensively managed, short sward amenity grassland consisting of play areas and sports fields. The habitat was assessed to hold low botanical diversity and low value for protected species. Species included: perennial rye grass

(*Lolium perenne*), creeping buttercup (*Ranunculus repens*), broad-leaved plantain (*Plantago major*), sheep fescue (*Festuca ovina*), meadow foxtail (*Alopecurus pratensis*), and cock's foot (*Dactylis glomerata*).

Photo 8: Sports ground

Photo 9: Amenity grassland

5.2.6 Hardstanding

Hard standing comprised of concrete was located adjacent to the structures in the western section of the site. There was also an access road to the west and a path which led to the north west of the site. The hardstanding was in a good structural condition with low/negligible potential for wildlife.

Photo 10: Hardstanding

5.2.7 Neutral Grassland – semi-improved

Eastern section

The eastern section of the site was dominated by semi-improved grassland. The grassland was grazed by cattle and was dominated by grasses. Species included: perennial rye, Yorkshire fog *(Holcus lanatus)*, yarrow *(Achillea millefolium)*, crested-dogs tail, (*Cynosurus cristatus*), common brome (*Bromus*), cock's foot, silver-weed, (*Argentina anserine*) and bird's-foot trefoil (*Lotus corniculatus).* There were also extensive stands of creeping thistle *(Cirsium arvense)* present to the south of the site.

Photo 11: Grazed grassland

Photo 12: Grassland with low sward height

Central Section

The grassland within the central section was cattle grazed with some herbaceous rich sections. The species consisted of perennial rye grass, Yorkshire fog, cock's foot, creeping thistle, white clover *(Trifolium spp.)*, broad-leaved dock *(Rumex obtusifolius)*, timothy *(Phleum pratense)*, creeping buttercup, red fescue *(Festuca rubra)*, lesser stitchwort (*Stellaria graminea*), bird's-foot trefoil, yarrow, black medic (*Medicago lupulina*), and Himalayan balsam.

Photo 13: Central section

Photo 14: Creeping thistle

Western Section

There were several areas of semi-improved grassland present to the west of the site. These sections were located within the north and west of the western section.

These areas were cattle grazed and were cut for hay. Several of the areas were cut by the time of the survey. A section to the north was not cut at the time of the survey with a subsequent increased sward height. However, the grassland was dominated by grasses and was assessed to have low/moderate botanical diversity.

Species included Yorkshire fog, creeping thistle, common ragwort *(Senecio jacobaea)*, creeping buttercup, perennial rye grass, broad-leaved plantain, meadow foxtail, cock's foot, and false oat *(Avena sativa)* at the boundaries of the site. Patches of yellow rattle *(Rhinanthus minor)* were also identified.

Photo 15: Semi-improved grassland

Photo 16: Unmanaged section in north

5.2.8 Poor semi-improved

A section of poor semi-improved grassland was located at the west of the site. Species included false oat grass, common nettle, greater willowherb *(Epilobium spp.)*, creeping thistle, silverweed, broad-leaved dock, and hedge bindweed *(Calystegia sepium)*. Several trees were included within the grassland including ash *(Fraxinus excelsior)* and sycamore *(Acer pseudoplatanus)*.

Photo 17: Poor semi-improved

Photo 18: Grassland sward

5.2.9 Running Water

Western Section

A tributary of the river Culm traverses the west boundary and south-western section of the site. Features of the stream included a weir which runs under a house and a small island which contained species such as rushes *(Juncaceae spp.)* and pendulous sedge (*Carex pendula).* The stream was predominantly natural with banks comprised of ruderal vegetation and trees. However, some sections such as the weir and bridge were man made, constructed of stone and brick, with fewer natural features.

Photo 19: Tributary of the River Culm

Photo 20: Western section

Eastern Section

The River Culm ran through the eastern section of the site from the north to the south. A small stream also fed into the river from the woodland plantation to the north and another stream entered the river to the south. There was also a running ditch that ran to the west of the northern section which ran adjacent to the motorway. The River Culm had large banks and was bordered by cattle grazed semi-improved grassland. There were several small islands within the river comprised of scrub, rushes, and some mature trees (See photo 22). The river was bordered by trees in the south, dominated by willow *(Salix)*. Vegetation along the river banks included burdock (*Arctium lappa*), mugwort (*Artemisia vulgaris*), bramble, willowherb, hazel, elder, alder *(Alnus glutinosa)*, purple loosestrife *(Lythrum salicaria),* and Himalayan balsam.

Photo 21: River Culm with heavily grazed banks

Photo 22: Island within river

5.2.10 Standing Water

A pond was located within Western Hedgerow 6 (WH6) (Figure 12) within the western section of the site. The pond was dry at the time of the survey.

There were multiple ponds east of the site boundary discussed further within the protected species results (section 7.7)

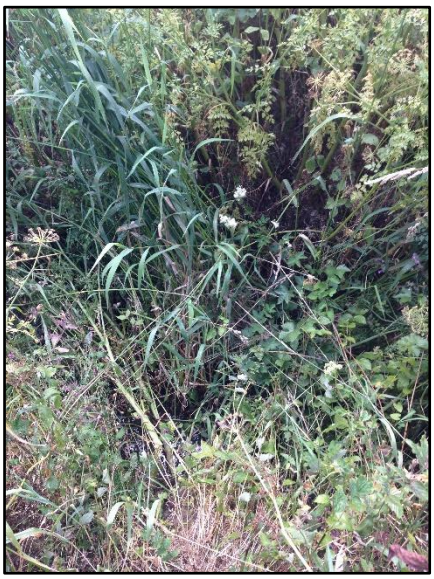


Photo 23: Dried pond P1

5.3 Hedgerows

There were multiple hedgerows on site. These were described in western (W), central (C), and eastern (E) sections, given below:

Figure 7: Hedgerow map

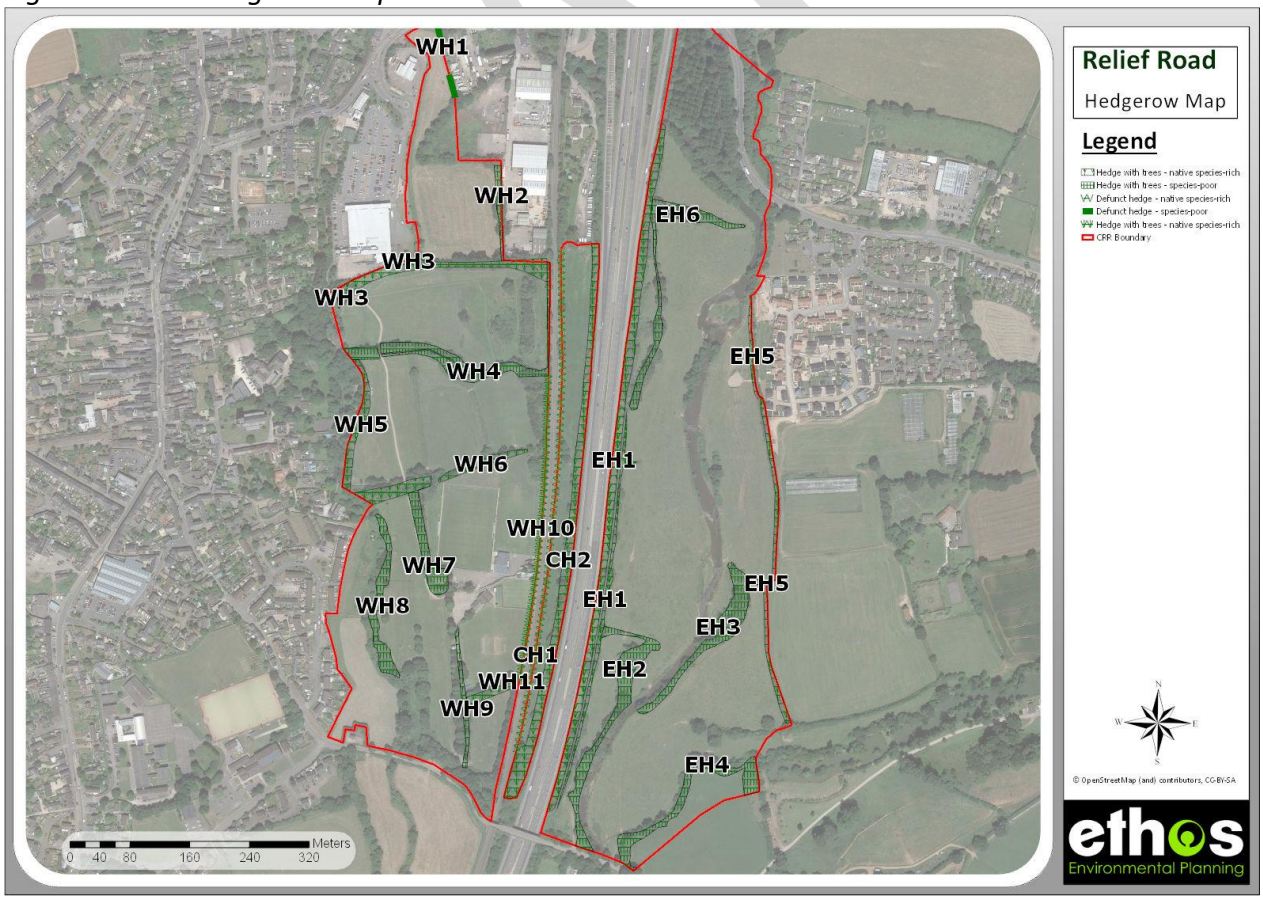
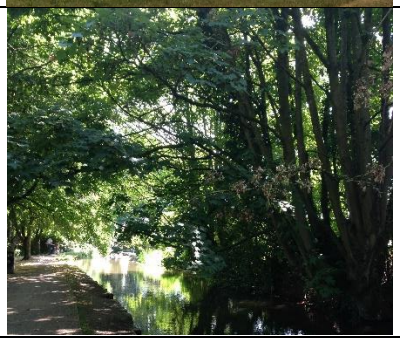


Table 5: Summaries of hedgerows within western section

Hedgerow Number	Classification	Description	Photo
WH1	Defunct species poor	Hedgerow dominated by hawthorn with ash, hazel, elder, bramble, and honeysuckle. Understorey comprised of nettle, hemlock, and creeping thistle.	
WH2	Hedge with trees species-poor	Located on the north-eastern boundary. Species included: elm, privet, oak, bramble, and nettle.	
WH3	Hedge with trees species-rich	Forms a copse which runs from west to east across the western section of the site. Contains silver birch, rowan, ash, and beach.	
WH4	Hedge with trees species-poor	Forms and woodland belt with a dry ditch. Species included crack willow, alder buckthorn, sweet chestnut and sycamore	
WH5	Hedge with trees species-rich	Borders path to the west of the site. Species included ash, sycamore, oak, hawthorn, and willow	

WH6	Hedge with trees species-rich	Trees with a grassland understorey. Borders football pitch and has a dry ditch to the north. Species included willow, sweet chestnut, Douglas fir, sycamore, field maple, and hawthorn.	
WH7	Hedge with trees species-poor	A row of mature trees including ash, oak, field maple, and conifer	No picture available
WH8	Hedge with trees species-poor	A small hedgerow belt. Species included ash, crack willow, and sycamore. Understorey included brambles, cleavers, and greater willow herb	
WH9	Hedge with trees species-poor	Planted avenue of trees which line the road into the site. Included species such as horse chestnut, oak, and copper beach.	
WH10	Hedge with trees species-rich	Hedgerow WH10 forms the eastern boundary of the western section of the site. Species included ash, oak, hawthorn, hazel, elder, and blackthorn.	No picture available
WH11	Hedge with trees species-rich	Hedgerow adjoined WH10 and WH9 with a similar species composition.	

Table 6:Summary of hedgerows within Central section

Hedgerow Number	Classification	Description	Photo
CH1	Defunct species rich with trees	Formed the western boundary of the central section. Species included, hawthorn, oak, ash, sycamore, and hazel. Herbaceous species bordering the hedgerow included, greater willow herb, hemp agrimony, horsetail, bramble, tufted vetch, purple loosestrife, teasel, campion, and Himalayan balsam	
CH2	Hedge with trees species-rich	Located on the eastern boundary of the central section. Species included ash, hazel, laurel, blackthorn, hawthorn, oak, alder, and goat willow. Herbaceous species included bittersweet nightshade, hedge woundwort, hemp agrimony, and bramble	

Table 7:Summary of hedgerows within Eastern section

Hedgerow Number	Classification	Description	Photo
EH1	Defunct species poor	A double hedge formed of mature trees dominated by willow. A dry ditch was also present in the hedgerow. The hedgerow bordered the motorway to the west of the eastern section	
EH2	Hedge with trees species-poor	Hedgerow dominated by willow and ash. The hedgerow contained several trees with bat roost potential and a tree with a wild honey bee nest	
EH3	Hedge with trees species-rich	Mature trees with limited understorey. Species included oak, alder, sycamore, holly, wytch elm, hawthorn, and ash.	
EH4	Hedge with trees species-poor	Hedgerow with ditch. Species included willow	
EH5	Hedge with trees species-poor	Hedgerow dominated by hawthorn which was under hard browsing pressure resulting in a leggy hedgerow with no understorey. Species included hawthorn	

6 RESULTS FOR PROTECTED SPECIES

6.0 NERC S. 41 Mammals

6.0.1.1 Harvest mouse

There were no records of harvest mouse *(Micromys minutus)* within the background data search. The surrounding area was dominated by permanent pasture which was grazed with very little herbaceous rich margins suitable for harvest mouse. The habitats on site which may have provided habitat for harvest mouse included the fields in the north of the western section. No nests or field signs were identified during the initial site survey. Harvest mice were considered likely absent from the site.

6.0.1.2 Hedgehog

There were multiple records of hedgehog *(Erinaceus europaeus)* within the data search; these were submitted from the west of the site boundary in the town of Cullompton. The habitats on site were dominated by grazed grassland which was assessed as being unsuitable for hedgehogs. It was assessed that the boundary features and woodland within the western section of the site would provide good habitat for hedgehogs. The western section of the site also connects to woodland and the semi-urban environment of Cullompton which may provide an ecological corridor for hedgehogs. No nests, field signs, or live specimens were identified on site.

6.0.1.3 Polecat

One record of polecat *(Mustela putorius)* was returned within the background data search. The record was submitted over 1km east of the site boundary. The habitats were assessed to provide good habitat for polecat with a mosaic of field and hedgerows. There were also old agricultural structures located offsite, north of the central section which may provide shelter for polecat. There were no field signs or evidence of polecats found on site.

6.0.1.4 Brown hare

One record of brown hare *(Lepus europaeus)* was submitted within the data search. However, the record was over 2km east of the site boundary. The habitats on site were dominated by permanent pasture which was grazed intensively providing poor habitat for hares. There was no arable habitat on site for favoured by hares. Also, no hares were identified on site which included no evidence of couches or of live specimens.

6.1 Badger

There were eleven records of badgers within the data search. These included several records from the M5 Motorway to the north of the site. The habitats on site were assessed to provide good habitat for badgers with a mosaic of fields, woodland, and hedgerows. There were several runs identified within the western section of the site. No setts, latrines, or live specimens were identified on site.

6.2 Dormouse

There were multiple records of dormouse returned within the data search including two records from Middle Lane in the western section of the site WH3 **(figure 11)**. There were also records to the east of the site including previous records submitted by Ethos (12 and 13) **(Figure 12)**.

The habitats on site were assessed to provide optimal habitat for dormouse with diverse mature hedgerows, young broadleaved plantation, scrub habitat, and good ecological connectivity.

Nests and dormouse were recorded during the September and October surveys. These included a range of nests and dormice of different life stages; given below:

Figure 8: Dormouse records on site

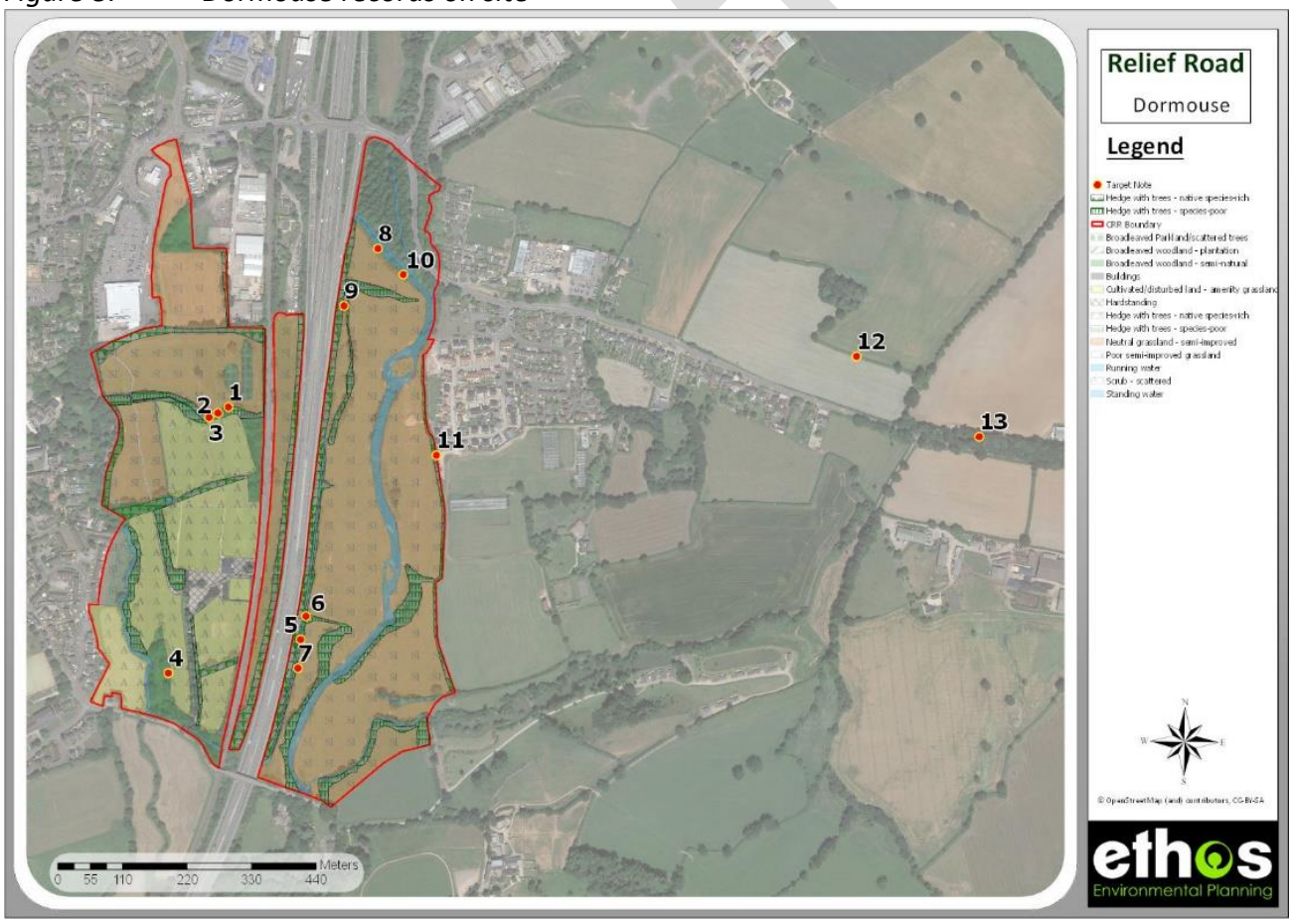


Table 8: Dormouse records

Label	Target Note	Date
1	Dormouse nest	26/09/2018
2	3 Dormouse in tube	26/09/2018
3	3 Dormouse in tube	10/10/2018
4	Dormouse nest	10/10/2018
5	2 Dormouse in tube	10/10/2018
6	1 Dormouse in tube	10/10/2018
7	Dormouse nest (woven, fresh leaves)	26/09/2018
8	Dormouse nest	10/10/2018
9	Dormouse nest	10/10/2018
10	Dormouse nest	10/10/2018
11	1 Dormouse in tube	26/09/2018
12	4 Dormouse in tube	26/09/2017
13	1 Dormouse	01/08/2017

Photo 24: Label 7 dormouse nest

Photo 25: Label 3 juvenile dormouse

Photo 26: Label 10 dormouse nest

Photo 27: Label 4 dormouse nest

6.3 Riparian Mammals

6.3.1 Otter

The data search returned four records of otter *(Lutra lutra)* within the data search. This included two records in the eastern section and two records within the west, one just north of the boundary. The River Culm was assessed to provide optimal habitat for otter with abundant prey for otters. There were several wet ditches on site as well as a culvert which connects the east of the site to the west. The habitats were assessed to have good terrestrial and riparian connectivity.

One spraint was identified during a systematic search of the river bank; the spraint was small and washed away. No further evidence of otter was identified on site.

Figure 9: Otter records

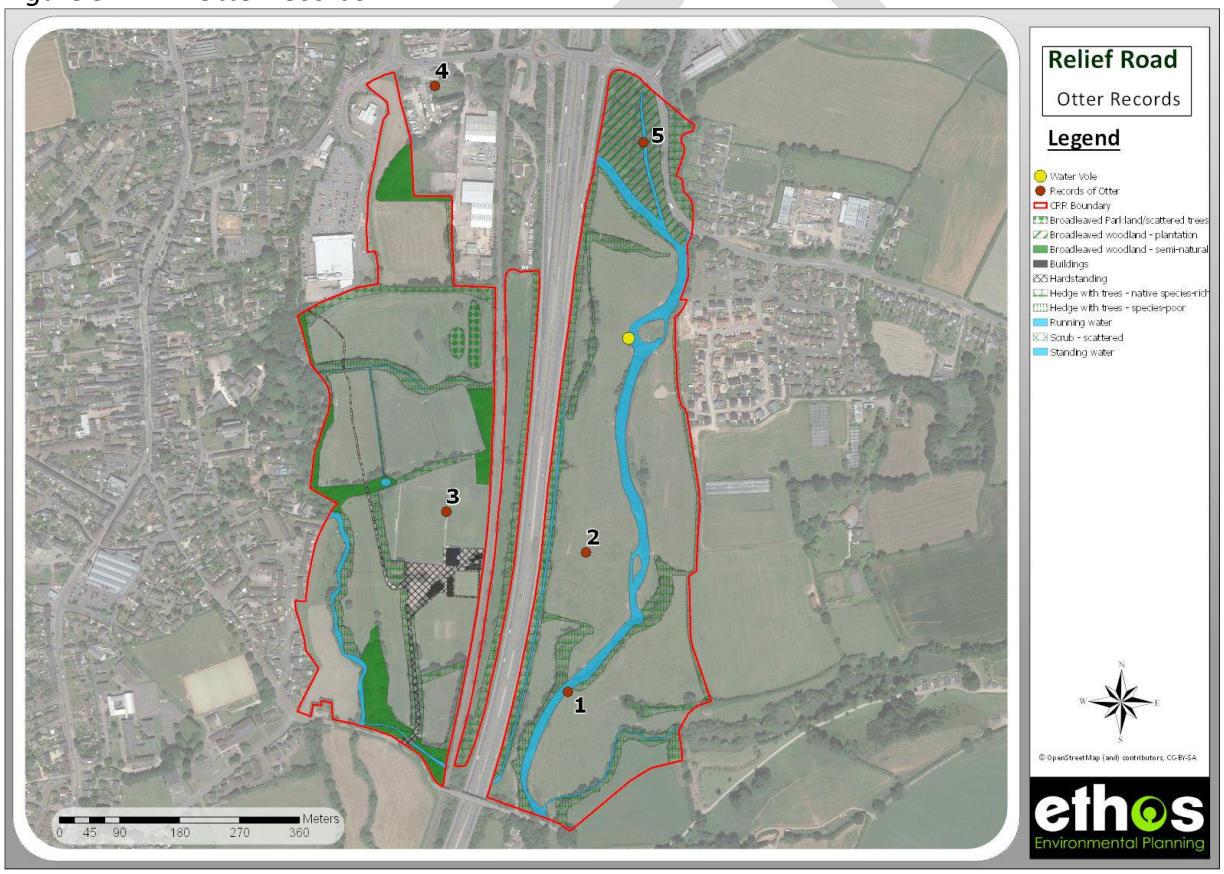


Table 9: Otter records within the site boundary

Label	Evidence	Date
1	Potential otter spraint	09/07/2018
2	Environmental Record	2004
3	Environmental Record	2009
4	Environmental Record	2011
5	Environmental Record	2016

6.3.2 Water vole

There were no records of water vole *(Arvicola amphibius)* within the data search. The banks of the river were grazed intensively; resulting in a low grassland sward with low botanical diversity. Subsequently, there was minimal food source or shelter available for water voles.

Suitable vegetation for water voles included sections within the centre of the river and within the plantation to the north.

A network of water vole burrows was identified on the banks of the River Culm (See figure 13). The tunnels were approximately 1m above the current water levels and certain sections of tunnel were collapsed due to compaction from livestock. The aforementioned factors provided an assessment that the burrows were disused.

No other evidence was recorded on site such as feeding remains or droppings.

Photo 28: Water vole tunnel in grassland next to river bank

Photo 29: Disused hole

6.4 Bats

6.4.1 Habitats

The habitats on site were assessed as being good for bats with young broadleaved plantation, well connected hedgerows with trees, copses, and abundant riparian habitat on site. The surrounding area such as the fishing lakes adjacent to the south-east of the site was assessed to provide optimal habitat for bats.

6.4.2 Structures

There were multiple structures on site including sports buildings in the western section of the site and a bridge which crosses the River Culm to the south-east of the site.

Figure 10: Structures and trees with roosting potential

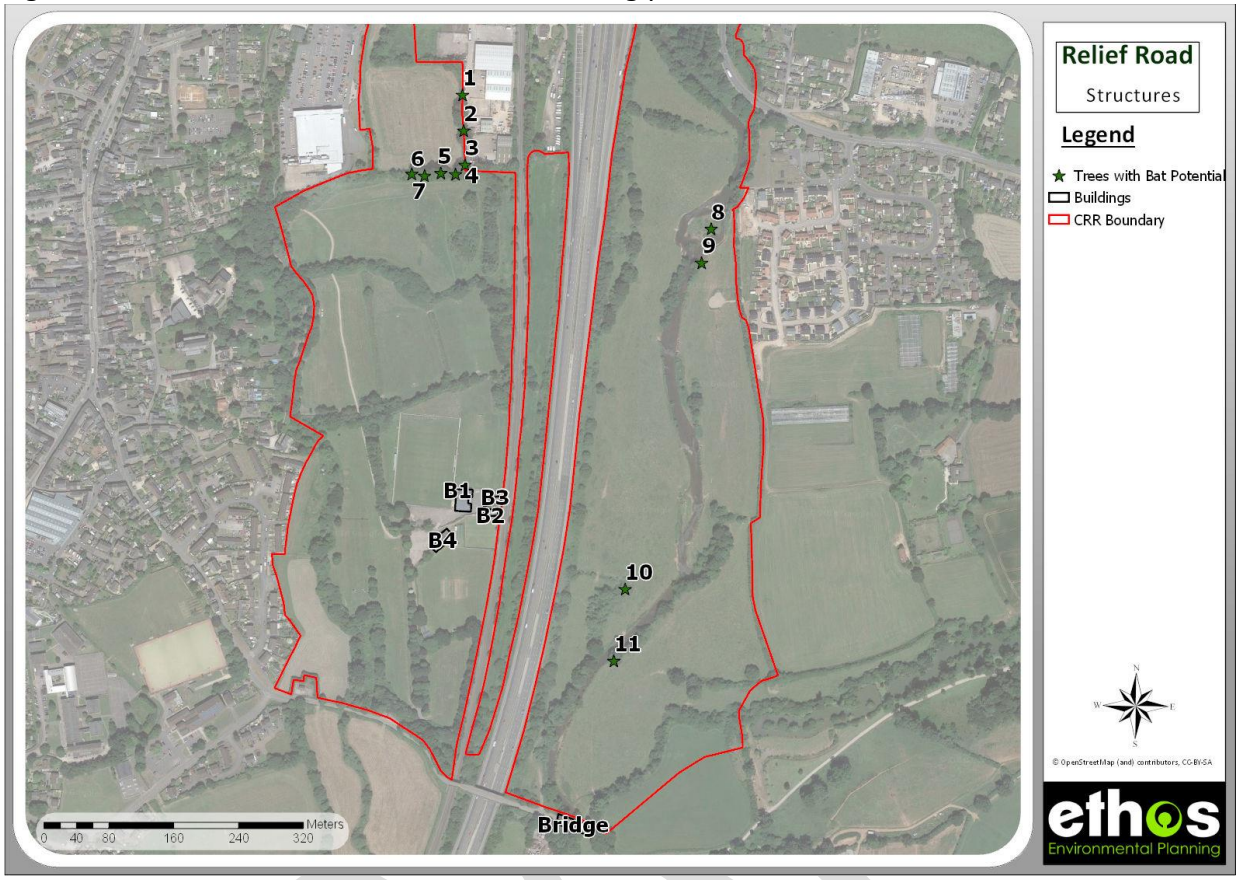


Table 10: Structures on site

Building Number	Description	Bat Potential	Photo
1	Brick-construction rendered with flat felt roof. PVC fittings all tight with no access for bats. Sky lights to rear of the structure. High-light levels from nearby floodlighting No evidence of bats recorded during assessment.	***Negligible potential***	
2	Brick construction with pitched over hanging roof with interlocking composite tiles and hanging tiles on northern elevation. Good structural condition with no access points or evidence of bats identified.	***Low potential***	
3 and 4	Sports buildings constructed of corrugated metal. No vegetation present around structure and high levels of	***Negligible Potential***	No picture available

	light from nearby flood lighting.		
Bridge	The bridge crosses the River Culm to the south of the eastern section of the site. The bridge was in a good structural condition however, there were some gaps within the brick work	***Moderate Potential***	

6.4.3 Trees with Roots Potential

Table 11: Trees with bat potential

Tree Number	Species/PRFs	Potential	Photo
1 - 3	Oak/Multiple PRF's	***low***	
4 - 7	Beech, ash, and sycamore	***Low potential***	No picture available
8	Ash/Could not identify PRF's	***Low Potential***	
9	Oak/ Damaged limbs	***Low potential***	
10	Alder/ Hollow Trunk	***Moderate potential***	

11	Ash/ Dead and hollow at base	**Moderate potential**		

6.4.4 Activity

6.4.4.1 Variables

Table 12: Variable for activity surveys

	10/07/2018 **Sunset: 21:25**		23/08/2018 **Sunset: 20:16**		27/09/2017 **Sunset: 18:57**	
Variable	**Start**	**End**	**Start**	**End**	**Start**	**End**
Time	21:26	23:40	21:19	23:19	19:00	20:45
Temperature (°C)	18	17	16	14	23	16
Relative Humidity (%)	72	80	64	72	71	74
Cloud cover (oktas)	0	1	8	8	8	4
Precipitation	None	None	None	None	None	None
Average wind speed (mps)	5	3	5	7	2.3	4.5

6.4.4.2 10th July 2018

Western section

- 21:54 common pipistrelle foraging along avenue of trees WH9
- 22:00 noctule recorded near football pitch; heard not seen
- 22:02 common pipistrelle recorded north of football pitch; heard not seen
- 22:05 pipistrelle bat recorded foraging around mature oak within hedgerow WH6
- 22:06 pipistrelle bats recorded dispersing along tree avenue, WH9
- 22:14 pipistrelle and noctule recorded foraging along stream; west of the site
- 22:27 common pipistrelle foraging along WH2
- 22:44 noctule foraging along railway
- 23:24 common pipistrelle recorded in the centre of the site
- 23:33 pipistrelle bats foraging along avenue WH9

Central Section

- 21:45 common pipistrelle bat recorded on northern boundary of the site
- 21:50 pipistrelle bats dispersing along western hedgerow CH2

Eastern Section

- 21:52 four soprano pipistrelle foraging; south-west
- 21:56 myotis foraging; EH2
- 21:59 common and soprano pipistrelles foraging; south-west
- 22:00 Daubenton's foraging over river

- 22:02 Noctule foraging recorded for over ten minutes; centre of site over River Culm
- 22:16 myotis heard not seen; island in River Culm
- 22:20 soprano pipistrelle heard not seen; EH6
- 22:22 soprano pipistrelle heard not seen; EH6
- 22:29 soprano pipistrelle heard not seen; south-west EH1
- 22:34 soprano pipistrelle heard not seen; south-west
- 22:39 soprano pipistrelle heard not seen; south of site
- 22:39 soprano pipistrelle heard not seen; south of site
- 22:42 common pipistrelle and soprano heard not seen; east of site EH5
- 22:52 Serotine foraging over site until 22:55; east of EH3
- 23:13 Daubenton's foraging over river; River Culm south of island
- 23:16 myotis and common pipistrelle heard not seen; River Culm south of island

Summary

- Species included common pipistrelle *(Pipistrellus pipistrellus)*, soprano pipistrelle *(Pipistrellus pygmaeus)*, Daubenton's bat *(Myotis daubentonii)*, noctule bat *(Nyctalus noctula)*, and serotine *(Eptesicus serotinus)*.
- Activity was dominated by pipistrelle species
- Noctule were recorded over the whole site
- Serotine and Daubenton's bats were recorded on the eastern section of the site
- Activity was focused on the hedgerows on the western section and the River Culm to the east.

6.4.4.3 23rd August 2018

Western Section

- 20:41 soprano pipistrelle foraging to the south-east of the site
- 20:59 serotine and natterer's bat recorded in the north-west of the site

Central Section

- No bats recorded

Eastern Section

- Constant foraging activity along the River Culm, including soprano pipistrelle, Daubenton's, and common pipistrelle
- No activity along hedgerows
- Increased noise pollution on western hedgerow may disturb bats

Summary

- Species included soprano pipistrelle, Daubenton's Natterer's bat *(Myotis nattereri)*, and serotine
- Low activity levels across the site
- Activity focused on the River Culm within the eastern section of the site

6.4.4.4 27th September 2018

Western Section

- 19:17 soprano pipistrelle foraging around oak trees WH4
- 19:19 soprano pipistrelle foraging along avenue WH8
- 19:23 soprano pipistrelle foraging WH7
- 19:27 soprano pipistrelle foraging along stream WH8
- 19:28 soprano pipistrelle commuting east to west along hedgerow WH3
- 19:29 common pipistrelle heard not seen; north of site
- 19:41 myotis heard not seen; south-west of site

Central section

- No bats recorded

Eastern section

- 19:32 soprano pipistrelle commuting along eastern boundary
- 19:42 lesser horseshoe commuting along south-eastern boundary WH11

Summary

- Species included common pipistrelle, Soprano pipistrelle, Daubenton's bat, and lesser horseshoe bat *(Rhinolophus hipposideros)*.
- Lesser horseshoe bats were recorded dispersing on the eastern hedgerow EH5
- Activity within the western section was focused on the internal hedgerows and the stream

Figure 11: Overall bat activity from the three activity surveys

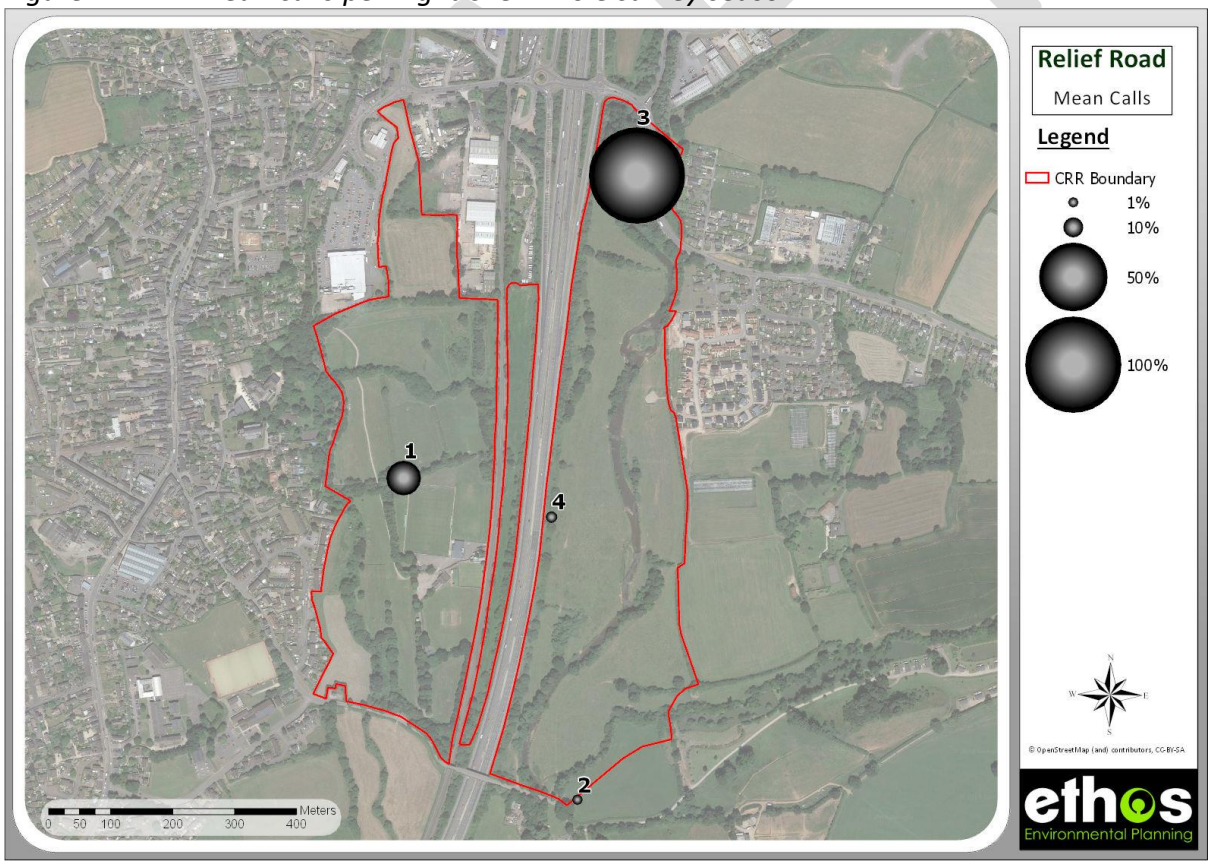
6.4.4.5 Overall Activity Summary

- Species included common pipistrelle, soprano pipistrelle, serotine bat, Natterer's bat, Daubenton's bat, noctule bat, and lesser horseshoe bats
- Activity was focussed on the internal hedgerows within the western section and the River Culm
- High levels of activity were identified on hedgerow WH4
- Lesser horseshoes were recorded commuting along the eastern hedgerow EH5 during the September survey
- Activity was low within the central section with low levels of bat activity on the northern boundary.

6.4.5 Static Survey

Static surveys were undertaken between July and September; detailed below. Bat activity levels were calculated as low < 100 calls per night; medium < 500 calls per night; and high > than 500 calls per night.

Figure 12: Mean calls per night over whole survey season



Summary

- Eight species were recorded during the static surveys including common pipistrelle *(Pipistrellus pipistrellus)*, soprano pipistrelle *(Pipistrellus pygmaeus)*, noctule bat *(Nyctalus noctula)*, Leisler's bat *(Nyctalus leisleri)*, Daubenton's bat *(Myotis daubentonii)*, brown long-eared bat *(Plecotus auritus)*, lesser horseshoe bat *(Rhinolophus hipposideros)*, and greater horseshoe bat *(Rhinolophus ferrumequinum)*.
- There was a total of 6066 bat echolocation calls over 54 survey nights.
- Static one had medium levels of bat recording with 134.9 mean calls per night and 37% of the total recordings
- Static two recorded low levels of activity with only 80 calls over six survey nights
- 53% of the total bat calls were recorded from static three with over 3261 calls over a seven-night period
- Static four had low levels of bat activity with only 18.9 mean calls of bats per night
- Static four had the greatest species richness with eight species of bat recorded
- Four greater horseshoe bats and one lesser horseshoe were recorded on SM4 4 30th Aug

Table 13: SM4 1 deployed 10th – 27th July

Bat Species	No. recordings	Records / night	First recording	Mean
Common pipistrelle	2001	125.06	21:33:37	118.40
Soprano pipistrelle	138	8.63	21:31:34	8.50
Noctule	127	7.94	20:54:39	7.94
Leisler's	1	0.06	22:39:29	0.06

	Deployed	Collected	
Dates:	10/07/2018	26/07/2018	
Activity:	2267 records / 16 nights		Medium activity levels

Table 14: SM4 2 deployed 23rd – 30th Aug

Bat Species	No. recordings	Records / night	First recording	Mean
Common pipistrelle	1	0.17	20:52:57	0.17
Soprano pipistrelle	75	12.50	20:15:18	6.00
Noctule	3	0.50	20:36:19	0.33
Daubenton's	1	0.17	21:09:27	0.00

	Deployed	Collected	
Dates:	23/08/2018	30/08/2018	
Activity:	80 records / 6 nights		Low activity levels

Table 15: SM4 3 deployed 23rd – 30th Aug

Bat Species	No. recordings	Records / night	First recording	Mean
Common pipistrelle	305	43.57	20:12:22	50.33
Soprano pipistrelle	2888	412.57	20:04:45	412.00
Noctule	55	7.86	20:19:16	7.86
Leisler's	6	0.86	20:26:47	0.86
Daubenton's	7	1.00	21:02:59	0.00

	Deployed	Collected	
Dates:	23/08/2018	30/08/2018	
Activity:	3261 records / 7 nights		Medium activity levels

Table 16: SM4 4 deployed 30th Aug – 24th Sept

Bat Species	No. recordings	Records / night	First recording	Mean
Common pipistrelle	43	1.72	19:47:49	1.67
Soprano pipistrelle	134	5.36	19:41:45	5.36
Noctule	221	8.84	19:14:33	8.84
Leisler's	51	2.04	18:59:42	2.04
Daubenton's	2	0.08	21:09:31	0.00
Brown long-eared	2	0.08	21:55:25	0.08
Lesser Horseshoe	1	0.04	21:54:21	0.04
Greater Horseshoe	4	0.16	00:28:17	0.16

	Deployed	Collected	
Dates:	30/08/2018	24/09/2018	
Activity:	458 records / 25 nights		Low activity levels

6.4.6 Advanced bat surveys

Appendix 1 provides the results of the advanced bat surveys. Figures 14 and 15 shows where bats were trapped and where the roosts were tracked. Figure 13 below shows the species of bat trapped:

Figure 13 Species proportions of the trapping surveys June, July August and September 2018

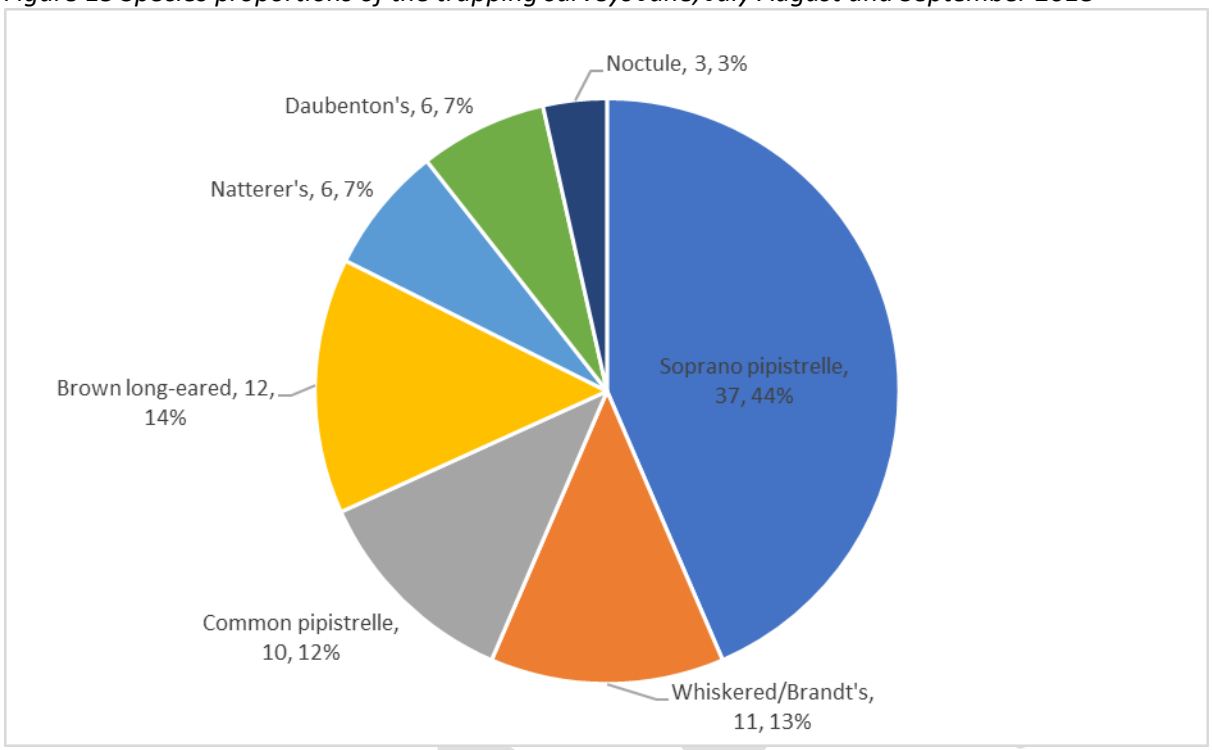


Figure 14 Bat trapping locations

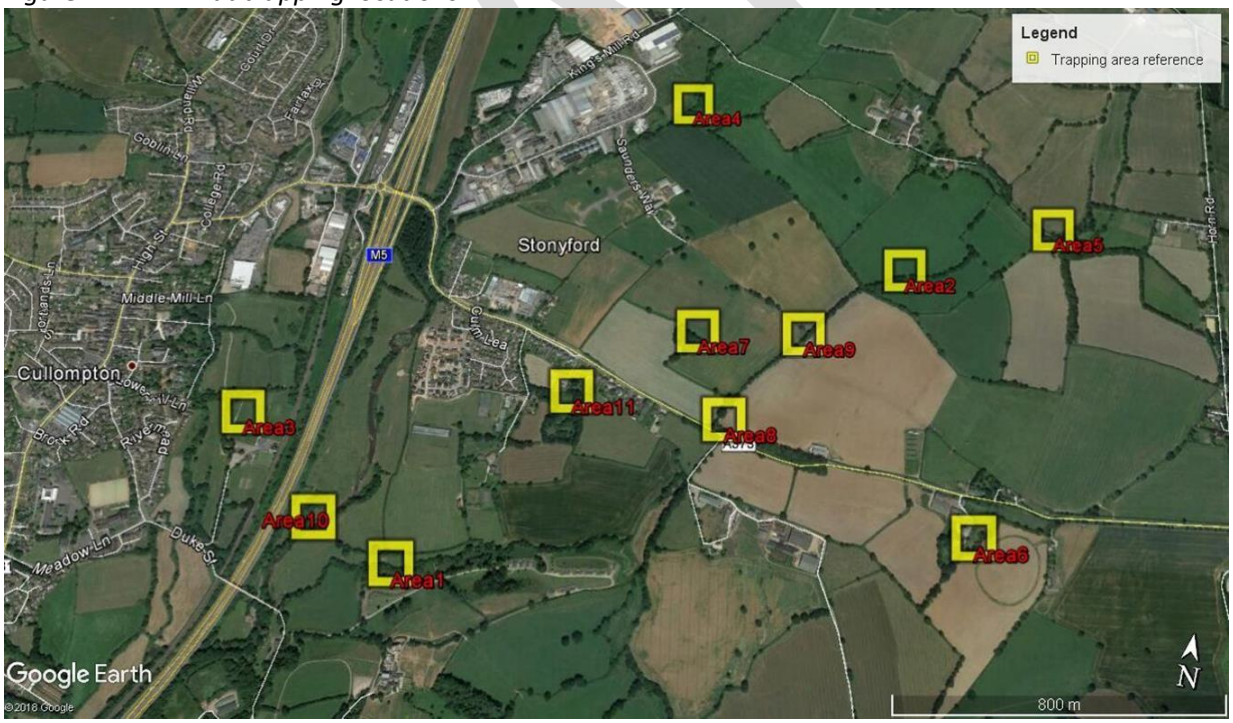
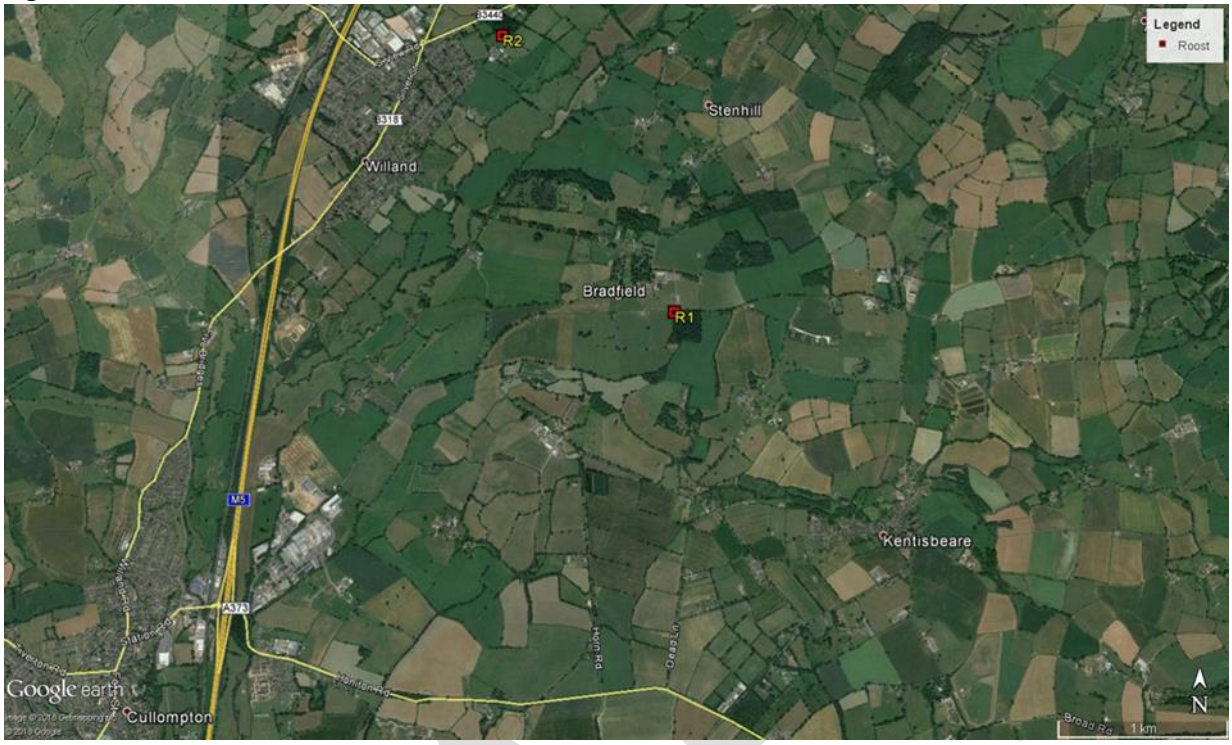


Figure 15 Bat roost locations



6.5 Birds

There were low numbers of birds returned within the data search. WCA schedule 1 species included within the data search included barn owl, red kite, and kingfisher.

The habitats on site were assessed to provide a range of habitats for birds on site. This included hedgerows which provided nesting and feeding habitat for birds, abundant riparian habitat, and farmland habitat which provided potential for ground nesting birds.

Exposed river banks provided suitable habitat for kingfisher. Nesting material was identified within a hole in a bank and kingfishers were recorded foraging along the River Culm during site surveys.

Table 17: Birds recorded on site

Common Name	Scientific Name	NERC S. 41	W&CA (1981)
wood pigeon	*Columba palumbus*	-	-
pied wagtail	*Motacilla alba*	-	-
magpie	*Pica pica*	-	-
wren	*Troglodytes troglodytes*	-	-
blackcap	*Sylvia atricapilla*	-	-
bullfinch	*Pyrrhula pyrrhula*	-	-
herring gull	*Larus argentatus*	*Global concern*	-
buzzard	*Buteo buteo*	-	-

goldfinch	*Carduelis carduelis*	-	-
house sparrow	*Passer domesticus*	*European concern*	-
robin	*Erithacus rubecula*	-	-
dunnock	*Prunella modularis*	-	*European concern*
blackbird	*Turdus merula*	-	-
blue tit	*Cyanistes caeruleus*	-	-
great tit	*Parus major*	-	-
coal tit	*Periparus ater*	-	-
Swallow	*Hirundo rustica*	-	-
great Spotted Woodpecker	*Dendrocopos major*	-	-
song Thrush	*Turdus philomelos*	*Global concern*	-
carrion crow	*Corvus corone*	-	-
swift	*Apus apus*	-	-
greenfinch	*Chloris chloris*	-	-
little egret	*Egretta garzetta*	-	-
kingfisher	*Alcedo atthis*	-	*Schedule 1*
moorhen	*Gallinula chloropus*	-	-
grey wagtail	*Motacilla cinerea*	-	-
whitethroat	*Sylvia communis*	-	-
chiffchaff	*Phylloscopus collybita*	-	-

Photo 30: Suitable kingfisher habitat

Photo 31: Bird nesting material in disused hole

Photo 32: Swallow nest in willow tree

6.6 Reptiles

The habitats on site were dominated by grassland which was intensively grazed with a short sward and low botanical diversity. Suitable habitats included the western boundary of the eastern section, the hedgerow fringe habitat within the western section, and the hedgerow fringes within the central section. There was also abundant riparian habitat on site which was assessed to provide some suitable habitat for reptiles. No reptiles were returned within the data search.

One common lizard was recorded from the north of the central section during the phase 1 survey 9th July 2018.

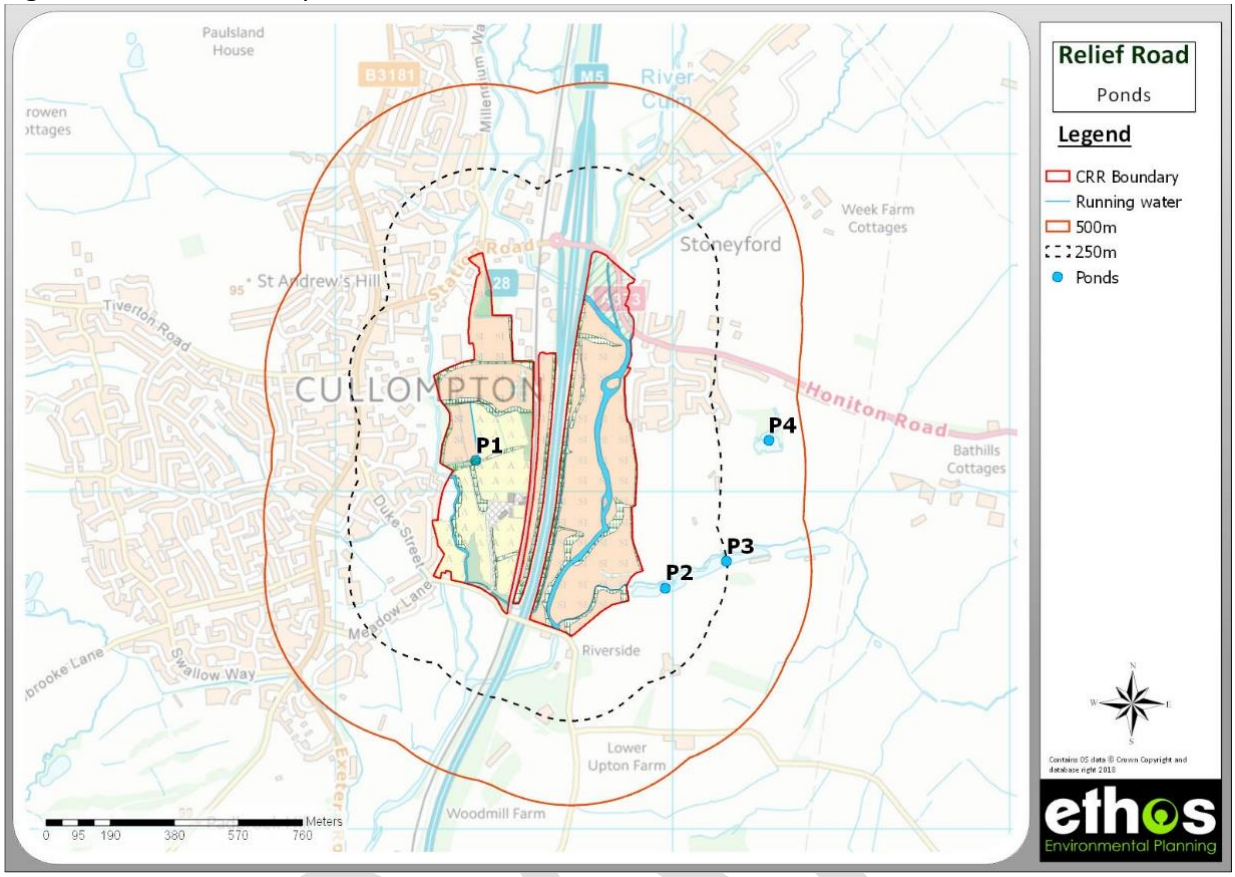
6.7 Amphibians

The site was within the Mid Devon GCN consultation zone. The data search returned records of GCN from P2, fishing lakes south west of the site boundary. Records of frogs and toads were also returned within the data search.

There was a single pond on site (P1) located within the western section of the site and multiple ditches on site which were dry at the time of survey. Although, GCN surveys were not undertaken it was assessed that the site may provide some areas of suitable habitat for GCN.

Much of the site was dominated by heavily grazed grassland with a subsequent low sward height providing unsuitable habitat for GCN. However, there was suitable terrestrial habitat within the north of the western section of the site and good terrestrial connectivity between the site and the fishing lakes south-east of the site boundary.

Figure 16: GCN Map



6.7.1.1 Pond 1

Pond 1 was located within the centre of the western section of the site.; within a small copse WH6. The pond was heavily shaded and dry at the time of survey. The terrestrial habitats adjacent to the pond was assessed as optimal with high ecological connectivity to other waterbodies. The pond was assessed as being excellent regarding habitat suitability for GCN (**table 18**).

Photo 34: Pond 1

Table 18: Habitat suitability index pond 1

Parameter	Description	Score	Index
Location	England = optimal	Optimal	1.00
Pond Area	Measure pond surface area (m^2) and round to nearest $50m^2$	50.00	50.00
Pond Drying		Annually	0.10
Water Quality	Abundant/Moderate/Low invertebrate community/Few submerged plants/clearly polluted	Good	1.00
Shade	Estimate percentage perimeter shaded to 1m from shore	70.00	0.80
Fowl	No evidence/present but little impact/severe impact	Absent	1.00
Fish	No records/no evidence but local conditions suggest they may be present/small number of carp, goldfish or stickelback/ dense populations	Absent	1.00
Ponds	Count number of ponds within 1km of survey pond, not separated by major barriers	3.00	0.62
Terrestrial Habitat		Good	1.00
Macrophytes	Estimate percentage of pond surface occupied	30.00	0.60
		TOTAL	**1.059**
		CATEGORY	**Excellent**

6.7.1.2 Pond 2-3

Pond 2 and 3 consisted of two fishing lakes. P2 was over $5000m^2$ and P3 was approximately $19,000m^2$. Pond 2 had low levels of shade and good terrestrial habitat which included a stream with banks with abundant vegetation which fed into the River Culm to the west. P3 was heavily shaded, well connected to P2, and had good terrestrial habitats. Both ponds were assessed to contain high levels of fish and water fowl such including abundant Canada geese *(Branta canadenensis)*.

P2 was assessed to have below average suitability for GCN whereas P3 had poor suitability (**Table 19**). Although, P3 was assessed as having poor habitat suitability for GCN a record of GCN was submitted from the area in 2014.

Photo 35: P3

Photo 36: P3

Table 19: Habitat suitability index P2 and P3

		Pond 2		Pond 3	
Parameter	**Description**	**Score**	**Index**	**Score**	**Index**
Location	England = optimal	Optimal	1.00		0.01
Pond Area	Measure pond surface area (m^2) and round to nearest $50m^2$	5000.00	50.00	19000.00	0.80
Pond Drying		Never	0.90	Never	0.90
Water Quality	Abundant/Moderate/Low invertebrate community/Few submerged plants/clearly polluted	Good	1.00	Good	1.00
Shade	Estimate percentage perimeter shaded to 1m from shore	30.00	1.00	70.00	0.80
Fowl	No evidence/present but little impact/severe impact	Major	0.01	Major	0.01
Fish	No records/no evidence but local conditions suggest they may be present/small number of carp, goldfish or stickelback/ dense populations	Major	0.01	Major	0.01
Ponds	Count number of ponds within 1km of survey pond, not separated by major barriers	3.00	0.62	3.00	0.62
Terrestrial Habitat		Good	1.00	Good	1.00
Macrophytes	Estimate percentage of pond surface occupied	30.00	0.60	10.00	0.40
		TOTAL	**0.527**	**TOTAL**	**0.207**
		CATEGORY	**Below Average**	**CATEGORY**	**Poor**

6.7.1.3 Pond 4

Pond 4 was located approximately 400m east of the site boundary. A GCN survey was undertaken by Ethos 17th May 2017. This included torching, egg searching, and bottle trapping. A maximum of 10 GCN were trapped during the surveys providing an assessment that the pond had a medium population of GCN.

Photo 37: P4

Photo 38: Abundant terrestrial vegetation

6.8 Invertebrates

6.8.1 White-clawed Crayfish

No records of white-clawed crayfish (*Austropotamobius pallipes*) were returned within the data search. The habitat was assessed to be good for crayfish with abundant refugia, sections of slow flowing water, and natural banks. Although, the habitat was assessed to be good for crayfish the visual search of the banks of the River Culm identified no crayfish.

6.8.2 Insects

The habitats on site were assessed to provide suitable habitats for insects. This included abundant riparian habitat, hay meadows to the north of the northern section, and abundant areas of scrub and hedgerow.

6.9 Plants

6.9.1 Invasive species

Himalayan balsam *(Impatiens balsamina)* was abundant throughout the site. Extensive stands were located within the central section of the site as well as stands within the south of the western section of the site. Balsam was also located within the plantation to the north of the eastern section, along the river banks in some sections, and within the fields to the east of the River Culm.

7 DISCUSSION

The site was assessed to have diverse ecological habitats such as mature tree lined hedgerows, riparian habitats, broadleaved woodland of varying ages, and pasture cut for hay. These habitats subsequently provide habitat suitability for a range of EPS such as otters, bats, and dormouse.

A detailed ecological assessment will be provided once the final layout has been provided. The detailed report would provide detailed advice regarding the specific ecological constraints that may arise from the proposals.

The detailed report will also include recommendations to mitigate and compensate the effects of the development and to enhance the site post development.

8 CONCLUSION

- The habitats on site were assessed to provide habitat suitability for a range of protected species including dormouse, birds, otters, hedgehogs, and polecat.

- A detailed assessment including mitigation, enhancements, and recommendations will be provided once a final layout has been issued.

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APPENDIX 1 LEGISLATION AND POLICY DETAILS

A1.1 Legislation - Species

This section outlines the key legislation related to the habitats and species considered within this survey report.

A1.1.1 Bats

All British bats are fully protected under Section 9 Schedule 5 of the Wildlife and Countryside Act 1981 and amendments. Agreement, and are fully protected under The Conservation of Habitats and Species Regulations 2017. In addition, they are protected under the Berne Convention; they are given migratory species protection within the Bonn Convention.
Regulation 43 (1) of The Conservation of Habitats and Species Regulation 2017 makes it an offence to:

- deliberately capture, injure or kill any species of bat;
- deliberately disturb any species of bat;
- damage or destroy a breeding site or resting place of any species of bat.

It is an offence to disturb any bat roosting site, whether the bats are there or not. Under Regulations 43 (2) disturbance includes in particular any 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 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.

Presence of bats does not necessarily mean that development cannot go ahead, but that with suitable, approved mitigation, exemptions can be granted from the protection afforded to bats under regulation 43 by means of a licence. Natural England (NE) is the appropriate authority for determining licence applications for works associated with developments affecting bats, including demolition of their roost sites. In cases where licences are required, certain conditions have to be met to satisfy Natural England. Before the Statutory Nature Conservation Organisation (SNCO), in this case NE, can issue a licence to permit otherwise prohibited acts three tests have to be satisfied under the requirement of Regulation 55. These are:

1. Imperative Reasons of Overriding Public Interest [Reg 55(2)(e)];
2. No Satisfactory Alternative [Reg 55(9)(a)];
3. Maintenance of Favourable Conservation Status [Reg 55(9)(b)].

In order to meet the tests, SNCO usually expects the planning position to be fully resolved as this is necessary to satisfy tests 1 and 2. Full planning permission, if applicable, will need to have been granted and any conditions relating to bats fully discharged. ahead of any licence application to the SNCO. The LPA have a legal duty under The Conservation of Habitats and Species Regulations 2017, to assess whether the application is likely to meet the Three Tests

and therefore the requirements for Natural England licensing, prior to determination of an application The Licence application process may take two months before a licence is issued. Planning Permission and granting of a bat licence are separate legal functions. Therefore, receiving planning permission from the Local Authority is no guarantee that the SNCO will issue a derogation licence.

A1.1.2 Reptiles

All reptile species in Great Britain receive some legal protection from legislation in the Wildlife and Countryside Act 1981 (as amended), and the two rarest species are afforded additional protection by European law (The Conservation of Habitats and Species Regulations 2017). Both the Wildlife and Countryside Act 1981 and Habitat Regulations 1994 provide mechanisms to protect species, their habitats and sites occupied by the species.

The two European protected species, **Sand lizards** (*Lacerta agilis*) and **Smooth snakes** (*Coronella austriaca*), receive all elements of protection in Section 9 of the Wildlife and Countryside Act 1981 (as amended) and Conservation of Habitats and Species Regulations 2017:

These pieces of legislation prohibits the following on any of the above species:

- Deliberately or intentionally killing and capturing (taking) or intentional injuring.
- Deliberately disturbing
- Deliberately taking or destroying eggs
- Damaging or destroying a breeding site or resting place or intentionally damaging a place used for shelter or protection.
- Intentionally obstructing access to a place used for shelter; and keeping, transporting, selling or exchanging; offering for sale or advertising.

Under Regulations 43 (2) (The Conservation of Habitats and Species Regulations 2017) disturbance includes in particular any 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 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.

Species that receive protection against intentional killing, injuring and sale only from Schedule 9 of the Wildlife and Countryside Act 1981 (as amended): **Slow-worm** (*Anguis fragilis*), **Common lizard** (*Lacerta vivipara*), **Adder** (*Vipera berus*) and **Grass snake** (*Natrix natrix*).

Both the Wildlife and Countryside Act 1981 and The Conservation of Habitats and Species Regulations 2017apply to all life stages of the protected species: i.e. eggs and spawn, larvae, juveniles and adults are all protected.

A1.1.3 Badger

The Protection of Badgers Act 1992 is based primarily on the need to protect badgers from baiting and deliberate harm or injury. It also contains restrictions that apply more widely and it is important for developers to know how this may affect their work. All the following are criminal offences:

- to wilfully kill, injure, take, possess or cruelly ill-treat a badger;
- to attempt to do so; or
- to intentionally or recklessly interfere with a sett.

Sett interference includes damaging or destroying a sett, obstructing access to a sett, and disturbing a badger whilst it is occupying a sett. It is not illegal, and therefore a licence is not required, to carry out disturbing activities in the vicinity of a sett if no badger is disturbed and the sett is not damaged or obstructed.

Development should not be permitted unless it is possible to take steps to ensure the survival of the badgers in their existing range and at the same population status, with provision of adequate alternative habitats if setts and foraging areas are destroyed. Natural England will normally only issue a licence after detailed planning permission has been granted, where applicable, so that there is no conflict with the planning process.

Before the planning application is determined, the local planning authority should request a detailed ecological survey/report and developers should be prepared to provide the following information:

- The numbers and status of badger setts and foraging areas that are affected by the proposal;
- the impact that the proposal is likely to have on badgers and what can be done by way of mitigation;
- judgment on whether the impact is necessary or acceptable; and
- a recommendation on whether a licence will be required.

A badger survey usually requires assessment of the site and a 30-50m buffer area as tunnels can extend up to 20m from sett entrances. As badgers are not a European Protected species the Three Test do not need to be applied, however Planning Permission and badger licensing are separate legal functions. Thus receiving planning permission from the Local Authority is no guarantee that development operations will not breach the Protection of Badgers Act 1992. Similarly planning permission does not guarantee that a badger licence will be granted.

A1.1.4 Birds

All wild birds are protected under the Wildlife and Countryside Act 1981 (as amended) and cannot be killed or taken, their nests and eggs taken, damaged or destroyed while their nest is in use or being built. It also prohibits or controls certain methods of killing or taking except under licence. Other activities that are prohibited include possession and sale. Activities such as killing or taking birds (including relocating) which would otherwise be illegal can be carried

out under licence where there is suitable justification and the issue cannot be resolved by alternative means.

Specially protected or Schedule 1 birds receive full protection under the Wildlife and Countryside Act 1981 (as amended). Part I birds are protected at all times, Part II during the close season only. In addition to the protection from killing or taking that all birds, their nests and eggs have under the Act, Schedule 1 birds and their young must not be disturbed at the nest.

A1.1.5 Dormouse

They are protected under both the Conservation of Habitats and Species Regulations 2017 and the Wildlife and Countryside Act 1981 (as amended). Dormice and their breeding sites and resting places are fully protected. Without a licence it is an offence for anyone to deliberately disturb, capture, injure or kill them. It is also an offence to damage or destroy their breeding or resting places, to disturb or obstruct access to any place used by them for shelter. It is also an offence to possess or sell a wild dormouse.

If it is not possible to avoid harming dormice or damaging or blocking access to their habitats, a derogation licence will be required. Planning permission is required to be in place before a licence application.

Planning Permission and granting of a mitigation licence are separate legal functions. Therefore receiving planning permission from the Local Authority is no guarantee that the SNCO will issue a derogation licence.

8.0.1.1 A1.1.6 Great crested newt

Great crested newts are fully protected under UK and European legislation:

- Bern Convention 1979: Appendix III
- Wildlife & Countryside Act (as Amended) 1981: Schedule 5
- EC Habitats Directive 1992: Annex II and IV
- The Conservation of Habitats and Species Regulations 2017
- Countryside Rights of Way Act 2000 (CRoW 2000).

These pieces of legislation prohibit the following:

- Deliberately or intentionally killing and capturing (taking) or intentional injuring.
- Deliberately disturbing
- Deliberately taking or destroying eggs
- Damaging or destroying a breeding site or resting place or intentionally damaging a place used for shelter or protection.
- Intentionally obstructing access to a place used for shelter; and keeping, transporting, selling or exchanging; offering for sale or advertising.

Under Regulations 43 (2) (The Conservation of Habitats and Species Regulations 2017) disturbance includes in particular any 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 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. Paragraphs 43(1) and 43(2) ensure that protection applies to all stages of their life cycle.

GCN mitigation and licensing can be complex. Natural England have a rapid risk assessment tool which can be used for guidance to assist with determining whether a licence needs to be applied for, or if the development can proceed with Reasonable non-licensed Avoidance Measures (RAM). If a licence is required, the Favourable Conservation Test needs to be met.

A1.1.7 Otter

The European Otter is fully protected under UK and European law by the Wildlife and Countryside Act 1981 (as amended) and The Conservation of Habitat and Species Regulations 2017. Otters and their breeding sites and resting places are fully protected. It is an offence for anyone to deliberately disturb, capture, injure or kill them; to deliberately damage or destroy their breeding or resting places; to disturb or obstruct access to any place used by them for shelter. It is also an offence to possess or sell an otter.

Under Regulation 43(2) of The Conservation of Habitats and Species Regulations 2017 the disturbance of otter includes in particular any disturbance which is likely to impair their ability to survive, breed or reproduce, or to rear or nurture their young; or to affect significantly the local distribution or abundance of the species to which they belong.

If it is not possible to avoid harming otter or damaging or blocking access to their habitats, a derogation licence will be required. Planning permission is required to be in place before a licence application.

Planning Permission and granting of a mitigation licence are separate legal functions. Therefore receiving planning permission from the Local Authority is no guarantee that the SNCO will issue a derogation licence.

A1.1.8 Water Vole

Water vole are protected from intentional harm or capture or killing, from deliberate damage or destruction to any structure or place used for protection or shelter; from obstruction of access to any structure or place used for protection or shelter or intentional disturbance whilst occupying a place of rest or shelter.

Mitigation and licensing is complex, and usually compensatory habitat will be required and maintenance of connectivity between populations is of key importance. If it is not feasible to avoid disturbing or damaging water vole and/or their habitats it may be possible to apply for a licence. However licences cannot be issued for the specific purpose of development.

Natural England may issue a licence in some situations, if it is considered that the licence action of the development proposal will provide a conservation benefit for water vole.

A1.1.9 White clawed crayfish

White clawed crayfish are listed on Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) however, though they are rare in the UK, they only receive protection under some sections making it an offence to take or sell the species only.

Under law, a licence is only necessary to survey for white clawed crayfish (at sites where there is an expectation for presence). The presence of white clawed crayfish is a material consideration in planning and development proposals, however, a mitigation licence is not needed if disturbance or harm cannot be reasonably avoided.

A1.2 Legislation – Habitats

A1.2.1 European Designated Sites: Special Area of Conservation / Special Protection Area

The legal requirements relating to the designation, protection and management of SACs and SPAs in England are set out in the Conservation of Habitats and Species Regulations 2017 (SI No. 1012) , often referred to as 'the Habitats Regulations'. The 2017 regulations encapsulate all the amendments since they were last consolidated in 2010. SACs are designated under the EC Habitats Directive and SPAs under the EC Birds Directive. Collectively this network of EU-wide nature conservation site is referred to as Natura 2000 sites.

All SACs and SPAs in England are also Sites of Special Scientific Interest (SSSIs). The additional SAC/SPA designation is recognition that some or all of the wildlife habitats and species within a SSSI are particularly valued in a European context and require additional protection.

The Habitats Regulations require that any plans, projects or activities that is likely to significantly affect a SAC/SPA, either alone or in combination with other plans or project, must be subject to an assessment. This is irrespective of whether planning permission or other consent is required. The plan or project can only be consented or proceed if strict conditions are met to ensure protection of the site / favourable conservation status of qualifying species is met with no net negative impacts. The assessment must include consideration of potential off-site impacts to populations for which the sites are designated (for example loss of key foraging habitat beyond the SAC/SPA boundary), and in-direct impacts such as recreational pressure to SAC/SPA habitats and species.

The process is known as a Habitat Regulations Assessment (HRA) and comprises four stages:

i) Screening – Test of Likely Significant Effect (TOLSE)
ii) Appropriate Assessment and the Integrity Stage
iii) Alternative Solutions
iv) Imperative Reasons of Overriding Public Interest and Compensatory Measures.

The first stage is for the Competent Authority, usually the Local Authority, to carry out a TOLSE, or to request that a shadow HRA is completed to be adopted by the Competent Authority. The screening stage can take the form of an iterative process, whereby potential Likely Significant Effects are designed out or mitigated for. Whilst not a legal requirement until Stage 2 of the HRA process, this stage of the assessment is usually carried out in consultation with Natural England. Mitigation measures must be sufficiently detailed to inform the screening assessment and then secured through condition if it is for a planning proposal. In some situations, this may mean that the Competent Authority may request details for the screening process that would not usually be presented or submitted until the later stages of a proposal.

The decision-making authority may only permit or undertake the proposals if the screening assessment concludes that there would no adverse effect on the integrity of the SAC. Where it cannot reach this conclusion, the project can then only proceed by undertaking an 'Appropriate Assessment' of the adverse effect(s) which could not be screened out. This must be detailed, objective, based on best available scientific evidence and carried out in on-going consultation with Natural England, a legal requirement under the Habitat Regulations. If, with additional assessment and additional mitigation measures, the Competent Authority can still not ascertain that an adverse effect on the SAC/SPA habitats or favourable conservation status of qualifying species cannot be protected/maintained, permission to proceed with the plan or project should not be granted – subject to the provisions of Regulations 64 and 68: i) Overriding Public Interest (in the absence of alternative solutions) and ii) Secure Compensatory Measures (to ensure overall coherence of Natura 2000 is protected) respectively.

The HRA process allows those proposals which clearly will not impact upon the special European wildlife interest of a SAC to proceed. Natural England is able to provide advice to authorities on how proposed activities can avoid adverse impacts on a SAC/SPA.

Under the Habitats Regulations planning authorities must also require that any permitted development normally carried out under a general planning permission, but which may affect a SAC requires further approval before being undertaken.

As the statutory nature conservation body in England, Natural England is duty bound to ensure that SACs/SPAs are protected and managed favourably for conservation in line with the requirements of the Habitats Directive. Our experience is that it is usually possible to find mutually acceptable solutions where sustainable land use and wildlife can flourish.

A1.2.2 UK Designated Sites – National Nature Reserves (NNR), Sites of Special Scientific Interest (SSSI)

Nationally protected sites are designated under the Wildlife and Countryside Act 1981 (as amended), reinforcing protection provided by the National Parks and Access to the Countryside Act 1948. SSSIs may also form component units of SACs. Natural England have a statutory duty to protect NNRs and SSSIs and must be consulted for activities or applications where there is risk of damage to the SSSI. Consent from Natural England ('Request permission for works or activity on a SSSI') may be required for certain activities within or near to a SSSI.

A1.3 Policy considerations

The National Planning Policy Framework (NPPF) set out the Government's planning Policies for England, to provide the framework and planning requirements for local plans; to deliver strategic and sustainable development.

A1.3.1 National Planning Policy

NPPF 2018

The 2012 National Planning Policy Framework has been updated and replaced with NPPF 2018. This consolidates proposals from various Government consultation documents in recent years.

The NPPF 2018 sets out principles for conserving and enhancing the local environment. Key policies are that local plans should allocate land with least environmental or amenity value and take a strategic approach to maintaining and strengthening networks of habitats and green infrastructure.

Para 173 sets out nature conservation principles that LPAs should apply to the determination of planning applications:

'*When determining planning applications, local planning authorities should apply the following principles:*

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;*
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 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;*
c) *development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland) should be refused, unless there are wholly exceptional reasons and a suitable mitigation strategy exists. Where development would involve the loss of individual aged or veteran trees that lie outside ancient woodland, it should be refused unless the need for, and benefits of, development in that location would clearly outweigh the loss; and*
d) *development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to incorporate biodiversity improvements in and around developments should be encouraged, especially where this can secure measurable net gains for the environment.'*

ethos
Environmental Planning

Preliminary Ecological Assessment

CCA Fields, Cullompton

April 2018

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CONTENTS

1.0 EXECUTIVE SUMMARY

- The site was located at CCA Fields in Cullompton, Mid Devon (Grid Reference: ST 04242 07098);
- The site area covered 19.82 hectares (Ha) and comprised mixed woodland, species-poor grassland, species-rich hedgerows, waterbodies, hard standing and structures;
- The woodland, species-rich hedgerows and river Culm were identified as key habitat features;
- Yellow rattle *(Rhinanthus minor)* was identified in grassland in the north of the site; and
- Protected species surveys are recommended for:
    - Bats (buildings, trees and activity);
    - Birds (breeding, farmland, overwintering);
    - Great crested newt;
    - Reptiles;
    - Hazel dormouse*;*
    - Otter;
    - Water vole; and
    - White clawed crayfish.
- Other surveys that may be required include badger, schedule 1 bird, and invertebrates.

2.0 INTRODUCTION

This preliminary ecological assessment produced by Ethos Environmental Planning (Ethos) relates to land located at CCA Fields in Cullompton, Mid Devon (Grid Reference: ST 04242 07098). The total area surveyed consisted of 19.82 Ha – See Figure 1.

2.1 Aims and objectives of the assessment

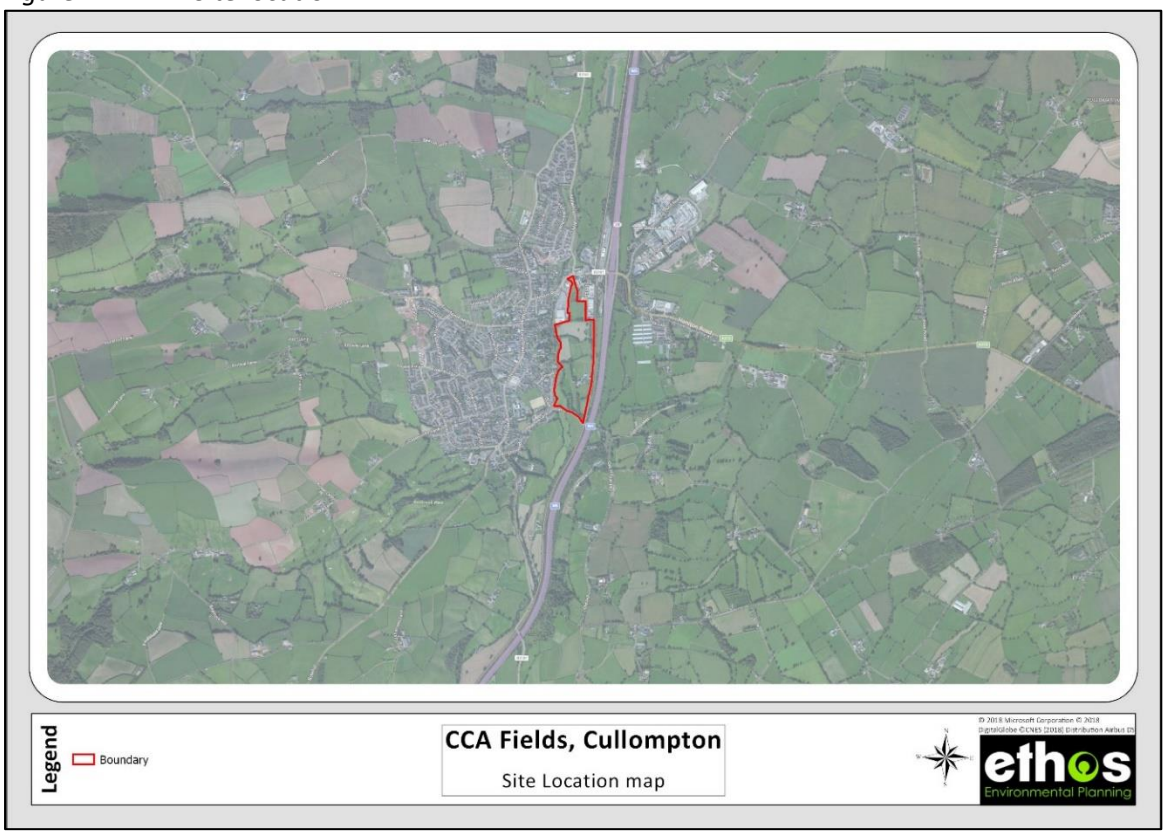
The preliminary ecological assessment has been informed by guidelines provided in the *'CIEEM Guidelines for Ecological Report Writing, 2015'.* Further guidance in relation to surveys for protected species is detailed in the relevant sections within this report. The survey has the following objectives:

- to identify the existing habitats on site;
- to assess the potential and presence of notable species;
- to establish baseline conditions and determine the importance of ecological features present (or those that could be present) within the specified area;
- to establish any requirements for further surveys or licensing;
- to identify key constraints to the project and make recommendations for design options to avoid significant effects on important ecological features/resources;
- to identify the mitigation measures to reduce any identified or potential ecological impact;
- to identify enhancement opportunities.

2.2 Site Location

The site was located north of Duke Street CCA Fields in the town of Cullompton (Grid Reference: ST 04242 07098). The east boundary was directly bordered by a railway line, and then the M5 motorway. The north and east boundary were bordered by the town of Cullompton and the south was bordered by agricultural fields. The wider environment was assessed as semi-rural; dominated by agricultural fields and pasture with sporadic residential plots. A section of the River Culm runs through the site near the southern boundary as a result of a levee, with the main river running east of the M5 motorway.

Figure 1 Site location



2.3 Development proposals

There are currently no development proposals for the site. The ecological assessment has been carried out to inform future development proposals and to anticipate any future requirements for survey.

2.4 Structure of the report

The following is included within this report:

- Legislative and planning context;
- Methodology;
- Phase 1 Habitat Survey; and
- Summary and recommendations.

3.0 LEGISLATIVE AND POLICY CONTEXT

This section provides a summary of the legislative and planning context which has been used to inform the ecological assessment and subsequent recommendations made in this report. Appendix 1 sets out further details in relation to the most relevant legislation and policy.

3.1 Summary of Legislation

The Habitats Directive (together with the Birds Directive) forms the cornerstone of Europe's nature conservation policy. It is built around two pillars: the Natura 2000 network of protected sites and the strict system of species protection. All in all, the directive protects over 1,000 animals and plant species and over 200 "habitat types" (e.g. special types of forests, meadows, wetlands, etc.), which are of European importance. The habitats Directive and parts of the Birds Directive are transposed into legislation by the **Conservation of Habitat and Species Regulations 2017**.

The Wildlife and Countryside Act 1981 (as amended) is a key piece of national legislation which implements the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) and implements the species protection obligations of Council Directive 2009/147/EC (formerly 79/409/EEC) on the Conservation of Wild Birds (EC Birds Directive) in Great Britain.

Badgers and their setts are protected under the **Protection of Badgers Act 1992** as amended by the Hunting Act 2004.

The **Natural Environment and Rural Communities Act 2006** (the NERC act) places a duty on all public authorities, including local planning authorities, to consider biodiversity in their work. Local planning authorities are to ensure that there is no net loss of biodiversity on a site, no net loss in habitat connectivity and aims to enhance biodiversity.

The **Hedgerows Regulations 1997** protect 'important hedgerows' from being removed (uprooted or destroyed). Hedgerows are protected if they are at least 30 years old and meet at least one of the criteria listed in part II of schedule 1.

Specific legislation related to different species such as bats, birds and reptiles is outlined in appendix 1.

3.2 Policy

Mid Devon Local plan Development Management Policies

5.10 Major applications (defined in the glossary) should be accompanied by a habitat survey describing what flora and fauna are present on the site, with particular regard to protected species. In permitting the development, the Council must be satisfied, as they have a legal duty under the Conservation of Habitats and Species Regulations 2017, that onsite biodiversity mitigation, where required, is sufficient to make the development acceptable in planning terms.

5.11 Green infrastructure provided within major development sites should normally serve a variety of purposes such as flood attenuation, leisure and recreation, provision of natural habitats, and shading and cooling of buildings and public areas. Green infrastructure functions can co-exist in one place, so the land coverage does not have to be extensive in every case. Green infrastructure within the site should be achieved as part of the broader objectives for sustainable design contained in Policy DM3 and high quality design (Policy DM2). Applicants should have regard to the Town and Country Planning Association document, Biodiversity by Design, and should explore opportunities for green infrastructure to deliver wider environmental measures, such as those set out in the SW River Basin Management Plan.

5.27 Policy DM30 affords protection to specific sites of significant wildlife or geological importance. The Council will also have regard to whether the application site is a priority habitat as defined in the UK Biodiversity Action Plan, including certain classifications of grassland, heathland, woodland or marsh. While the loss of irreplaceable habitats will not normally be permitted, the Council will seek the replacement of a priority habitat where it is significantly affected and its replacement can be achieved, through a planning obligation as appropriate. The Countryside and Rights of Way Act 2000, the UK Biodiversity Action Plan and a number of other Regulations and Directives also designate particular protected species with legal protection. It is an offence recklessly or deliberately to kill, injure, capture or disturb protected species, which includes carrying out works which obstruct, damage or destroy access to that species habitat. These provisions are set out in law and apply in addition to relevant policies in the Local Plan.

4.0 METHODOLOGY

4.1 Phase 1 habitat survey

The phase 1 habitat survey and mapping has drawn on guidance provided in the *Handbook for Phase 1 Habitat Survey - a technique for environmental audit (JNCC 2010).* A field survey was undertaken on the 15th June 2017 by the survey team (see below). The survey incorporated an assessment of the land within the development boundary and the adjoining area, including a description and mapping of all key features and habitat types. The survey was carried out to identify the range of habitats within the site.

4.2 Background data search

A background data search for the wider development area will be carried out by Devon Biodiversity Records Centre (DBRC) at a later stage. This will include local notable sites and species within a 1km radius of the site.

4.3 Protected Species Assessment

The Phase 1 habitat survey has been extended to include an assessment for protected species in line with *Guidelines for Preliminary Ecological Appraisal, CIEEM 2013*. At this preliminary stage, no detailed surveys have been undertaken but general methodologies focussing on habitat suitability are detailed below.

4.3.1 Badger

The survey for badger *(Meles meles)* included a search of the development site for any evidence of badgers, including setts, foraging signs (snuffle holes), runs and latrines.

4.3.2 Hedgehog

There is no standardised survey technique for this BAP species however, the habitats within the site were assessed for their potential to support hedgehog *(Erinaceus europaeus)*, and visually for evidence of hedgehogs themselves or their droppings.

4.3.3 Otter and water vole

The survey included an assessment of the potential of the site to support riparian mammals such as otter *(Lutra lutra)* and water vole *(Arvicola amphibius)*. The principal survey technique employed was a search for field signs including holts/burrows, couches, feeding sites, spraints/latrines and tracks.

4.3.4 Hazel dormouse

The survey included an assessment of the potential of the site for hazel dormouse *(Muscardinus avellanarius)*, focusing on the connectivity and suitability of the habitat on site.

4.3.5 Amphibians

The habitats on site were assessed for their potential to support amphibian species, including great crested newts (*Triturus cristatus)* (GCN). Surveys for GCN were informed by the *Great Crested Newt Conservation Handbook,* Froglife 2001. The site was examined for suitable waterbodies and for breeding terrestrial habitat. Terrestrial habitats providing sufficiently structured vegetation in which amphibians may forage or hibernate over winter were also surveyed for.

4.3.6 Birds

The bird survey included an assessment of the habitats on site for their potential to support breeding birds. Surveyors were equipped with Barr and Stroud 8 x 42 binoculars and any bird species observed during all site visits were recorded.

4.3.7 Invertebrates

Due to the many invertebrate taxonomic groups that exist, the often-large differences in invertebrate diversity between habitats and the many survey techniques available, invertebrate surveys are highly specific to individual sites. Therefore, an assessment of the potential site for invertebrates was undertaken, including the need for targeted surveys.

4.3.8 Reptiles

The potential presence of reptiles on site was assessed considering the habitats present (availability of refugia and basking areas) and suitability of surrounding environment. Where possible, attempts to confirm reptile presence on site were made following *Froglife Advice Sheet 10 – Surveying for Reptiles* through direct observation in reptile "hotspots" and checking of any existing refugia.

4.3.9 Bats

The methodology for the bat survey has been informed by the Bat Conservation Trust *Bat Surveys Good Practice Guidelines 2016*.

The habitats on site were assessed for their suitability for foraging and commuting bats and the trees were assessed for their potential for roosting bats. The assessment was also contextualized through examination of suitable habitat and features in the wider landscape and possible flight-lines across the proposed site following natural linear features such as hedgerows.

4.4 Personnel

All surveys were led by Jim Phillips, BSc (Hons), MA, MCIEEM. Due to the size of site and potential scope of surveys involved, Jim was assisted by Rachel Godden BSc (Hons), ACIEEM and Charlie Fayers BSc (Hons), ACIEEM. Jim is a Director of Ethos and a qualified and

experienced ecologist with over 8 year's field work experience and a full member of the Chartered Institute of Ecology and Environmental Management (CIEEM). Rachel and Charlie are qualified ecologists with four years' experience of practical field ecology. The survey team have worked together on numerous similar projects and have a complimentary range of skills and experience which are considered to have provided a robust ecological appraisal of the site.

4.5 Limitations

The assessment at this stage is not informed by background desk study data of existing records in the area. Phase 1 Habitat Survey was undertaken at an optimal time of year when flora was in full bloom and the site was fully accessible.

5.0 PHASE 1 HABITAT SURVEY

5.1 General site description

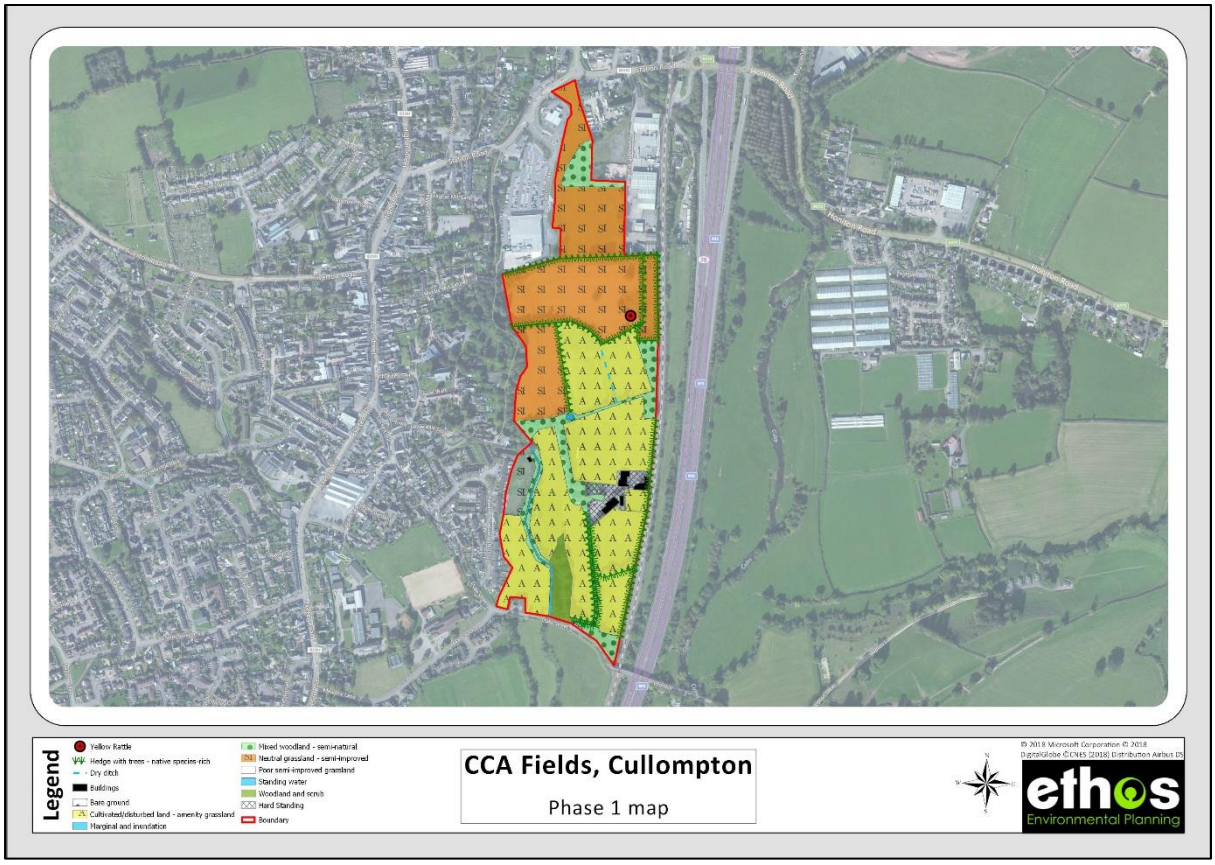
The site was dominated by large fields of amenity grassland and semi-improved grassland interspersed with woodland and hedgerows. Several water bodies were present on site including a pond, a ditch and the River Culm. The site is used as a cricket ground with the cricket club and associated car park located in the southern half of the site.

5.2 Habitat description

Figure 1 shows the key habitats using the Phase 1 habitat classifications. The key habitat types described within this section are:

- Neutral grassland – Semi-improved (B2.2);
- Poor semi-improved grassland (B4);
- Cultivated/disturbed land – amenity grassland (J1.2);
- Mixed woodland – semi-natural (A3.1);
- Hedge with trees – native species-rich (J3.1);
- Woodland and scrub;
- Standing water (G1);
- Running water (G2);
- Dry ditch (J2.6);
- Hardstanding;
- Buildings; and
- Target Note – yellow rattle *(Rhinanthus minor)*.

Figure 2 Phase 1 habitat map of site



5.2.1 Neutral grassland – semi-improved (B2.2)

Semi-improved grassland was abundant in the north of the site, covering approximately 7 Ha. Despite the grassland being left unmanaged it had relatively low diversity, harbouring only common species such as greater plantain *(Plantago major)*, ribwort plantain *(Plantago lanceolata)*, perennial rye-grass *(Lolium perenne),* Yorkshire fog *(Holcus lanatus)* and common sorrel *(Rumex acetosa)*. Patches of yellow rattle *(Rhinanthus minor)* were also identified.

Photo 1: Semi-improved grassland

Photo 2: Semi-improved grassland

5.2.2 Poor semi-improved grassland (B4)

Poor semi-improved grassland was present on the western boundary. The habitat was overgrown with poor botanical diversity within this section. Species recorded include; common nettle *(Urtica dioica)*, cow parsley *(Anthriscus sylvestris)* and hogweed *(Heracleum sphondylium)*.

Photo 3: poor semi-improved grassland

5.2.3 Cultivated/disturbed land – amenity grassland (J1.2)

The site was dominated by heavily managed, short sward amenity grassland which consisted of play areas and sports fields. The habitat had low botanical diversity and value for protected species was limited.

Photo 4: Amenity grassland

Photo 5: Amenity grassland

5.2.4 Mixed woodland – semi-natural (A3.1)

Mature mixed woodland was present within the centre of the site and comprised of a combination of deciduous and leyllandli trees used as curtilage between playing fields and screening from the motorway and railway line.

Photo 6: Mixed woodland understorey

Photo 7: Mixed woodland

5.2.5 Hedge with trees – native species-rich (J3.1)

Species rich hedgerows were located predominantly on the site boundaries and were used to separate playing fields and grasslands. The hedgerows comprised of mature well-established trees and were identified as having significant ecological value to the site.

Photo 8: Species rich hedgerows either side of road

Photo 9: Species- rich hedgerow adjacent to amenity grassland

5.2.6 Running Water (G2)

A tributary of the river Culm runs traverses the west boundary and south-west section of the site. This stream is heavily lined and shaded by deciduous trees on both banks.

Photo 10: River Culm

5.2.6 Standing Water (G1)

A single pond was located within the woodland in the centre of the site. This pond was over shadowed however was assessed as holding ecological value on site.

Photo 11: Pond

5.2.7 Dry /wet ditch (J2.6)

A ditch was located between two sport pitches within the north of the site. The banks were dominated by ruderal species including; common nettle *(Urtica dioica)*, cow parsley *(Anthriscus sylvestris)*, goosegrass *(Galium aparine)* and woody nightshade (*Solanum dulcamara*).

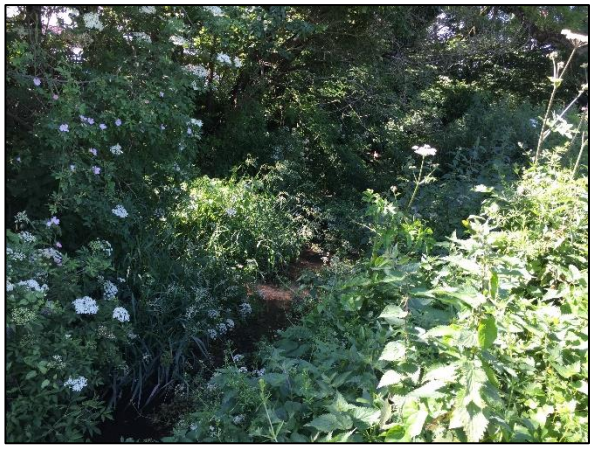


Photo 12: Wet ditch

5.2.8 Hardstanding

Hard standing concrete was located on the main access road and within the car park.

Photo 13: Hard standing

5.2.10 Buildings (J6)

Five buildings were located within the site boundary. These structures varied in design but were mostly used as changing facilities.

Photo 14: Building

Photo 15: Building

6.0 SUMMARY AND RECOMMENDATIONS

6.1 Habitat

The habitats on site were assessed to be of moderate- high value and important at a local level, including areas of woodland and species-rich hedgerow.

A detailed habitat and hedgerow survey will be required, with potential for targeted botanical surveys (phase 2 NVC or similar) if a more detailed baseline is required in certain areas of the site.

6.2 Protected species (recommended further surveys)

The initial survey identified potential for a number of protected species on site due to the suitability of habitats. From this the following further surveys are recommended:

6.2.1 Badger

There was no evidence of badger on site; no mammal trails, foraging evidence, smeuses, latrines or setts were found. The habitats on site were assessed as having high potential for foraging badgers. The surrounding environment was largely urbanised with the village of Cullompton west of the site. Large agricultural fields were located to the east of the site however, these were separated by the south west rail line and the M5 which were assessed to be a significant barrier. Overall the site was assessed to hold potential for foraging badgers however no evidence of permanent occupation was found during the site walkover. Badgers are transient in nature, so there is potential for presence to be found later on. No further survey is recommended at this stage, however should any evidence of badger *(Meles meles)* become apparent during other protected species surveys, further survey may be required.

6.2.2 Hedgehog

The wider environment was assessed to be urban with mosaic of urban development and nature, providing potential habitat for hedgehogs. Suitable habitat for hedgehogs was present on site including scrub and grassland. No further survey is required; however development design should consider connectivity for hedgehog *(Erinaceus europaeus)*.

6.2.3 Otter and water vole

The river Culm was present within the site which had potential to support these species. Overall it was assessed that the river Culm had moderate potential to harbour these species and that further surveys will be required.

6.2.4 Hazel dormouse

The site was largely isolated from other suitable habitat due to the village of Cullompton and the railway line, with connectivity limited to fields and hedgerows south of the site. Despite the poor connectivity the habitats on site had moderate- high potential with scrub and woodland offering good foraging and commuting habitat. Overall it was assessed that further surveys are required.

6.2.5 Amphibians - Great crested newt

The pond on site provided potential breeding habitat for great crested newts, with the scrub and tall ruderal providing good terrestrial habitat. The wider environment was largely urbanised to the west and although the habitat to the east was assessed as having high potential GCN the M5 and Railway line were assessed to be a significant barrier. Despite the poor connectivity due to the high records and the suitable habitats on site, further surveys will be required.

6.2.6 Birds

The habitats on site were assessed to have moderate- high value for birds, with the scrub, grassland and woodland providing suitable nesting and feeding opportunities. The mosaic of woodland, grassland and riverain habitats provide potential for birds of conservation concern and schedule 1 birds to be present, it is therefore recommended that further surveys will be required covering breeding, farmland and overwintering bird surveys.

6.2.7 Invertebrates – White clawed crayfish

The grassland was assessed as having moderate value for invertebrates with the hedgerows and scrub being assessed as having high potential. It is recommended that the potential need for targeted invertebrate surveys, in particular for white-clawed crayfish, is considered following review of the development proposals on aquatic habitat and the river Culm.

The river Culm supports one of the two remaining populations of white-clawed crayfish in Devon.

6.2.8 Reptiles

Several areas on site were assessed to have moderate suitability for reptiles, in particular the grassland tussocks and scrub fringes. Therefore, it is recommended that an initial presence/absence survey for reptiles is undertaken in areas of most suitable habitat. If reptiles are found, further targeted population assessment surveys will be required.

6.2.9 Bats

The wider environment was assessed as high value for bats with a large network of fields, hedgerows and woodland, as well as roosting opportunities in nearby structures. The grassland and woodland provided moderate potential for foraging bats, with the mature trees

having high potential for roosting bats. Overall it was assessed that the site had moderate-high potential for bats and therefore further targeted species surveys will be required.

6.2.10 Survey Summary and time periods

Table 2 summarises the additional surveys that would be required to complete a full ecological impact assessment of the proposed development on the site.

Table 2 Survey time periods

Survey	J	F	M	A	M	J	J	A	S	O	N	D
Detailed habitat and Hedgerow												
Aquatic plants												
Invertebrates (terrestrial and aquatic)												
Bats – tree assessment												
Bats – activity/emergence												
Bats – static monitoring												
Birds - winter												
Birds – breeding												
Birds - farmland												
Reptiles												
GCN												
Hazel dormouse												
Otter/Water Vole												
Badger												
White clawed crayfish												

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Froglife advice sheet 11, *Surveying for Great Crested Newts,* Froglife 2003

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The Conservation of Habitats and Species Regulations 2017 (the Habitat Regulations), SI 2017 No. 1012 Wildlife Countryside, legistation.gov.uk

APPENDIX 1 LEGISLATION AND POLICY DETAILS

A1.1 Legislation - Species

This section outlines the key legislation related to the habitats and species considered within this survey report.

Bats

All British bats are fully protected under Section 9 Schedule 5 of the Wildlife and Countryside Act 1981 and amendments. Agreement, and are fully protected under The Conservation of Habitats and Species Regulations 2017. In addition, they are protected under the Berne Convention; they are given migratory species protection within the Bonn Convention.
Regulation 43 (1) of The Conservation of Habitats and Species Regulation 2017 makes it an offence to:

- deliberately capture, injure or kill any species of bat;
- deliberately disturb any species of bat;
- damage or destroy a breeding site or resting place of any species of bat.

It is an offence to disturb any bat roosting site, whether the bats are there or not. Under Regulations 43 (2) disturbance includes in particular any 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 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.

Presence of bats does not necessarily mean that development cannot go ahead, but that with suitable, approved mitigation, exemptions can be granted from the protection afforded to bats under regulation 43 by means of a licence. Natural England (NE) is the appropriate authority for determining licence applications for works associated with developments affecting bats, including demolition of their roost sites. In cases where licences are required, certain conditions have to be met to satisfy Natural England. Before the Statutory Nature Conservation Organisation (SNCO), in this case NE, can issue a licence to permit otherwise prohibited acts three tests have to be satisfied under the requirement of Regulation 55. These are:

1. Imperative Reasons of Overriding Public Interest [Reg 55(2)(e)];
2. No Satisfactory Alternative [Reg 55(9)(a)];
3. Maintenance of Favourable Conservation Status [Reg 55(9)(b)].

In order to meet the tests, SNCO usually expects the planning position to be fully resolved as this is necessary to satisfy tests 1 and 2. Full planning permission, if applicable, will need to have been granted and any conditions relating to bats fully discharged. ahead of any licence application to the SNCO. The LPA have a legal duty under The Conservation of Habitats and

Species Regulations 2017, to assess whether the application is likely to meet the Three Tests and therefore the requirements for Natural England licensing, prior to determination of an application. The Licence application process may take two months before a licence is issued.

Planning Permission and granting of a bat licence are separate legal functions. Therefore receiving planning permission from the Local Authority is no guarantee that the SNCO will issue a derogation licence.

Reptiles

All reptile species in Great Britain receive some legal protection from legislation in the Wildlife and Countryside Act 1981 (as amended), and the two rarest species are afforded additional protection by European law (The Conservation of Habitats and Species Regulations 2017). Both the Wildlife and Countryside Act 1981 and Habitat Regulations 1994 provide mechanisms to protect species, their habitats and sites occupied by the species.

The two European protected species, **Sand lizards** (*Lacerta agilis*) and **Smooth snakes** (*Coronella austriaca*), receive all elements of protection in Section 9 of the Wildlife and Countryside Act 1981 (as amended) and Conservation of Habitats and Species Regulations 2017:

These pieces of legislation prohibits the following on any of the above species:

- Deliberately or intentionally killing and capturing (taking) or intentional injuring.
- Deliberately disturbing
- Deliberately taking or destroying eggs
- Damaging or destroying a breeding site or resting place or intentionally damaging a place used for shelter or protection.
- Intentionally obstructing access to a place used for shelter; and keeping, transporting, selling or exchanging; offering for sale or advertising.

Under Regulations 43 (2) (The Conservation of Habitats and Species Regulations 2017) disturbance includes in particular any 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 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.

Species that receive protection against intentional killing, injuring and sale only from Schedule 9 of the Wildlife and Countryside Act 1981 (as amended): **Slow-worm** (*Anguis fragilis*), **Common lizard** (*Lacerta vivipara*), **Adder** (*Vipera berus*) and **Grass snake** (*Natrix natrix*).

Both the Wildlife and Countryside Act 1981 and The Conservation of Habitats and Species Regulations 2017apply to all life stages of the protected species: i.e. eggs and spawn, larvae, juveniles and adults are all protected.

Badgers

The Protection of Badgers Act 1992 is based primarily on the need to protect badgers from baiting and deliberate harm or injury. It also contains restrictions that apply more widely and it is important for developers to know how this may affect their work. All the following are criminal offences:

- to wilfully kill, injure, take, possess or cruelly ill-treat a badger;
- to attempt to do so; or
- to intentionally or recklessly interfere with a sett.

Sett interference includes damaging or destroying a sett, obstructing access to a sett, and disturbing a badger whilst it is occupying a sett. It is not illegal, and therefore a licence is not required, to carry out disturbing activities in the vicinity of a sett if no badger is disturbed and the sett is not damaged or obstructed.

Development should not be permitted unless it is possible to take steps to ensure the survival of the badgers in their existing range and at the same population status, with provision of adequate alternative habitats if setts and foraging areas are destroyed. Natural England will normally only issue a licence after detailed planning permission has been granted, where applicable, so that there is no conflict with the planning process.

Before the planning application is determined, the local planning authority should request a detailed ecological survey/report and developers should be prepared to provide the following information:

- The numbers and status of badger setts and foraging areas that are affected by the proposal;
- the impact that the proposal is likely to have on badgers and what can be done by way of mitigation;
- judgment on whether the impact is necessary or acceptable; and
- a recommendation on whether a licence will be required.

A badger survey usually requires assessment of the site and a 30-50m buffer area as tunnels can extend up to 20m from sett entrances. As badgers are not a European Protected species the Three Test do not need to be applied, however Planning Permission and badger licensing are separate legal functions. Thus receiving planning permission from the Local Authority is no guarantee that development operations will not breach the Protection of Badgers Act 1992. Similarly planning permission does not guarantee that a badger licence will be granted.

Birds

All wild birds are protected under the Wildlife and Countryside Act 1981 (as amended) and cannot be killed or taken, their nests and eggs taken, damaged or destroyed while their nest is in use or being built. It also prohibits or controls certain methods of killing or taking except under licence. Other activities that are prohibited include possession and sale. Activities such as killing or taking birds (including relocating) which would otherwise be illegal can be carried

out under licence where there is suitable justification and the issue cannot be resolved by alternative means.

Specially protected or Schedule 1 birds receive full protection under the Wildlife and Countryside Act 1981 (as amended). Part I birds are protected at all times, Part II during the close season only. In addition to the protection from killing or taking that all birds, their nests and eggs have under the Act, Schedule 1 birds and their young must not be disturbed at the nest.

Hazel Dormouse

They are protected under both the Conservation of Habitats and Species Regulations 2017 and the Wildlife and Countryside Act 1981 (as amended). Dormice and their breeding sites and resting places are fully protected. Without a licence it is an offence for anyone to deliberately disturb, capture, injure or kill them. It is also an offence to damage or destroy their breeding or resting places, to disturb or obstruct access to any place used by them for shelter. It is also an offence to possess or sell a wild dormouse.

If it is not possible to avoid harming dormice or damaging or blocking access to their habitats, a derogation licence will be required. Planning permission is required to be in place before a licence application.

Planning Permission and granting of a mitigation licence are separate legal functions. Therefore receiving planning permission from the Local Authority is no guarantee that the SNCO will issue a derogation licence.

Great Crested Newts

Great crested newts are fully protected under UK and European legislation:

- Bern Convention 1979: Appendix III
- Wildlife & Countryside Act (as Amended) 1981: Schedule 5
- EC Habitats Directive 1992: Annex II and IV
- The Conservation of Habitats and Species Regulations 2017
- Countryside Rights of Way Act 2000 (CRoW 2000).

These pieces of legislation prohibit the following:

- Deliberately or intentionally killing and capturing (taking) or intentional injuring.
- Deliberately disturbing
- Deliberately taking or destroying eggs
- Damaging or destroying a breeding site or resting place or intentionally damaging a place used for shelter or protection.
- Intentionally obstructing access to a place used for shelter; and keeping, transporting, selling or exchanging; offering for sale or advertising.

Under Regulations 43 (2) (The Conservation of Habitats and Species Regulations 2017) disturbance includes in particular any 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 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. Paragraphs 43(1) and 43(2) ensure that protection applies to all stages of their life cycle.

GCN mitigation and licensing can be complex. Natural England have a rapid risk assessment tool which can be used for guidance to assist with determining whether a licence needs to be applied for, or if the development can proceed with Reasonable non-licensed Avoidance Measures (RAM). If a licence is required, the Favourable Conservation Test need to be met.

Otter

The European Otter is fully protected under UK and European law by the Wildlife and Countryside Act 1981 (as amended) and The Conservation of Habitat and Species Regulations 2017. Otters and their breeding sites and resting places are fully protected. It is an offence for anyone to deliberately disturb, capture, injure or kill them; to deliberately damage or destroy their breeding or resting places; to disturb or obstruct access to any place used by them for shelter. It is also an offence to possess or sell an otter.

Under Regulation 43(2) of The Conservation of Habitats and Species Regulations 2017 the disturbance of otter includes in particular any disturbance which is likely to impair their ability to survive, breed or reproduce, or to rear or nurture their young; or to affect significantly the local distribution or abundance of the species to which they belong.

If it is not possible to avoid harming otter or damaging or blocking access to their habitats, a derogation licence will be required. Planning permission is required to be in place before a licence application.

Planning Permission and granting of a mitigation licence are separate legal functions. Therefore receiving planning permission from the Local Authority is no guarantee that the SNCO will issue a derogation licence.

Water vole

Water vole are protected from intentional harm or capture or killing, from deliberate damage or destruction to any structure or place used for protection or shelter; from obstruction of access to any structure or place used for protection or shelter or intentional disturbance whilst occupying a place of rest or shelter.

Mitigation and licensing is complex, and usually compensatory habitat will be required and maintenance of connectivity between populations is of key importance. If it is not feasible to avoid disturbing or damaging water vole and/or their habitats it may be possible to apply for a licence. However licences cannot be issued for the specific purpose of development. Natural England may issue a licence in some situations, if it is considered that the licence action of the development proposal will provide a conservation benefit for water vole.

White Clawed Crayfish

White clawed crayfish are listed on Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) however, though they are rare in the UK, they only receive protection under some sections making it an offence to take or sell the species only.

Under law, a licence is only necessary to survey for white clawed crayfish (at sites where there is an expectation for presence). The presence of white clawed crayfish is a material consideration in planning and development proposals, however, a mitigation licence is not needed if disturbance or harm cannot be reasonably avoided.

A1.2 Legislation – Habitats

European Designated Sites: Special Area of Conservation / Special Protection Area

The legal requirements relating to the designation, protection and management of SACs and SPAs in England are set out in the Conservation of Habitats and Species Regulations 2017 (SI No. 1012) , often referred to as 'the Habitats Regulations'. The 2017 regulations encapsulate all the amendments since they were last consolidated in 2010. SACs are designated under the EC Habitats Directive and SPAs under the EC Birds Directive. Collectively this network of EU-wide nature conservation site is referred to as Natura 2000 sites.

All SACs and SPAs in England are also Sites of Special Scientific Interest (SSSIs). The additional SAC/SPA designation is recognition that some or all of the wildlife habitats and species within a SSSI are particularly valued in a European context and require additional protection.

The Habitats Regulations require that any plans, projects or activities that is likely to significantly affect a SAC/SPA, either alone or in combination with other plans or project, must be subject to an assessment. This is irrespective of whether planning permission or other consent is required. The plan or project can only be consented or proceed if strict conditions are met to ensure protection of the site / favourable conservation status of qualifying species is met with no net negative impacts. The assessment must include consideration of potential off-site impacts to populations for which the sites are designated (for example loss of key foraging habitat beyond the SAC/SPA boundary), and in-direct impacts such as recreational pressure to SAC/SPA habitats and species.

The process is known as a Habitat Regulations Assessment (HRA) and comprises four stages:

i) Screening – Test of Likely Significant Effect (TOLSE)
ii) Appropriate Assessment and the Integrity Stage
iii) Alternative Solutions
iv) Imperative Reasons of Overriding Public Interest and Compensatory Measures.

The first stage is for the Competent Authority, usually the Local Authority, to carry out a TOLSE, or to request that a shadow HRA is completed to be adopted by the Competent Authority. The screening stage can take the form of an iterative process, whereby potential

Likely Significant Effects are designed out or mitigated for. Whilst not a legal requirement until Stage 2 of the HRA process, this stage of the assessment is usually carried out in consultation with Natural England. Mitigation measures must be sufficiently detailed to inform the screening assessment and then secured through condition if it is for a planning proposal. In some situations, this may mean that the Competent Authority may request details for the screening process that would not usually be presented or submitted until the later stages of a proposal.

The decision-making authority may only permit or undertake the proposals if the screening assessment concludes that there would no adverse effect on the integrity of the SAC. Where it cannot reach this conclusion, the project can then only proceed by undertaking an 'Appropriate Assessment' of the adverse effect(s) which could not be screened out. This must be detailed, objective, based on best available scientific evidence and carried out in on-going consultation with Natural England, a legal requirement under the Habitat Regulations. If, with additional assessment and additional mitigation measures, the Competent Authority can still not ascertain that an adverse effect on the SAC/SPA habitats or favourable conservation status of qualifying species cannot be protected/maintained, permission to proceed with the plan or project should not be granted – subject to the provisions of Regulations 64 and 68: i) Overriding Public Interest (in the absence of alternative solutions) and ii) Secure Compensatory Measures (to ensure overall coherence of Natura 2000 is protected) respectively.

. The HRA process allows those proposals which clearly will not impact upon the special European wildlife interest of a SAC to proceed. Natural England is able to provide advice to authorities on how proposed activities can avoid adverse impacts on a SAC/SPA.

Under the Habitats Regulations planning authorities must also require that any permitted development normally carried out under a general planning permission but which may affect a SAC requires further approval before being undertaken.

As the statutory nature conservation body in England, Natural England is duty bound to ensure that SACs/SPAs are protected and managed favourably for conservation in line with the requirements of the Habitats Directive. Our experience is that it is usually possible to find mutually acceptable solutions where sustainable land use and wildlife can flourish.

UK Designated Sites – National Nature Reserves (NNR), Sites of Special Scientific Interest (SSSI)

Nationally protected sites are designated under the Wildlife and Countryside Act 1981 (as amended), reinforcing protection provided by the National Parks and Access to the Countryside Act 1948. SSSIs may also form component units of SACs. Natural England have a statutory duty to protect NNRs and SSSIs and must be consulted for activities or applications where there is risk of damage to the SSSI. Consent from Natural England ('Request permission for works or activity on a SSSI') may be required for certain activities within or near to a SSSI.

A1.3 Policy considerations

This section considers key policies that are relevant to ecology and development of the site.

National Planning Policy

NPPF policy 109: Conserving and enhancing the natural environment

The planning system should contribute to and enhance the natural and local environment by:

- protecting and enhancing valued landscapes, geological conservation interests and soils;
- recognising the wider benefits of ecosystem services;
- minimising impacts on biodiversity and providing net gains in biodiversity where possible, contributing to the Government's commitment to halt the overall decline in biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures;
- preventing both new and existing development from contributing to or being put at unacceptable risk from, or being adversely affected by unacceptable levels of soil, air, water or noise pollution or land instability; and
- remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate.

Ethos Environmental Planning

Preliminary Ecological Appraisal

Land at East Cullompton

November 2016

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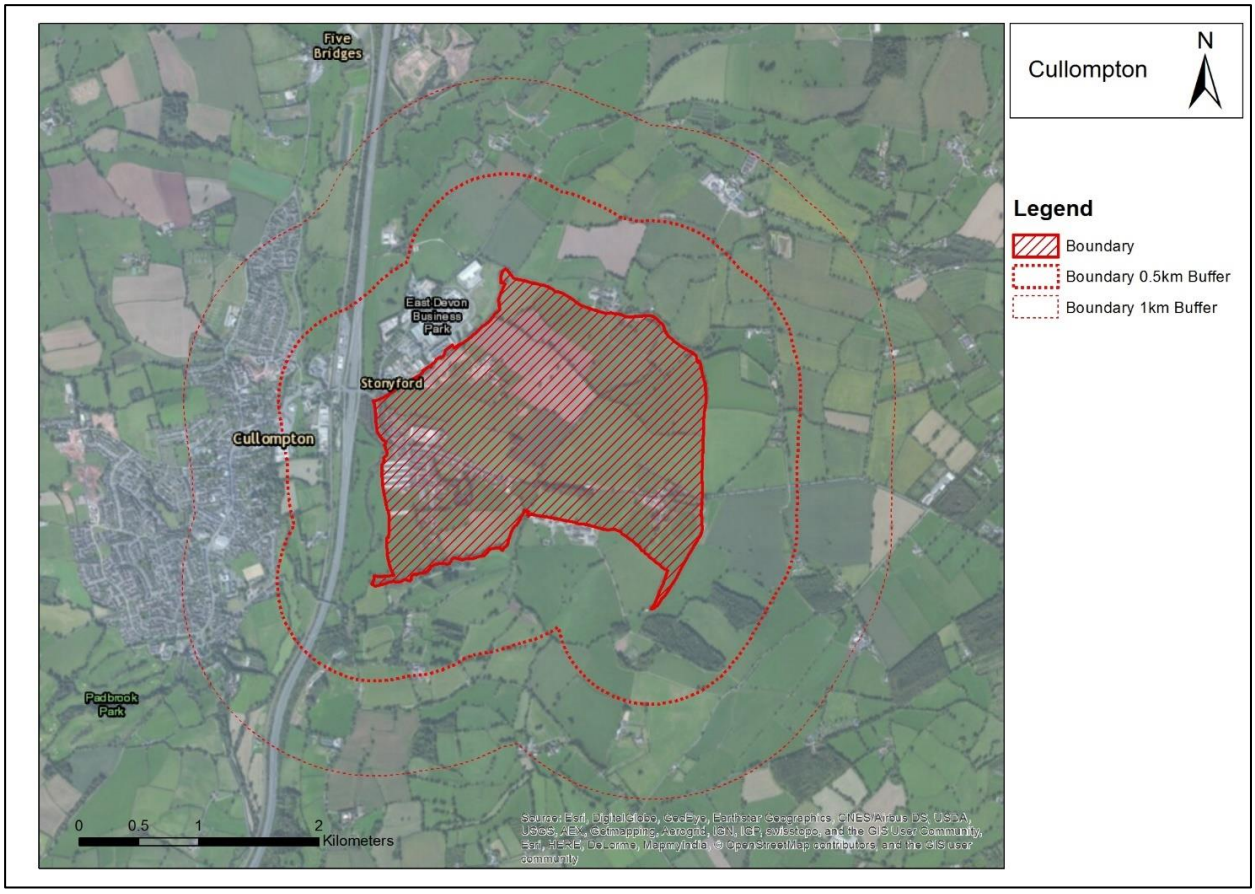
CONTENTS

1.0 INTRODUCTION

This preliminary ecological appraisal produced by Ethos Environmental Planning (Ethos) relates to land west of Cullompton (central grid reference: ST 03729 07476) (Fig. 1). The total area surveyed was 197 hectares and includes land to the east of the M5 and the East Devon Business Park. Additional areas of ecological interest within 0.5km of the site were also appraised including the adjacent River Culm.

Figure 1 Site location



1.1 Aims and objectives of the appraisal

The preliminary ecological appraisal has been informed by guidelines provided in the *'CIEEM Guidelines for Ecological Report Writing, 2015'.* Further guidance in relation to surveys for protected species is detailed in the relevant sections within this report. The survey has the following objectives:

- to identify the existing habitats on site;
- to assess the potential and presence of notable species;
- to establish baseline conditions and determine the importance of ecological features present (or those that could be present) within the specified area;
- to establish any requirements for further surveys or licensing;
- to identify key constraints to the project and make recommendations for design options to avoid significant effects on important ecological features/resources;

- to identify the mitigation measures to reduce any identified or potential ecological impact;
- to identify enhancement opportunities.

1.2 Structure of the report

The following is included within this report:

- Legislative and planning context;
- Methodology;
- Background data review;
- Phase 1 habitat survey;
- Summary and recommendations.

2.0 LEGISLATIVE AND POLICY CONTEXT

This section provides a summary of the legislative and planning context which has been used to inform the ecological assessment and subsequent recommendations made in this report. Appendix 1 sets out further details in relation to the most relevant legislation and policy.

2.1 Legislation

The Habitats Directive (together with the Birds Directive) forms the cornerstone of Europe's nature conservation policy. It is built upon two foundations: the Natura 2000 network of protected sites, and the strict system of species protection. In total the directive protects over 1,000 animals and plant species and over 200 "habitat types" (e.g. special types of forests, meadows, wetlands, etc.) which are of European importance.

The Wildlife and Countryside Act 1981 (as amended) is a key piece of national legislation which implements the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) and implements the species protection obligations of Council Directive 2009/147/EC (formerly 79/409/EEC) on the Conservation of Wild Birds (EC Birds Directive) in Great Britain.

Badgers and their setts are protected under the **Protection of Badgers Act 1992** as amended by the Hunting Act 2004.

The **Natural Environment and Rural Communities Act 2006** (the NERC act) places a duty on all public authorities, including local planning authorities, to consider biodiversity in their work. Local planning authorities are to ensure that there is no net loss of biodiversity on a site, no net loss in habitat connectivity and aims to enhance biodiversity.

The **Hedgerows Regulations 1997** protect 'important hedgerows' from being removed (uprooted or destroyed). Hedgerows are protected if they are at least 30 years old and meet at least one of the criteria listed in part II of schedule 1.

Specific legislation related to different species such as bats, birds and reptiles is outlined in appendix 1.

2.2 National Policy summary

The **National Planning Policy Framework (NPPF)** aims to minimise impacts on biodiversity and provide net gains in biodiversity where possible, contributing to the Government's commitment to halt the overall decline in biodiversity, including the establishment of coherent ecological networks more resilient to current and future pressures (see Appendix 1).

The **UK Biodiversity Action Plan (UK BAP)** sets out a programme for conserving the UK's biodiversity. It led to the production of 436 action plans between 1995 and 1999 to help many of the UK's most threatened species and habitats to recover. A review of the UK BAP priority list in 2007 led to the identification of 1,150 species and 65 habitats that meet the BAP criteria at UK level.

2.3 Local Policy summary

Mid Devon District Council produced a local plan in October 2013, from which the following policy is of relevance to the site:

DM28 GREEN INFRASTRUCTURE IN MAJOR DEVELOPMENT

Major development proposals must demonstrate that green infrastructure will be incorporated within the site as follows:

a) Biodiversity mitigation where warranted, resulting in a net gain in biodiversity;

b) Flood and water resource management;

c) Green corridors and public rights of way to link the site to the wider GI network, provide walking and cycling opportunities and avoid habitat fragmentation;

d) New green infrastructure such as the creation of native woodland where possible;

e) Public open space within housing developments.

Where evidence demonstrates that meeting these criteria would render the development unachievable, the Council will consider off site provision in lieu of one or more of the policy criteria. The Council will balance the benefits of the development against the objectives of this policy. Housing proposals that do not include public open space within the application site must demonstrate that this will be in the public interest, have no significant adverse impact on the amenity of residents within or adjoining the development, and provide appropriate compensation through design, such as the provision of larger private gardens.

3.0 METHODOLOGY

3.1 Phase 1 habitat survey

The phase 1 habitat survey and mapping has drawn on guidance provided in the *Handbook for Phase 1 Habitat Survey - a technique for environmental audit (JNCC 2010).* A field survey was undertaken on the 7th April 2016 by the survey team. The survey incorporated assessment of the land within the development boundary and the adjoining area, including a description and mapping of all key features and habitat types. The survey was carried out to identify the range of habitats within the site, however due to the size of the site it was not possible to make a full species list.

3.2 Background data search

An initial desktop study utilised information provided in previous ecological surveys of nearby land, as well as local biodiversity data records. All of this information is publicly available, and was seen to be the most effective way of gaining an understanding of the site and its context.

3.3 Personnel

All surveys were led by Jim Phillips, BSc (Hons), MA, MCIEEM. Due to the size and scope of the surveys involved, Jim was assisted by Charles Cunningham, BSc (Hons) and Kane Burchill.

Jim is a Director of Ethos and a qualified and experienced ecologist with over 8 year's field work experience and a full member of the Chartered Institute of Ecology and Environmental Management (CIEEM). Charles and Kane are qualified ecologists each with two years' experience of practical field ecology. The survey team have worked together on numerous similar projects and have a complimentary range of skills and experience which are considered to have provided a robust ecological appraisal of the site.

3.4 Limitations

The phase 1 survey was carried out in April, and therefore it was not possible to make a full species list of flora and fauna present on site. Sufficient evidence was gathered, with respect to the large size of the site, to make an accurate assessment of the habitats present on site and to recommend and inform further surveys.

4.0 BACKGROUND DATA REVIEW

A background data review was undertaken using publicly available data for the proposed site. The primary sources of this information were:

- *EAD Ecology Consultants* and *Environmental Gain Limited*, which both carried out ecological appraisals (March and April 2014 respectively) for sites in west Cullompton, approximately 2km west of the proposed site. As well as carrying out Phase 1 habitat surveys, existing biodiversity records were within 1km and bat records within 4km. These provided biological records for protected and notable species and information on sites with both statutory and non-statutory conservation designations. Additionally, information on sites with statutory conservation designations was found using the UK Government's Countryside Geographic Information website (MAGIC map).

- *Devon Biodiversity Records Centre (DBRC)* carried out a Phase 1 habitat survey and produced a Wildlife site resource map (2014) for the site. These contain local species records and an overview of the habitat within the site.

- *Acorn Ecology Limited* carried out a Phase 2 Ecological Survey (2012) following an extended Phase 1 habitat survey undertaken in September 2011. A search for relevant protected species within the 10km grid square containing the site (ST00) and within the past 10 years was completed using the National Biodiversity Network website (www.nbn.org.uk). The Devon Biodiversity Records Centre (DBRC) was contacted in July 2012 to determine whether there are any records of great crested newts within 2km of the pond on site. The historic site was located to the west of Cullompton, approximately 2km from the site covered by this appraisal.

4.1 Notable Sites

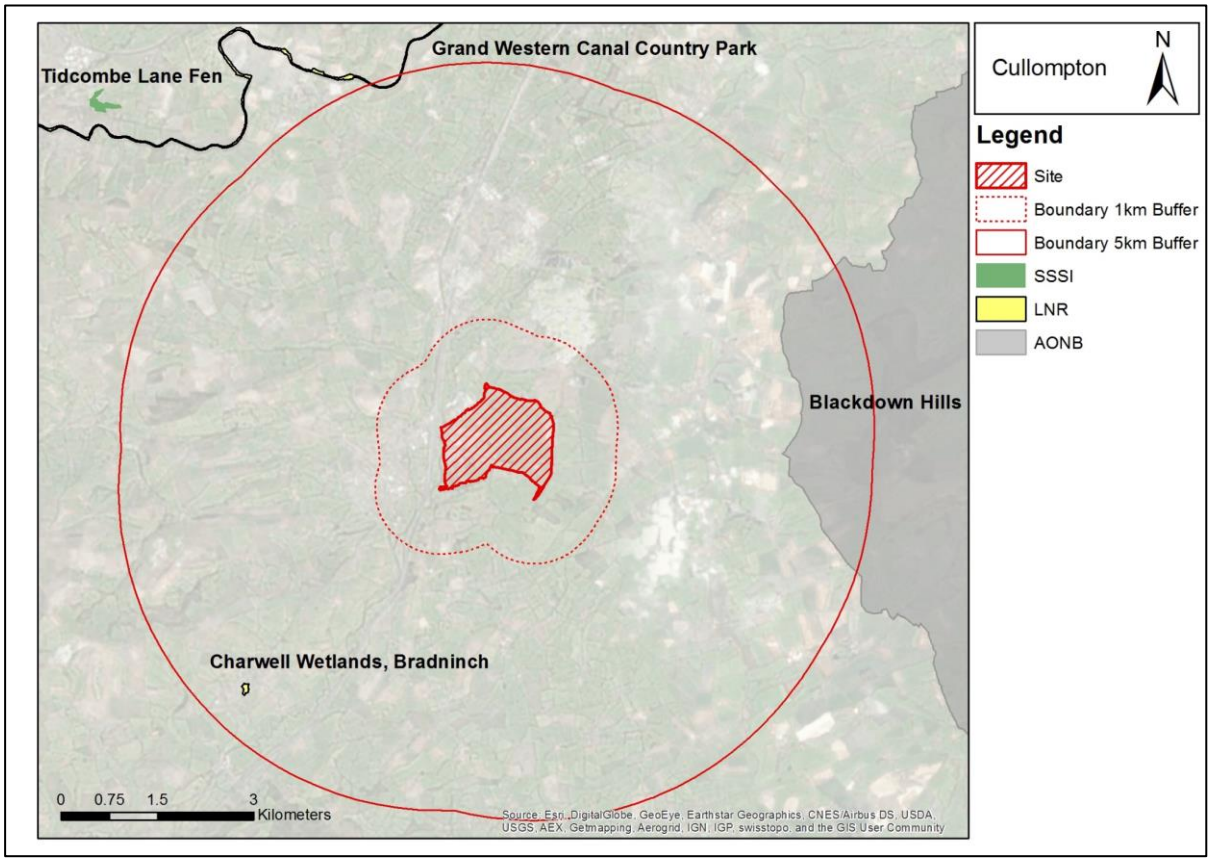
There are no designated sites within a 1km radius of the site, but there are several Local Nature Reserves within 5km as well as the Blackdown hills AONB to the east of the proposed site (see Fig. 2).

- Blackdown Hills (AONB), approximately 4km east of the site;

- Grand Western Canal Country Park (LNR), 5km approx. northwest of the site, supports many waterfowl species and supports rare bankside vegetation and orchids;

- Charwell Wetlands (LNR), approximately 4.5km to the southwest of the site, comprises of fen meadow habitat and an area of peat land.

Figure 2. Statutory habitat designations within 5km of the site, with 1km and 5km buffers

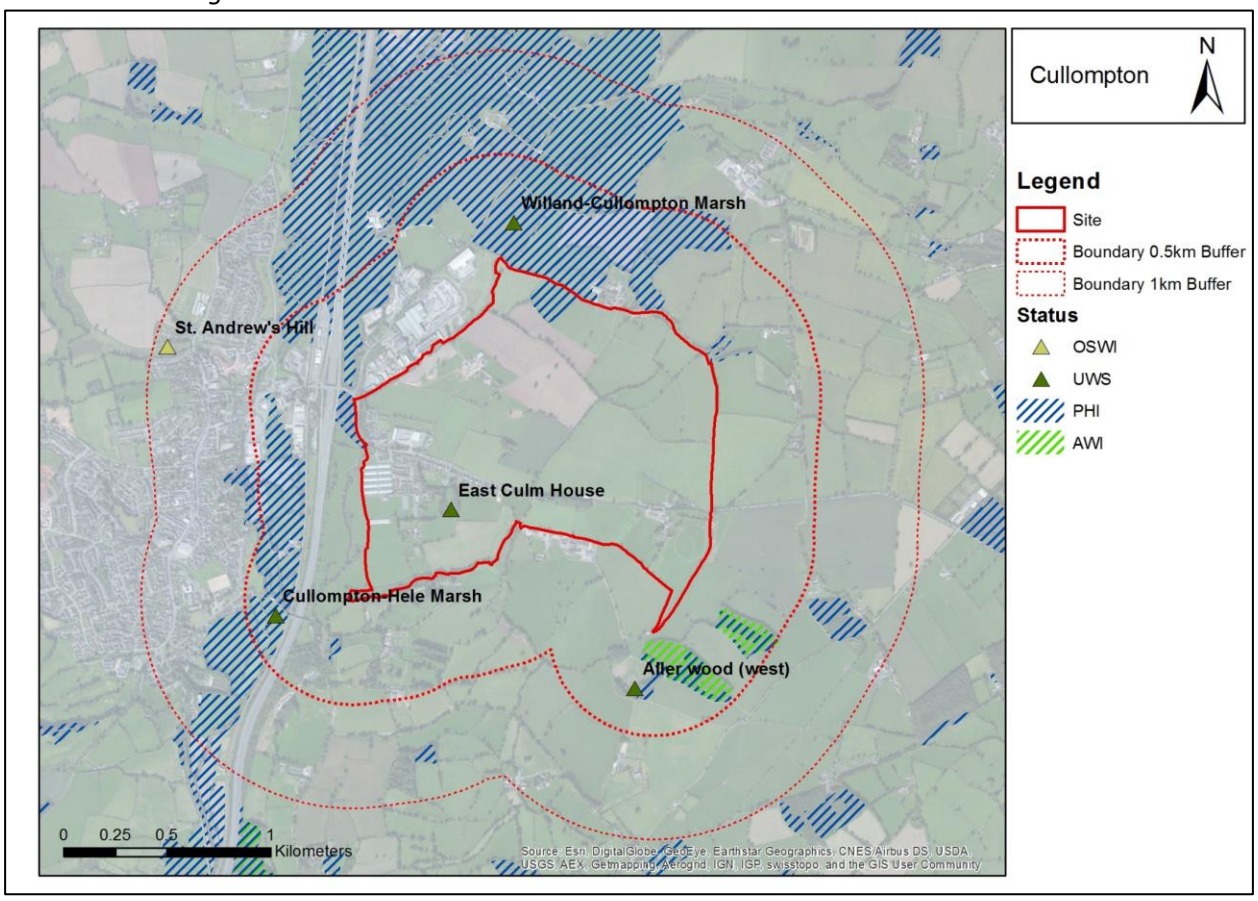


Additionally, there are a number of non-statutory sites within 1km of the application site which are presented in Table 1 and Figure X. There are also priority habitats and ancient woodland present within 1km of the site.

Table 1 Nearby non-statutory areas of interest

Name	Brief Description	Approximate distance from site
St, Andrew's Hill (OSWI)	Semi improved neutral & marshy grassland	900m west
Willand–Cullompton Marsh (UWS)	Possible floodplain grazing marsh	Borders north of site, one field included
Cullompton–Hele Marsh (UWS)	Possible floodplain grazing marsh	300m west, across M5 transport infrastructure
East Culm House (UWS)	Pond with amphibian interest	Within site
Aller Wood (west) (UWS)	Broadleaved woodland	250m south

Figure 3 Non-statutory habitat designations within 1km of the site, and ancient woodland and priority habitats bordering the site.



4.2 Notable Species

A list of notable species records in the area**,** obtained from previous ecological surveys and data searches, are presented in table 2:

Table 2 Notable species records within 5km of the site

Common Name	*Binomial*
Birds	
*Barn owl**	Tyto alba
Barn swallow	Hirundo rustica
*Common kingfisher**	Alcedo atthis
Sand martin	Riparia riparia
Common swift	Apus apus
Little egret	Egretta garzetta
*Red kite**	Milvus milvus
Mistle Thrush	Turdus viscivorus
Willow Warbler	Phylloscopus trochilus
Mammals	
*European otter**	Lutra lutra
*Eurasian badger**	Meles meles
*Hazel dormouse**	Muscardinus avellanarius
*Common pipistrelle**	Pipistrellus pipistrellus
*Soprano pipistrelle**	Pipistrellus pygmaeus
*Brown long-eared bat**	Plecotus auritus
*Noctule bat**	Nyctalus noctula
*Lesser horseshoe bat**	Rhinolophushipposideros
*Whiskered bat**	Myotis mystacinus
*Serotine bat**	Eptesicus serotinus
*Leisler's bat**	Nyctalus leisleri
*Barbastelle bat**	*Barbastella barbastellus*
Roe Deer	Capreolus capreolus
West European Hedgehog	Erinaceus europaeus
Reptiles and Amphibians	
Common frog	Rana temporaria
Common Toad	Bufo bufo
Newt species	Lissotriton
Invertebrates	
Jersey tiger	Euplagia quadripunctaria
White-legged damselfly	Platycnemis pennipes
Flora	
*Japanese Knotweed**	Fallopia japonica
Primrose	Primula vulgaris
Water Chickweed	Myosoton aquaticum
Rhododendron	Rhododendron ponticum
Floating Pennywort	Hydrocotyle ranunculoides
Himalayan Balsam	Impatiens glandulifera

***Developmental control species**

These are species considered most important by local authorities in the planning process. They include species part of the NERC Act (2006) Section 41, those that have European protection, those on the Wildlife and Countryside Act (1981), and Japanese knotweed.

4.3 Summary of previous ecology surveys

Results from previous surveys by *Environmental Gain Limited* (April 2014)*, EAD Ecology Consultants* (March 2014) and *Acorn Ecology Limited* (2012)*: NEEDED? AS 2KM FROM SITE*

Habitat: Environmental Gain found the sites to be of moderate ecological value, comprising primarily of semi-improved, cattle-grazed grassland, arable land and rush pasture. The surveys found features of ecological value including native hedgerows, mature trees, marshy grassland, designated as an Other Site of Wildlife Interest (OSWI) and a number of streams. Other surveys found similar habitat or were in more urban environments and so less relevant.

Reptiles: Although the are no records of reptiles in the area, the majority of the reports identified potential for reptile presence in the mosaic of habitats within the sites. Primarily for slow worm, and possibly grass snake and common lizard. The phase 2 ecological survey carried out by Acorn Ecology Limited did not include a reptile survey.

Bats: There are records of many bat species in the area that were noted by the previous phase 1 surveys (see table x), with potential for roosting as well as foraging areas. The phase 2 survey (Acorn Ecology Limited) carried out both static and walked transect surveys, and found at least 8 bat species, including lesser-horseshoe and barbastelle bat.

Otter: There are multiple otter records in the area, the phase 1 surveys found potential habitat for otters adjacent to the streams and also spraint (faeces) and holt (exposed tree root systems on river banks or similar) sites. Further otter surveys were recommended. An otter pad mark was found during the phase 2 survey and a verification survey recommended.

Amphibians: Although there are records of common frogs, there are none of great crested newt within 2km of the historic sites and the sites were not in a Great Crested Newt Consultation Zone. Specific surveys were not carried out, possibly because it is unlikely the species is present due to the lack of suitable nearby water bodies.

Badger: Evidence of badger activity was found during multiple phase 1 surveys, including foraging tracks and a fresh latrine, and there are multiple records in the wider area. The site where the phase 2 survey was carried out included a large sett within the boundary, and multiple smaller setts were found in the surrounding area.

Dormice: There are multiple records of dormice in the area, and suitable habitat was found including hazel hedgerows. The phase 2 report included a specific dormice survey, which did not find any evidence of dormouse presence at that site.

Breeding birds: Previous appraisals found suitable nesting and foraging habitat for a variety of bird species, farmland birds in particular. Suitable nesting habitat consisted of mature hedgerows, native trees and overgrown scrub along riverbanks. A number of mature trees were noted as having potential for barn owls.

Invertebrates: The historic sites were found to support a diverse assemblage of invertebrates, although the diversity and importance of the invertebrate community was constrained by the relatively intensive grassland management practices.

4.4 Relevance of the background data search

4.4.1 Notable Sites

The nearest statutory site is over 3km from the site, however, given the scale of the development any impacts should be considered carefully. There are a number of non-statutory sites within 1km of the site, of particular note are the UWS pong in the centre of the site and the large areas of high quality grazing marsh to the west and north of the site.

4.4.2 Notable species

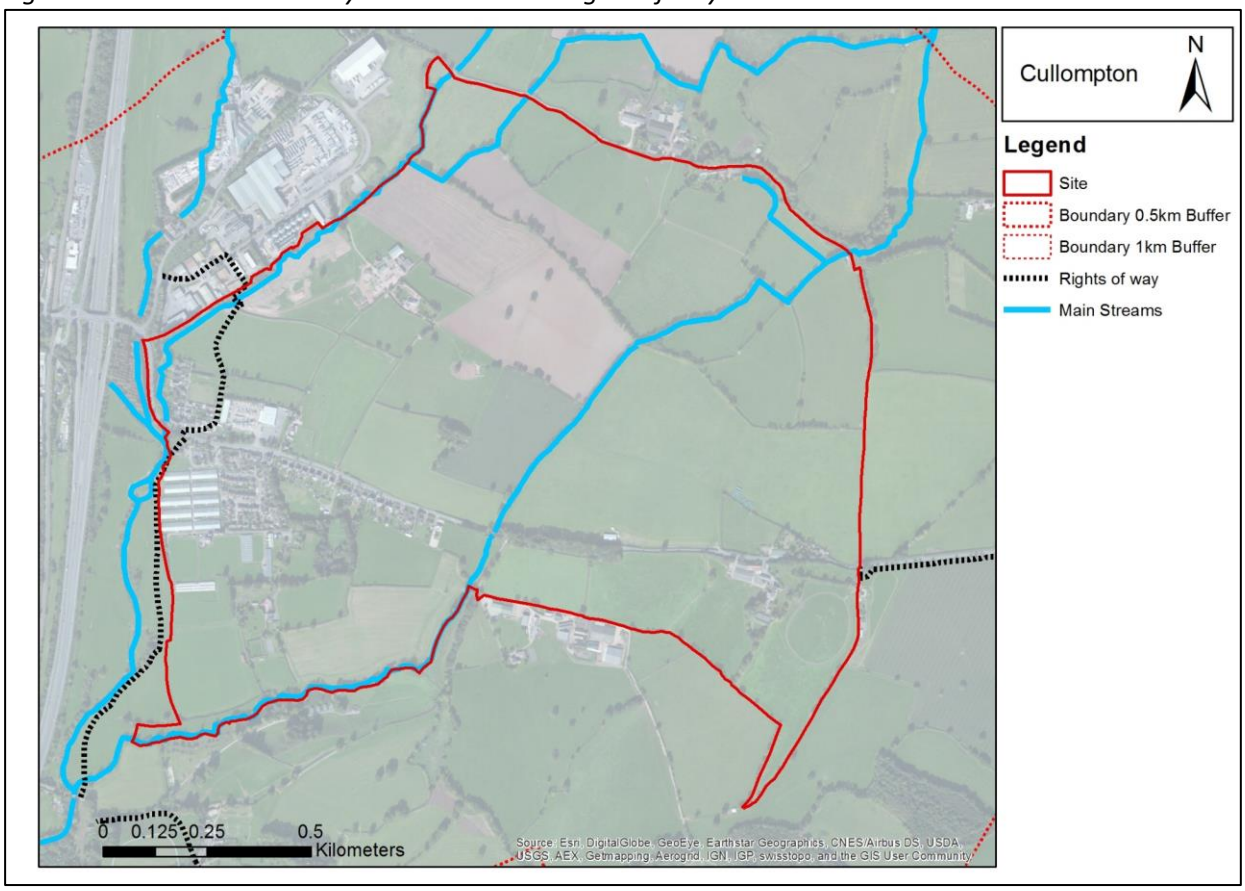
There are a number of species considered in the historic reports and surveys that are of especial relevance to this site, including otter, dormice and bat species. Potential for these species was taken into consideration during the recommendations for future surveys. It is of note is that the stream where the otter tracks were found during the Phase 2 carried out by Acorn Ecology (2012) is a tributary of the Culm river which flows directly to the west of the proposed site. Given the high riparian connectivity and close proximity (1.5km upstream from the conference of the stream and the Culm river), it is probable otters are present in the stretch of the Culm river adjacent to the site. A small stream runs through the centre of the site and this should also be investigated for signs of otter habitation.

5.0 PHASE 1 HABITAT SURVEY

5.1 General site description

The 197 Ha site is dominated by large fields of arable land, improved and semi-improved grassland. Two streams run through the site and join the River Culm flowing southwards adjacent to the western site boundary as shown in figure 4.

Figure 4 Site boundary with stream and rights of way

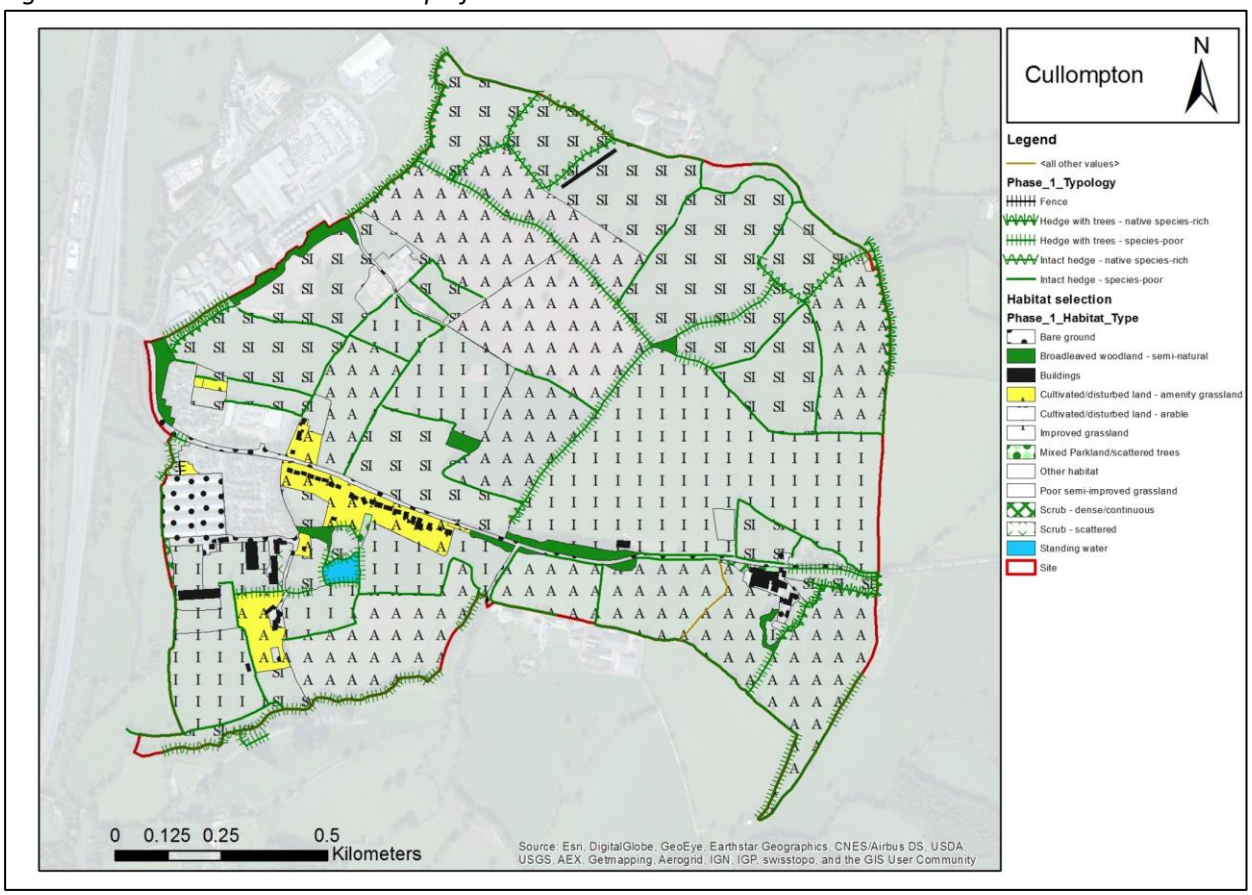


5.2 Habitat description

Figure 5 shows the key habitats using the phase 1 habitat classifications. The key habitat types described within this section are:

- Semi-improved grassland
- Improved grassland
- Amenity grassland
- Arable
- Hedgerows
- Woodland
- Scrub
- Standing water

Figure 5 Phase 1 habitat map of site



5.2.1 Poor semi-improved grassland

Photograph 1

There are 59.1 Ha of poor semi-improved grassland throughout the site. This habitat is of higher ecological value than improved grassland due to less intensive management. This habitat is mostly in the north of the site, and one field forms part of a wider grazing marsh priority habitat complex to the north of the site.

5.2.2 Improved grassland

Photograph 2

46.5 Ha of the land within the site comprised improved grassland. This habitat is of low ecological value due to intensive management such as heavy grazing or use of pesticides, and supports a narrower community of species.

5.2.3 Amenity grassland

Photograph 3

Amenity grassland within the site comprises almost entirely of residential gardens. This forms a small proportion of the entire site; 5.3 Ha. The amenity grassland is concentrated in the west of the site around Stonyford.

5.2.4 Arable field

Photograph 4

There were a number of arable fields on the site, with a mixture of autumn sown crops and fields left in stubble for spring sowing. Fields with spring sown crops are particularly attractive for ground nesting birds and generally have higher invertebrate and farmland bird abundance. Arable land formed 63.4 Ha of the total site, with the fields surrounded by hedgerows of varying ecological value.

5.2.5 Hedgerows

Photograph 5

17.2 km of hedgerows run through the site. The hedgerows range from native species poor hedges with only a few species present to species-rich hedgerows with mature trees within them. The hedges have potential for a variety of protected species, including breeding farmland birds, and the mature trees on site have roosting potential for bats. Additionally, due to records in the area, there is potential for dormouse presence in certain locations.

5.2.6 Woodland

Photograph 6

Woodland within the site is mostly deciduous, located in strips and small patches; 3.4 Ha in total excluding isolated trees part of hedgerows. Connectivity between the woodland is generally poor, with no priority habitat or ancient woodland. However, there is a small wood approximately 100m southeast of the site, which is designated as ancient woodland and is also a priority habitat.

5.2.7 Scrub

Photograph 7

There is approximately 0.6 Ha of both scattered and dense scrub within the site, generally located in small strips between other habitat types.

5.2.8 Standing water

Photograph 8

The only large area (0.5 Ha) of standing water within the site is the pond next to Culm House (UWS). The pond had an algal bloom at the northern edge, and there may be some eutrophication occurring, lowering the ecological value of the pond. It is likely there are amphibians present here, although the lack of records in the area and eutrophy make great crested newt presence unlikely.

6.0 SUMMARY AND RECOMMENDATIONS

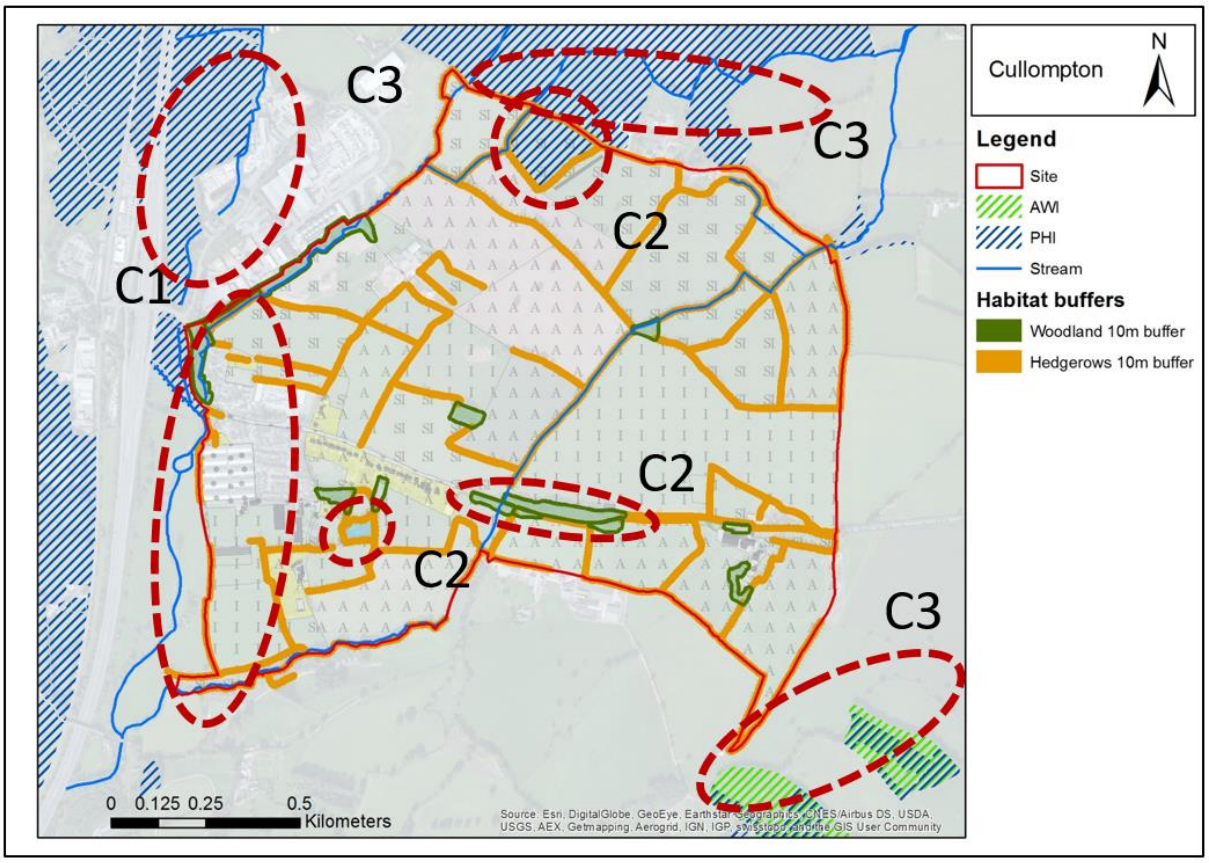
6.1 Habitat

6.1.1 Ecological constraints

Ecological constraints (see Fig. 6) of the site can be summarised as follows:

C1. The proximity of the River Culm bordering the site to the west, with probable otter presence, and to a lesser extent the streams that run through the site;
C2. The existing green infrastructure within the site boundary, including trees present in the area covered by TPOs, large woodland strips and native species rich hedgerows, including a pond with amphibian interest and one field of priority grazing marsh habitat;
C3. The existing green infrastructure within the broader site, i.e., the presence of deciduous woodland priority habitat blocks to the southeast, and large areas of grazing marsh surrounding the site.

Figure 6 Ecological constraints



6.1.2 Ecological opportunities

Ecological opportunities of the site can be summarised as follows:

- Enhance connectivity throughout the site through provision of new green infrastructure links across the promoted site, potentially incorporating a stream to create a central corridor, to improve both access and biodiversity, or linking up fragmented woodland;
- Improvement to hedgerows: filling in defunct hedges, planting of additional native species, removal of non-natives;
- Creation of new hedgerows to link other habitats together and create ecological corridors, implemented either as part of any proposed street scene or residential gardens;
- Installation of bird and bat boxes into new residential dwellings;
- Transport infrastructure can be better screened through enhanced green infrastructure provision;
- Planting of wildflower meadows and/or improvement to improved grassland which will benefit pollinators.

6.2 Protected species (recommended further surveys)

The initial survey identified potential for a number of protected species on site due to the suitability of habitats. From this and results from previous surveys, the following further surveys are recommended:

6.2.1 Badger

Given that there are badger records nearby and the scale of the site, focused badger surveys are recommended to ensure any development would not impact on setts nearby. The survey for badgers would inlcude a search of the development site for any evidence of badgers, including setts, foraging signs (snuffle holes), runs and latrines. If signs of badger presence are found, then camera traps should be used to confirm activity.

6.2.2 Hedgehog

There is no standardised survey technique for this BAP species however, hedgerows and other habitats within the site were assessed for their potential to support hedgehogs, and visually for evidence of hedgehogs themselves or their droppings. Assessment of suitable foraging and nesting habitat within site boundaries. The development site contains significant barriers to movement and there are no records of hedgehog within 1km of the site.

6.1.3 Otter and water vole

There are records of otter from the surrounding area and presence within the stage of the Culm adjacent to the site is likely. Surveys should be undertaken to establish whether otters are using the watercourse next to the site to commute or forage and whether the lower courses of the streams running through the site have otter presence.

All waterbodies on site should be assessed for their potential to support riparian mammals. Although no evidence was found when the banks of the river were visually inspected for evidence of water vole and otter (including mammal holes, mammal trails, droppings and feeding remains) more surveys are needed to establish riparian mammal abundance.

6.2.4 Hazel dormouse

Due to records of dormouse presence in the area, assessment of suitable habitat for hazel dormice within hedgerows on site should be carried out, focusing on hedgerows which will be impacted through development.

6.2.5 Amphibians

There are no records of great crested newt in the area. However, due to the size of the site and the presence of an UWS pond and a number of streams within the site, surveys should be undertaken. These would include a survey of the pond as potential breeding habitat and habitat assessment of hedgerows as possible dispersal routes. In addition to the on site assessment, a desktop analysis of ponds within 500 metres of the site should be undertaken, to identify any potential breeding ponds which may require further survey.

6.2.6 Birds

The following bird species were recorded within the site during the assessment: great tit (*Parus major*), house sparrow (*Passer domesticus*), common chiffchaff (*Phylloscopus collybita*), Eurasian blackcap (*Sylvia atricapilla*), common blackbird (*Turdus merula*), barn swallow (*Hirundo rustica*), common buzzard (*Buteo buteo*). Additionally, two dippers (*Cinclus cinclus)* and approximately ten sand martins (*Riparia riparia)* were seen foraging along the Culm river adjacent to the site. Probable sand martin nest holes were observed in the river bank. Over the entire site, suitable habitat is present for both breeding farmland and ground-nesting birds and further bird surveys are required. Three winter (November to March) and three breeding (May-July) bird surveys are recommended.

6.2.7 Reptiles

Assessment of the potential of the site for reptiles and the need for further surveys, which may be carried out between April and October.

6.2.7 Bats

There was suitable foraging and commuting habitat present across the site. Additionally, mature trees within hedgerows demonstrated bat roosting potential. Further bat surveys should be carried out including a combination of activity surveys and static bat detector surveys. Depending on the results of these surveys, there may be a requirement for advanced surveys comprising trapping and/or radio tracking. In addition, if any trees are to be removed then emergence surveys should be carried out to establish if there are any active roosts within the site.

Table 3 Survey time periods

Survey	J	F	M	A	M	J	J	A	S	O	N	D
Detailed habitat												
Bats												
Birds												
Reptiles												
GCN												
Hazel dormouse etc												

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APPENDIX 1 LEGISLATION AND POLICY DETAILS

A1.1 Legislation - Species

This section outlines the key legislation related to the habitats and species considered within this survey report.

Bats

All British bats are protected under Section 9 Schedule 5 of the Wildlife and Countryside Act 1981 and amendments. In addition, they are protected under the Berne Convention, they are given migratory species protection within the Bonn Convention Agreement, and are protected under Schedule 2 of the EC Council Directive on the Conservation of Natural Habitats and Wild Fauna and Flora (Habitats Directive).

Regulation 41 of The Conservation of Habitats and Species Regulation 2010 makes it an offence to deliberately capture or kill bats, to deliberately disturb a bat, damage or destroy a breeding site or resting site of any bat. It is an offence to disturb any bat roosting site. Presence of bats does not necessarily mean that development cannot go ahead, but that with suitable, approved mitigation, exemptions can be granted from the protection afforded to bats under regulation 41 by means of a licence. Natural England (NE) is the appropriate authority for determining licence applications for works associated with developments affecting bats, including demolition of their roost sites. In cases where licences are required, certain conditions have to be met to satisfy Natural England. Before the Statutory Nature Conservation Organisation (SNCO), in this case NE, can issue a licence to permit otherwise prohibited acts three tests have to be satisfied. These are:

1. Regulation 53(2)(e) states that licenses may be granted by SNCO to *'preserve public health or public safety or other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment.*

2. Regulation 42(10)(a) states that a license may not be granted unless SNCO is satisfied *'that there is no satisfactory alternative'.*

3. Regulation 42(10)(b) states that a license cannot be issued unless SNCO is satisfied that the action proposed *'will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range'*.

In order to meet the tests, SNCO usually expects the planning position to be fully resolved as this is necessary to satisfy tests 1 and 2. Full planning permission, if applicable, will need to have been granted and any conditions relating to bats fully discharged. For test 3, the licensing body seek advice from Natural England. As well as consulting with Natural England, the licensing body may also seek information from the local authority before they will determine

any licence application. The licence application process may take two months before a licence is issued.

Reptiles

All reptile species in Great Britain receive some legal protection from legislation in the Wildlife and Countryside Act 1981. More recently, further protection was afforded in Great Britain to species listed in the Habitat Regulations 1994. Both the Wildlife and Countryside Act 1981 and Habitat Regulations 1994 provide mechanisms to protect species, their habitats and sites occupied by the species. Native reptile species fit into two bands of protection:

European protected species receive all elements of protection in Section 9 of the Wildlife and Countryside Act 1981 and the Habitat Regulations 1994. Native species that receive this protection are:

- Sand lizards (*Lacerta agilis*)
- Smooth snakes (*Coronella austriaca*)

This legislation prohibits the following on any of the above species:

- Deliberately or intentionally killing and capturing (taking) or intentional injuring.
- Deliberately disturbing
- Deliberately taking or destroying eggs
- Damaging or destroying a breeding site or resting place or intentionally damaging a place used for shelter or protection.
- Intentionally obstructing access to a place used for shelter; and keeping, transporting, selling or exchanging; offering for sale or advertising.

Species that receive protection against intentional killing, injuring and sale only:

- Slow-worm (*Anguis fragilis*)
- Common lizard (*Lacerta vivipara*)
- Adder (*Vipera berus*)
- Grass snake (*Natrix natrix*)

Both the Wildlife and Countryside Act 1981 and the Habitat Regulations 1994 apply to all life stages of the protected species: eggs and spawn, larvae, juveniles and adults are all protected.

Badgers

The Protection of Badgers Act 1992 is based primarily on the need to protect badgers from baiting and deliberate harm or injury. It also contains restrictions that apply more widely and it is important for developers to know how this may affect their work. All the following are criminal offences:

- to willfully kill, injure, take, possess or cruelly ill-treat a badger;
- to attempt to do so; or

- to intentionally or recklessly interfere with a sett.

Sett interference includes damaging or destroying a sett, obstructing access to a sett, and disturbing a badger whilst it is occupying a sett. It is not illegal, and therefore a licence is not required, to carry out disturbing activities in the vicinity of a sett if no badger is disturbed and the sett is not damaged or obstructed.

Development should not be permitted unless it is possible to take steps to ensure the survival of the badgers in their existing range and at the same population status, with provision of adequate alternative habitats if setts and foraging areas are destroyed. Natural England will normally only issue a licence after detailed planning permission has been granted, where applicable, so that there is no conflict with the planning process.

Before the planning application is determined, the local planning authority should request a detailed ecological survey/report and developers should be prepared to provide the following information:

- The numbers and status of badger setts and foraging areas that are affected by the proposal;
- the impact that the proposal is likely to have on badgers and what can be done by way of mitigation;
- judgment on whether the impact is necessary or acceptable; and
- a recommendation on whether a licence will be required.

Planning Permission and badger licensing are separate legal functions. Thus receiving planning permission from the Local Authority is no guarantee that development operations will not breach the Protection of Badgers Act 1992. Similarly planning permission does not guarantee that a badger licence will be granted.

Birds

All wild birds are protected under the Wildlife and Countryside Act 1981 (as amended) and cannot be killed or taken, their nests and eggs taken, damaged or destroyed, it also prohibits or controls certain methods of killing or taking except under licence. Other activities that are prohibited include possession and sale. Activities such as killing or taking birds (including relocating) which would otherwise be illegal can be carried out under licence where there is suitable justification and the issue cannot be resolved by alternative means.

Specially protected or Schedule 1 birds receive full protection under the Wildlife and Countryside Act 1981 (as amended). Part I birds are protected at all times, Part II during the close season only. In addition to the protection from killing or taking that all birds, their nests and eggs have under the Act, Schedule 1 birds and their young must not be disturbed at the nest.

Hazel Dormouse

They are protected under both the Conservation of Habitats and Species Regulations 2010 and the Wildlife and Countryside Act 1981 (as amended). Dormice and their breeding sites and

resting places are fully protected. Without a licence it is an offence for anyone to deliberately disturb, capture, injure or kill them. It is also an offence to damage or destroy their breeding or resting places, to disturb or obstruct access to any place used by them for shelter. It is also an offence to possess, or sell a wild dormouse.

Great Crested Newts

Great crested newts are fully protected under UK and European legislation:

- Bern Convention 1979: Appendix III
- Wildlife & Countryside Act (as Amended) 1981: Schedule 5
- EC Habitats Directive 1992: Annex II and IV
- Conservation (Natural Habitats etc.) Regulations 1994: Schedule 2
- Countryside Rights of Way Act 2000 (CRoW 2000)

Because great crested newts are listed on Schedule 5 of the Wildlife & Countryside Act 1981, Section 9(1) of the Act makes it an offence to intentionally kill, injure or take great crested newts. Section 9(2) makes it an offence to possess or control a live or dead great crested newt or any part or thing derived from them. Section 9(4) makes it an offence to intentionally damage, destroy, obstruct access to, any structure or place which great crested newts use for shelter or protection. It is also an offence to intentionally disturb them while occupying a structure or place which it uses for that purpose. Section 9(5) makes it an offence to sell, offer or expose for sale, or possess or transport for the purpose of sale, any live or dead great crested newt or any part or thing derived from them. It is also an offence to publish or cause to be published any advertisement likely to be understood as conveying that great crested newts, or parts or derived things of them are bought, sold or are intended to be. Section 9 applies to all stages in their life cycle.

Their inclusion on Schedule 2 of the Conservation Regulations 1994 affords great crested newts extra protection by also making it an offence under Regulation 39(1) to deliberately capture, kill or disturb great crested newts or to deliberately take or destroy their eggs, or damage or destroy a breeding site or resting place. Regulation 39(2) makes it an offence to keep, or transport, or exchange great crested newts or any part or thing derived from them. Paragraphs 39(1) and 39(2) apply to all stages of their life cycle.

A1.2 Policy considerations

This section considers key policies that are relevant to ecology and development of the site.

National Planning Policy

NPPF policy 109: Conserving and enhancing the natural environment

The planning system should contribute to and enhance the natural and local environment by:

- *protecting and enhancing valued landscapes, geological conservation interests and soils;*
- *recognising the wider benefits of ecosystem services;*

- *minimising impacts on biodiversity and providing net gains in biodiversity where possible, contributing to the Government's commitment to halt the overall decline in biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures;*
- *preventing both new and existing development from contributing to or being put at unacceptable risk from, or being adversely affected by unacceptable levels of soil, air, water or noise pollution or land instability; and*
- *remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate.*

APPENDIX 2 LIST OF ACRONYMS USED

ASNW – Ancient & Semi-Natural Woodland
AWI – Ancient Woodland Inventory
BAP – Biodiversity Action Plan
CWS – County Wildlife Site
DBRC – Devon Biodiversity Records Centre
LNR – Local Nature Reserve
MAGIC – Multi-Agency Geographic Information for the Countryside
OSWI – Other Site of Wildlife Interest
PHI – Priority Habitat Inventory
SAC – Special Areas of Conservation
SPA – Special Protection Area
SSSI – Site of Special Scientific Interest
UWS – Unconfirmed Wildlife Site