

Land off Chatburn Old Road, Chatburn, Lancashire BB7 4AB

## ECOLOGICAL SURVEY AND ASSESSMENT

May 2019

[ERAP (Consultant Ecologists) Ltd ref: 2019-133]

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## Document Control

Survey Type:	Surveyors <sup>1</sup>	Survey Date(s)
Phase 1 Habitat survey	Brian Robinson B.Sc. (Hons) MCIEEM	25 <sup>th</sup> April 2019
Reporting	Personnel	Date
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<b>Revised and issued by</b>	Brian Robinson B.Sc. (Hons) MCIEEM Senior Ecologist	21 <sup>st</sup> May 2019
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## SUMMARY

### Introduction and Scope

- i. This Ecological Appraisal presents the ecological, biodiversity and nature conservation status of land at Chatburn Old Road, Chatburn, Lancashire. The appraisal was requested in connection with proposals to develop the site to housing.
- ii. The appraisal presents the results of a desktop study and extended Phase 1 Habitat Survey and a licensed bat survey carried out in April 2019. The scope of survey undertaken is appropriate to identify potential ecological constraints, the remit of mitigation required and opportunities for biodiversity associated with the development proposals.
- iii. The site comprises a wall with Hawthorn scrub at its northern elevation, and a field of improved grassland adjacent to an ongoing housing development site.

### Results of Survey and Assessment

- iv. The proposals will have no adverse effect on statutory or non-statutory designated sites for nature conservation.
- v. A small 1m<sup>2</sup> area of plant species indicative of calcareous conditions is present (i.e. Salad Burnet) at the south-eastern end of the site. It is recommended that, if possible, this area is retained and incorporated into the site garden. Otherwise the site contains only common and widespread plant species. None of the habitats within the site are of significant interest in terms of their plant species composition. None of the habitats present are representative of semi-natural habitat. The NVC communities present are typical of the geographical area and conditions present.
- vi. No Priority Habitats are present within the site.
- vii. No invasive species listed on Schedule 9 of the *Wildlife and Countryside Act 1981* (as amended) were detected within the site.
- viii. The site supports features suitable for use by nesting birds. Measures for the protection of nesting birds and suitable features to incorporate into the site layout for nesting birds are presented at Section 5.0.
- ix. No other protected species have been detected.

### Recommendations

- x. The recommendations in **Section 5.0** address all the mandatory measures and ecological recommendations to be applied to ensure compliance with wildlife legislation, the National Planning Policy Framework (NPPF) and best practice.
- xi. The proposals will secure an opportunity to implement beneficial measures such as habitat management and habitat creation that will safeguard habitats for wildlife such as birds and bats, with the aim of providing a net gain in biodiversity in accordance with the principles of the NPPF.

### Conclusion

- xii. It is concluded that the proposals are feasible and acceptable in accordance with ecological considerations and relevant planning policy. Development at the site will provide an opportunity to secure ecological enhancement for wildlife associated with residential development.

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## 1.0 INTRODUCTION

### 1.1 Background and Rationale

- 1.1.1 ERAP (Consultant Ecologists) Ltd was commissioned by JJ Construction (NW) Ltd to carry out an ecological appraisal of land at Chatburn Old Road, Chatburn, Lancashire BB7 4AB (hereafter referred to as the 'site'). The Ordnance Survey (OS) grid reference at the centre of the site is SD 76616 44051.
- 1.1.2 An aerial image of the site and its surrounding habitats is appended at **Figure 8.1** (Source image: ESRI World Imagery).
- 1.1.3 The appraisal was requested in connection with a planning application to develop the site to a residential dwelling.

### 1.2 Scope of Works

- 1.2.1 The scope of ecological works undertaken in April 2019 comprised:
- A desktop study for known ecological information at the site and the local area;
  - An Extended Phase 1 Habitat Survey and assessment;
  - Assessment of the ecological value of the habitats within the site with the use of the National Vegetation Classification (NVC) and the Ratcliffe criteria, as presented in *A Nature Conservation Review* (Ratcliffe, 1977);
  - Survey and assessment of all habitats for relevant statutorily protected species<sup>1</sup> and other wildlife including badger (*Meles meles*), bird species and reptiles;
  - A licensed bat survey of any trees;
  - The identification of any potential ecological constraints on the proposals and the specification of the scope of mitigation and ecological enhancement required in accordance with wildlife legislation, planning policy guidance and other relevant guidance; and
  - The identification of any further surveys or precautionary actions that may be required prior to the commencement of any development activities.

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<sup>1</sup> In accordance with *Government Circular: Biodiversity and Geological Conservation – Statutory Obligations and Their Impact on the Planning System* (Ministry of Housing, Communities & Local Government, 2005) developers should not be required to undertake surveys for protected species unless there is reasonable likelihood of the species being present and affected by the development. In this instance there are no ponds within 500 metres of the site, and no ditches or other waterbodies within or adjacent to the site. There has therefore been no requirement to consider the likely presence of great crested newt (*Triturus cristatus*), water vole (*Arvicola amphibius*) or otter (*Lutra lutra*), for example.

## 2.0 METHOD OF SURVEY

### 2.1 Desktop Study

- 2.1.1 The following sources of information and ecological records were consulted:
- MAGiC: A web-based interactive map which brings together geographic information on key environmental schemes and designations, including details of statutory nature conservation sites;
  - Lancashire Biodiversity Action Plan (BAP); and
  - Previous ecological studies completed at the site, namely *2010-175 Land at Chatburn Old Road, Clitheroe: Ecological Survey and Assessment* (ERAP Ltd, 2010), *2014-119 Land at Chatburn Old Road, Clitheroe: Ecological Survey and Assessment* (ERAP Ltd, 2014) and *2017-432 Letter in Relation to LCC/2017/0087 Ecology Response Dated 28th November 2017, Land off Old Road, Chatburn, BB7 4AB* (ERAP (Consultant Ecologists) Ltd, 2017), hereafter the '2010, 2014 and 2017 ecology reports'
- 2.1.2 Note that the 2010, 2014 and 2017 ecology reports all covered a wider area than the site.
- 2.1.3 In accordance with *Guidelines for Accessing and Using Biodiversity Data* (CIEEM, 2016), the proposals at the site are small scale and will be of limited impact upon the site and local area. As such, it is considered that the purchase of ecological records (as provided by Lancashire Environment Record Network) is not required in this instance.

### 2.2 Vegetation and Habitats

- 2.2.1 An Extended Phase 1 Habitat Survey of the site was carried out by Brian Robinson on 25<sup>th</sup> April 2019. The weather was dry and overcast, with a light breeze (Beaufort scale 2) and an air temperature of 13°C. The conditions and time of year were suitable for the ecological survey.
- 2.2.2 A habitat and vegetation map was produced for the site and the immediate surrounding area at a scale of 1:500 (refer to **Figure 8.2**). The mapping is based on the Joint Nature Conservation Committee Phase 1 Habitat Survey methodology (JNCC, 2010) with minor adjustments to illustrate and examine the habitats with greater precision.
- 2.2.3 The plant species within the site boundary were determined with estimates of the distribution, ground cover, abundance and constancy of individual species. The estimation of abundance was based on the DAFOR system, where D = Dominant, A = Abundant, F = Frequent, O = Occasional and R = Rare, this being a widely used and accepted system employed by ecological surveyors. The terms L = Locally and V = Very were additionally used to describe the plant species distributions with greater precision.
- 2.2.4 Stands of vegetation and habitats were described and evaluated using the National Vegetation Classification (NVC). The NVC provides a systematic and comprehensive analysis of British vegetation and is a reliable framework for nature conservation and land-use planning.
- 2.2.5 Searches were made for uncommon, rare and statutorily protected plant species, those species listed as protected in the *Wildlife and Countryside Act 1981* (as amended) and species which are indicators of important and uncommon plant communities. Plant nomenclature follows *New Flora of the British Isles 3<sup>rd</sup> Edition* (Stace, 2010).
- 2.2.6 Searches were carried out for the presence of invasive species, including those listed on Schedule 9 of the *Wildlife and Countryside Act 1981* (as amended), including Japanese Knotweed (*Fallopia japonica*), Indian Balsam (*Impatiens glandulifera*) and Giant Hogweed (*Heracleum mantegazzianum*).

## 2.3 Animal Life

### Badger

- 2.3.1 The survey area for badger covered the site (as annotated on **Figures 8.1** and **8.2**) and extended to accessible land within a radius of 50 metres from the site boundary. Private gardens / land were excluded from the survey.
- 2.3.2 The survey was conducted in accordance with guidance presented within *Badgers and Development* (Natural England, 2007) and *Badgers: surveys and mitigation for development projects* (Natural England, 2015).
- 2.3.3 The following signs of badger activity were searched for:
- Sett entrances, e.g. entrances that are normally 25 to 35cm in diameter and shaped like a 'D' on its side;
  - Large spoil heaps outside sett entrances;
  - Bedding outside sett entrances;
  - Badger footprints;
  - Badger paths;
  - Latrines;
  - Badger hairs on fences or bushes;
  - Scratching posts; and
  - Signs of digging for food.
- 2.3.4 Habitats within and surrounding the site were assessed in terms of their suitability for use by foraging and sheltering badger in accordance with their known habitat preferences as detailed in current guidance and *Badger* (Roper, 2010).

### Bat Species

#### Daylight Survey

##### Survey Personnel

- 2.3.5 The site was assessed for its suitability to support roosting bats by Brian Robinson. Brian holds a Natural England Class Survey Licence WML CL18 (Bat Survey Level 2), Registration Number 2015-13161-CLS-CLS.
- 2.3.6 The surveyor's qualifications and experience meet the criteria as defined in the *Technical Guidance Series Competencies for Species Survey: Bats* (CIEEM, 2013).
- 2.3.7 A list of equipment used is detailed at **Table 2.1**, below:

**Table 2.1: Survey Equipment used during Daylight Bat Survey**

Ladders
Fenix HL50 head torch
Panasonic DMC- FT1 digital camera
8x20 binoculars
Ridgid Micro Inspection Camera Borescope CA-100

- 2.3.8 No buildings are present within the site. A preliminary assessment of the trees within the site was conducted to assess their suitability for use by roosting bats, and to inform whether further surveys or precautionary measures were required.

- 2.3.9 Trees were assessed from the ground using binoculars and a high-powered torch. Each tree was searched for the presence of the following features:

*Woodpecker holes, rot holes, hazard beams, other vertical or horizontal cracks or splits in stems and branches, partially decayed platey bark, knot holes, man-made holes, tear-outs, cankers in which cavities have developed, other hollows or cavities, including butt-rots, double-leaders forming compression forks with included bark, gaps between overlapping stems or branches, partially detached Ivy (Hedera helix) with stem diameters in excess of 50mm and bat, bird or dormouse (Muscardinus avellanarius) boxes.*

- 2.3.10 Terms used to describe any features present follow (where possible) those outlined and described in *Bat Tree Habitat Key, 2<sup>nd</sup> Edition* (Andrews, H (ed), 2013) and *Bat Roosts in Trees: A Guide to Identification and Assessment for Tree-care and Ecology Professionals* (BTHK, 2018).

### **Habitat Assessment for Commuting / Foraging Bats**

- 2.3.11 Habitats within and adjacent to the site were assessed for their value and suitability for commuting and foraging bats in accordance with Table 4.1 of *Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn)*, (Collins, J. (ed), 2016). Reference has been made using the following categories and descriptions / examples, presented at **Table 2.2**, below.

**Table 2.2: Consideration of Suitability of Foraging and Commuting Habitat for Bats**

<b>Suitability</b>	<b>Commuting Habitat</b>	<b>Foraging Habitat</b>
Negligible	Negligible habitat features on site likely to be used by commuting bats.	Negligible habitat features on site likely to be used by foraging bats.
Low	Habitat that could be used by small numbers of commuting bats such as a gappy hedgerow or unvegetated stream, but isolated i.e. not very well connected to the surrounding landscape by other habitat.	Suitable, but isolated habitat that could be used by small numbers of foraging bats such as a lone tree or patch of scrub.
Moderate	Continuous habitat connected to the wider landscape that could be used by bats for commuting such as lines of trees and scrub or linked back gardens.	Habitat that is linked to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland or water.
High	Continuous, high-quality habitat that is well connected to the wider landscape and is likely to be used regularly by commuting bats such as river valleys, streams, hedgerows, lines of trees and woodland edge. Habitats close to and connected to known roosts.	High-quality habitat that is well-connected to the wider landscape and is likely to be used regularly by foraging bats such as broadleaved woodland, tree-lined watercourses and grazed parkland. Habitats close to and connected to known roosts.

### **Bird Species**

- 2.3.12 Bird species observed and heard during the survey were recorded.
- 2.3.13 Habitats throughout the site and in the immediate surrounding area were assessed for their value to roosting, feeding and nesting birds, as indicated by the amount of shelter, feeding value, woody vegetation structure and species diversity of tree and shrub species in the site.

### **Reptile Species**

- 2.3.14 The site and its surroundings were assessed in terms of their suitability for use by reptile species using the important characteristics for reptiles outlined in the draft document '*Reptile Mitigation Guidelines*' (Natural England, 2011), and the *Reptile Habitat Management Handbook* (Edgar, et al., 2010). These habitat characteristics are outlined in **Table 2.3**, below.



**Table 2.3: Important Habitat Characteristics for Reptiles**

1. Location (in relation to species range)	7. Connectivity to nearby good quality habitat
2. Vegetation Structure	8. Prey abundance
3. Insolation	9. Refuge opportunity
4. Aspect	10. Hibernation habitat potential
5. Topography	11. Disturbance regime
6. Surface geology	12. Egg-laying site potential

## 2.4 Survey and Reporting Limitations

- 2.4.1 The whole site was accessible and the survey was completed at a suitable time of year. No survey limitations were experienced.
- 2.4.2 All measurements have been either estimated whilst on site or measured using QGIS or internet-based mapping software, such as MAGiC Map and Google Earth.

## 2.5 Evaluation Methodology

- 2.5.1 The habitats, vegetation and animal life were evaluated with reference to standard nature conservation criteria as described in *A Nature Conservation Review* (Ratcliffe, 1977) and *Guidelines for the Selection of Biological SSSIs* (Bainbridge, et al., 2013). These are size (extent), diversity, naturalness, rarity, fragility, typicality, recorded history, position in an ecological or geographical unit, potential value and intrinsic appeal.
- 2.5.2 Habitats have been assessed to determine whether they meet those described in *UK Biodiversity Action Plan: Priority Habitat Descriptions* (Maddock, A (ed), 2008); these lists are used to help draw up the statutory lists of Priority Habitats, as required under Section 41 of the *Natural Environment and Rural Communities (NERC) Act 2006*. Where suitable, the ecological value of the habitats present have been assessed using the terms outlined in *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine* (CIEEM, 2018).
- 2.5.3 Government advice on wildlife, as set out in the *National Planning Policy Framework* (Ministry of Housing, Communities and Local Government, 2019) and associated government circulars has been taken into consideration. Legislation relating to protected species, such as those listed under Schedules 1, 5, 6 and 8 of the *Wildlife and Countryside Act 1981* (as amended) and *The Conservation of Habitats and Species Regulations 2017*, is referenced where applicable, and any impacts to protected species are evaluated in accordance with current guidance.
- 2.5.4 The presence of any Priority Species, as listed under Section 41 of the *Natural Environment and Rural Communities (NERC) Act 2006* is noted, and habitats are assessed in terms of their suitability and value for these species. The presence of habitats and/or species listed by the Lancashire BAP Provisional Long List has been taken into account in the evaluation of the site.

## 3.0 SURVEY RESULTS

### 3.1 Desktop Study

#### Designated Sites for Nature Conservation

3.1.1 As detailed in the 2014 ecology report, two statutory designated sites, comprising one Site of Special Scientific Interest (SSSI) and one Important Bird Area (IBA) are present within 1 kilometre of the site boundary. A further locally designated (non-statutory) site, named a Biological Heritage Site in Lancashire, is present within one kilometre of the site boundary. The details of each of these site are given at **Table 3.1**, below.

**Table 3.1: Designated Sites within 1 Kilometre of the Site.**

Name and Designation & OS Grid reference	Distance and direction from Site	Description/Reason for Designation
Clitheroe Knoll Reefs SSSI SD 778 435	700 metres east and 650 metres south	A road cutting and series of small hills which are important examples of early Carboniferous 'knoll-reefs'.
Forest of Bowland IBA SD 774 438	600 metres east	Forms a western outlier to the Pennines, with gentle slopes and level ground on ridges. Fast-flowing streams drain an extensive area of upland moorland and blanket mire and Bracken may dominate on lower ground. The IBA supports a typical range of breeding upland birds, and is a breeding stronghold of hen harrier. The site holds 12,000 pairs of breeding waterbirds on a regular basis, and is nationally important for breeding lapwing (3,570 pairs, 1993, 2%) and curlew (895 pairs, 1993, 2%).
Bellman Farm Marsh SD 759 434	690 metres south-west	Woodland, scrub, grassland, swamp and fen and artificial habitats.

3.1.2 The site lies within a Site of Special Scientific Interest (SSSI) Impact Risk Zone for Clitheroe Knoll Reefs. The SSSI Impact Risk Zone requires the Local Planning Authority to consult with Natural England on likely risks from the following development categories (Ordnance Survey, 2019):

- a. Planning applications for quarries, including: new proposals, Review of Minerals Permissions, extensions, variations to conditions etc. Oil and gas exploration / extraction;
- b. Livestock and poultry units with floorspace greater than 500m<sup>2</sup>, slurry lagoons greater than 4000m<sup>2</sup>; and
- c. General combustion processes greater than 50 megawatts energy input, including energy from waste incineration, other incineration, landfill gas generation plant, pyrolysis / gasification, anaerobic digestion, sewage treatment works, and other incineration / combustion.

3.1.3 The presence of the designated sites and SSSI Impact Risk Zone is considered further at **Section 4.2**, below.

#### Vegetation and Habitats

3.1.4 The 2010, 2014 and 2017 ecology reports all covered a wider area of approximately 2.3 hectares; a portion of this area is now currently under construction for approved residential dwellings and is in use as a temporary works area.

3.1.5 Areas of the wider site (in 2010 and 2014) were detected to support calcareous grassland; this had been removed in 2017 due to construction on the site and due to infilling with soil at the housing site's margins. On 21<sup>st</sup> December 2017 (the date of the 2017 survey) no areas of remaining calcareous grassland could be detected.

- 3.1.6 It is understood that all matters relating to the removal and any compensation for the removal of the calcareous grassland prior to this report will be dealt with separately to this application; the site has been evaluated in this report in terms of the habitats currently present.

### Protected and Notable Species

- 3.1.7 No records of protected species were reported for the site by LERN in 2010. The Lancashire Biodiversity Action Plan (BAP) provisional long list species Fragrant Orchid and White Bryony have been recorded within 500 metres of the site. A single record of a pipistrelle (*Pipistrellus* sp.) bat species has been recorded within 500 metres of the site.
- 3.1.8 No protected species were detected by the surveys described in the 2010, 2014 or 2017 ecology reports.

### 3.2 Vegetation and Habitats

- 3.2.1 A Phase 1 Habitat Survey map is appended at **Figure 8.2**, and can be referred to for all habitat descriptions. Photographs are appended at **Section 8.2**.
- 3.2.2 The approximately 0.095 hectare site is located in a largely rural area to the east of Chatburn village. The northern site boundary is defined by a mortared stone wall and shrubs, beyond which lies Chatburn Old Road and plantation woodland. The eastern site boundary is defined by fencing, beyond which lies residential housing. The southern site boundary is not defined by any landscape feature but lies within the improved grassland field. The western site boundary is defined by fencing, beyond which lies recently constructed residential housing and an ongoing construction site.
- 3.2.3 Refer to **Photo 1**. A mortared stone wall and row of Hawthorn (*Crataegus monogyna*) shrubs and Bramble (*Rubus fruticosus* agg.) scrub is present at the northern site boundary. The wall supports very locally frequent Garlic Mustard (*Alliaria petiolata*), Herb-Robert (*Geranium robertianum*), Ash (*Fraxinus excelsior*) saplings, Ivy (*Hedera helix*), Common Nettle (*Urtica dioica*), Ramsons (*Allium ursinum*), Ivy-leaved Toadflax (*Cymbalaria muralis*) and Lords-and-Ladies (*Arum maculatum*).
- 3.2.4 The vegetation is indicative of the *W21 Hawthorn - Ivy scrub* and *W24 Bramble – Yorkshire-fog underscrub* communities of the NVC (Rodwell, 1991).
- 3.2.5 Refer to **Photo 2**. The majority of the site supports improved grassland which is infrequently mown. The grassland is characterised by constant and frequent Perennial Rye-grass (*Lolium perenne*) and Cock's-foot (*Dactylis glomerata*), occasional and locally frequent Broad-leaved Dock (*Rumex obtusifolius*), Creeping Buttercup (*Ranunculus repens*), Creeping Bent (*Agrostis stolonifera*), Lesser Celandine (*Ficaria verna*), Meadow Foxtail (*Alopecurus pratensis*), Timothy (*Phleum pratense*), Crested Dog's-tail (*Cynosurus cristatus*), Creeping Thistle (*Cirsium arvense*), Tufted Hair-grass (*Deschampsia cespitosa*) and Meadow Buttercup (*Ranunculus acris*).
- 3.2.6 A plant species list is appended at **Table 8.1**. The vegetation is indicative of an *MG7 Perennial Rye-grass* leys and related grasslands of the NVC (Rodwell, 1992).
- 3.2.7 Refer to **Photo 3**. A single plant of Salad Burnet (*Sanguisorba minor*) was detected at the south-eastern corner of the site, with locally frequent Springy Turf-moss (*Rhytidiadelphus squarrosus*), Red Fescue (*Festuca rubra*) and Hawkweed species (*Hieracium* sp.). It is considered this 1m<sup>2</sup> area is a remnant of the former larger area of calcareous grassland detected at the site.

### Invasive Species

- 3.2.8 No invasive plant species listed on Schedule 9 of the *Wildlife and Countryside Act 1981* (as amended) were detected within the site.

### 3.3 Animal Life

#### Badger

- 3.3.1 No badger or signs of badger were detected within the site or within the accessible 50 metres around the site. The presence of badger is reasonably discounted.

#### Bat Species

- 3.3.2 None of the shrubs within the site support any features suitable for use by roosting bats. The presence of roosting bats is reasonably discounted at the site.
- 3.3.3 The site is small and the habitats present are of negligible to low suitability for use by foraging and commuting bats, although they may form part of a wider foraging area for common species such as common pipistrelle (*Pipistrellus pipistrellus*).

#### Bird Species

- 3.3.4 Birds detected in the site in April 2019 are listed in **Table 3.3**, below.

**Table 3.2: Bird species Detected on 25<sup>th</sup> April 2019**

Scientific Name	Common Name (number seen)	BOCC Status <sup>1</sup>	Priority Species?
<i>Cyanistes caeruleus</i>	Blue tit	Green	
<i>Erithacus rubecula</i>	Robin	Green	
<i>Pica pica</i>	Magpie	Green	
<i>Turdus merula</i>	Blackbird	Green	

<sup>1</sup>BOCC: Birds of Conservation Concern (Eaton, et al., 2015)

#### Reptiles

- 3.3.5 The recently heavily disturbed habitats within the site provide poor quality habitat for sheltering, basking and hibernating reptiles. There are no piles of garden waste or other suitable debris for use by sheltering or hibernating reptiles, and the site supports no favourable habitat for basking reptiles. The species-poor habitats within the site are reasonably unlikely to support a large populations or a variety of invertebrate prey.
- 3.3.6 The site is not adjacent or linked to any areas of favourable habitat for reptile species, and there are no records of reptile for the site or the wider area. The presence of reptiles within the site is reasonably discounted.

## 4.0 EVALUATION AND ASSESSMENT

### 4.1 Introduction and Description of Proposals

In accordance with *Hare Hill Croft, Old Road, Chatburn: Site Boundaries: 2348 Rev. A* (JJ Construction (NW) Ltd, 2019), it is proposed to develop the site to a residential dwelling.

- 4.1.1 **Section 4.2** provides an assessment of any impacts of the proposed development on the designated sites in the wider area. The ecological value of habitats within the site are evaluated at **Section 4.3**, and the presence of protected and notable species is considered at **Section 4.4**.

### 4.2 Designated Sites for Nature Conservation

- 4.2.1 It is considered that the site is sufficiently distant and small from all designated sites for nature conservation that the proposed development will have no impact upon them.

### 4.3 Vegetation and Habitats

- 4.3.1 The shrubs and 1m<sup>2</sup> area of calcareous grassland are of 'site' value only. It is not considered that sufficient calcareous grassland remains present at the site to be representative of Priority Habitat, nor of any ecological value beyond enhancing the diversity of habitats within the site itself.
- 4.3.2 If possible the 1m<sup>2</sup> area should be retained and protected and incorporated into the garden of the proposed residential dwelling. In order that access to the site can be achieved it is considered unlikely that retaining the shrubs will be feasible; compensatory planting is recommended at **Section 5.5**.
- 4.3.3 Otherwise none of the habitats within the site are of significant interest in terms of their plant species composition. None of the habitats present are representative of semi-natural habitat. The NVC communities present are typical of the geographical area and conditions present.
- 4.3.4 No invasive plant species listed under Schedule 9 of the *Wildlife and Countryside Act 1981* (as amended) are present.

### 4.4 Protected Species and Other Wildlife

- 4.4.1 Habitats within and adjacent to the site are suitable for foraging and commuting bats. Recommendations relating to the retention of features suitable for use by foraging and commuting bats, and features to enhance habitats for roosting bats at the site are presented at **Section 5.3**.
- 4.4.2 The shrubs provide suitable foraging and nesting habitat for the species of birds detected within the site. Consideration of birds (including protection of breeding birds and recommended enhancements for Priority Species) are presented at **Section 5.4** of this report.

## 5.0 RECOMMENDATIONS AND ECOLOGICAL ENHANCEMENT

### 5.1 Introduction

- 5.1.1 These recommendations aim to ensure that the development is implemented in accordance with relevant wildlife legislation, Natural England guidance, the principles of the National Planning Policy Framework (NPPF), local planning policy and best practice.
- 5.1.2 In accordance with Chapter 15, paragraph 175 point 'd' of the NPPF, when determining planning applications, local planning authorities should encourage opportunities to incorporate biodiversity improvements in and around developments, especially where this can secure measurable net gains for biodiversity.
- 5.1.3 Where possible, opportunities to enhance the ecological interest and habitat connectivity and seek biodiversity gain through appropriate landscape planting and habitat creation have been identified, as required by the NPPF and other relevant planning documents.
- 5.1.4 All recommendations are appropriate to the geographical area, the habitats in the wider area, the wildlife present in the local area (and likely to use the site post-construction) and take into consideration the end use of the site as a residential development.

### 5.2 Protection of Existing Vegetation and Recommendations in Relation to Site Layout

- 5.2.1 If possible the 1m<sup>2</sup> section of calcareous grassland will be retained in included within the garden area of the proposed development.
- 5.2.2 During the construction phase, temporary protective demarcation fencing will be used to protect the trees beyond the site boundary and any shrubs to be retained. The fencing must extend outside the canopy of

the retained trees and must remain in position until all areas have been developed to ensure protection is provided throughout the construction phase.

- 5.2.3 The fencing will be in accordance with BS5837:2012 *Trees in Relation to Design, Demolition and Construction: Recommendations* (BSI, 2012).

### 5.3 Bats

#### Lighting

- 5.3.1 Paragraph 180, bullet point 'c' in Chapter 15 (conserving and enhancing the natural environment) of the NPPF states that development should:

*'limit the impact of light pollution from artificial light on local amenity, intrinsically dark landscapes and nature conservation.'*

#### **Development Lighting Design**

- 5.3.2 The lighting scheme to be implemented at the developed site must involve the use of appropriate products and screening, where necessary, to ensure no excessive artificial lighting shines over the areas of ecological enhancement and any landscape planting, as lighting overspill may deter use by wildlife such as foraging bats.
- 5.3.3 The lighting scheme will be designed with reference to current guidance, namely:
- Guidance Note 8: Bats and Artificial Lighting in the UK* (Institution of Lighting Professionals & Bat Conservation Trust, 2018); and
  - Bats and lighting: Overview of current evidence and mitigation guidance* (Stone, 2014).

#### **Enhancing Habitats for Roosting Bats**

- 5.3.4 It is recommended that the development incorporates the installation of a commercially available bat access panel at the new building.
- 5.3.5 The bat access panel should be sited at least four metres above ground level, ideally facing or close to areas of landscape planting or existing linear features. The access panels should not be positioned over windows or doorways where bat droppings may become a nuisance. Once the development layout has been finalised, an Ecologist should advise on appropriate positions for the bat access panels. Suitable bat access panels are available from NHBS Ecology ([www.nhbs.com](http://www.nhbs.com)) or Wild Care ([www.wildcare.co.uk](http://www.wildcare.co.uk)) and are presented at **Insert 1**, below:



**Insert 1:** Example of commercially available bat access panels.

## 5.4 Birds

### Protection

- 5.4.1 All wild birds are protected under the *Wildlife and Countryside Act 1981* (as amended) while they are breeding. It is advised that any works such as vegetation clearance that will affect habitats suitable for use by nesting birds are scheduled to commence outside the bird nesting season. Commencement of works in the nesting season must be informed by a pre-works nesting bird survey, carried out by a suitably experienced ecologist. The bird breeding season typically extends between March to August inclusive.
- 5.4.2 If breeding birds are detected the ecologist will issue guidance in relation to the protection of the nesting birds in conjunction with the scheduled works. This may involve cordoning off an area of the site until the young birds have fledged.

### Enhancing Habitats for Nesting Birds

#### *House Sparrow*

- 5.4.3 House sparrows are associated with suburban areas. Monitoring suggests a severe decline in the UK house sparrow population, estimated as halving in rural areas, and dropping by 60% in towns and cities since the mid-1970's (RSPB, 2018).
- 5.4.4 The installation of a house sparrow terrace nest box is recommended at the proposed new housing. The box will not be positioned over windows or doorways where droppings may become a nuisance. RSPB advice states that boxes should ideally be sited facing north to east, to avoid exposure to direct sunlight, which may cause overheating of chicks in the nest. An example of a suitable house sparrow bird box is given below at **Insert 2**:



**Insert 2:** House Sparrow Nesting Terrace

- 5.4.5 Such bird boxes are available from the NHBS ([www.nhbs.com](http://www.nhbs.com)) or Wild Care ([www.wildcare.co.uk](http://www.wildcare.co.uk)). ERAP (Consultant Ecologists) Ltd will advise on the siting of bird boxes.

## 5.5 Landscape Planting

- 5.5.1 It is recommended that the landscape planting within the residential site is composed from native species and species known to be of value for the attraction of wildlife.
- 5.5.2 It is recommended that trees which support blossom and fruit which will attract insects are incorporated into the landscape planting. Suitable species are presented at **Table 5.1**, below.

**Table 5.1: Suitable Native Species for Tree and Shrub Planting**

Scientific Name	Common Name	Scientific Name	Common Name
<i>Acer campestre</i>	Field Maple	<i>Prunus spinosa</i>	Blackthorn
<i>Corylus avellana</i>	Hazel	<i>Rosa arvensis</i>	Field Rose
<i>Crataegus monogyna</i>	Hawthorn	<i>Rosa canina</i>	Dog-rose
<i>Ilex aquifolium</i>	Holly	<i>Sambucus nigra</i>	Elder
<i>Malus sylvestris</i>	Crab Apple	<i>Sorbus aucuparia</i>	Rowan
<i>Prunus avium</i>	Wild Cherry	<i>Ulmus glabra</i>	Wych Elm
<i>Prunus padus</i>	Bird Cherry	<i>Viburnum opulus</i>	Guelder Rose

- 5.5.3 The understorey and ground cover planting design should be prepared to optimise the attraction of invertebrates such as feeding bumblebees and butterflies. Where possible the use of native species should be maximised but where necessary non-native species known to be attractive to invertebrates should be used.
- 5.5.4 Planting schemes that include flowering species such as *Viburnum*, *Ceanothus*, *Hebe*, *Lavandula*, *Lonicera*, *Potentilla*, *Rosmarinus* and *Vinca* can maximise opportunities for feeding invertebrates and for the attraction of foraging bats and birds.
- 5.5.5 For further plants suitable for the attraction of pollinators please refer to the *Perfect for Pollinators Plant List* (Royal Horticultural Society, 2012). It is recommended that the selection of plant species at the site ensures that a variety of flowering species are available throughout the year.

## 6.0 CONCLUSION

- 6.1 This ecological appraisal has demonstrated that a residential development at the site is feasible and acceptable in accordance with ecological considerations and the National Planning Policy Framework.
- 6.2 It is possible to implement reasonable actions for the protection and long-term conservation of fauna such as nesting birds and commuting/foraging bats associated with the site.
- 6.3 Development at the site will provide an opportunity to secure ecological enhancement for fauna typically associated with residential areas such as breeding birds and roosting bats.



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## 8.0 APPENDIX: TABLES, PHOTOGRAPHS AND FIGURES

### 8.1 Plant Species List

**Table 8.1: Plant Species List for Grassland Within the Site**

Scientific Name	Common Name	DAFOR	% Cover
<b>Woody Species</b>			
<i>Acer pseudoplatanus</i>	Sycamore (sapling)	R	<1%
<i>Crataegus monogyna</i>	Hawthorn	VLF	<1%
<i>Ilex aquifolium</i>	Holly	R	<1%
<i>Sambucus nigra</i>	Elder	R	<1%
<b>Herb Species</b>			
<i>Agrostis stolonifera</i>	Creeping Bent	O/LF	5%
<i>Alopecurus pratensis</i>	Meadow Foxtail	O/LF	5%
<i>Anthriscus sylvestris</i>	Cow Parsley	VLF	<1%
<i>Arum maculatum</i>	Lords-and-Ladies	VLF	<1%
<i>Brassica</i> sp.	Brassica sp.	O/VLF	<1%
<i>Cardamine flexuosa</i>	Wavy Bitter-cress	R	<1%
<i>Cardamine pratensis</i>	Cuckooflower	O	<1%
<i>Cirsium arvense</i>	Creeping Thistle	O/LF	1%
<i>Cynosurus cristatus</i>	Crested Dog's-tail	O/LF	5%
<i>Dactylis glomerata</i>	Cock's-foot	F*	30%
<i>Daucus carota</i>	Carrot	R	<1%
<i>Deschampsia cespitosa</i>	Tufted Hair-grass	O/LF	10%
<i>Epilobium hirsutum</i>	Great Willowherb	VLF	<1%
<i>Festuca rubra</i>	Red Fescue	O/LF	<1%
<i>Ficaria verna</i>	Lesser Celandine	O/LF	1%
<i>Galium aparine</i>	Cleavers	VLF	1%
<i>Geranium molle</i>	Dove's-foot Crane's-bill	VLF	<1%
<i>Geranium robertianum</i>	Herb-Robert	R	<1%
<i>Heracleum sphondylium</i>	Hogweed	O*	1%
<i>Hieracium</i> sp.	Hawkweed species	VLF	<1%
<i>Holcus lanatus</i>	Yorkshire-fog	F*	20%
<i>Juncus effusus</i>	Soft-rush	R	<1%
<i>Lathyrus pratensis</i>	Meadow Vetchling	VLF	<1%
<i>Lolium perenne</i>	Perennial Rye-grass	F*	40%
<i>Lotus corniculatus</i>	Common Bird's-foot-trefoil	R	<1%
<i>Luzula campestris</i>	Field Wood-rush	R	<1%
<i>Phalaris arundinacea</i>	Reed Canary-grass	R	<1%
<i>Phleum pratense</i>	Timothy	O/LF	5%
<i>Plantago lanceolata</i>	Ribwort Plantain	LF	<1%
<i>Poa annua</i>	Annual Meadow-grass	R	<1%
<i>Potentilla anserina</i>	Silverweed	R	<1%
<i>Potentilla reptans</i>	Creeping Cinquefoil	R	<1%
<i>Ranunculus acris</i>	Meadow Buttercup	O/LF	1%
<i>Ranunculus repens</i>	Creeping Buttercup	O/LF*	5%
<i>Rhytiadelphus squarrosus</i>	Springy Turf-moss	O/VLA	<1%
<i>Rubus fruticosus</i> agg.	Bramble	O/LF	1%
<i>Rumex obtusifolius</i>	Broad-leaved Dock	O/VLF	1%
<i>Sisymbrium officinale</i>	Hedge Mustard	O	<1%
<i>Stachys sylvatica</i>	Hedge Woundwort	R	<1%
<i>Taraxacum officinale</i> agg.	Dandelion	O/VLF	<1%
<i>Trifolium repens</i>	White Clover	O/VLF	<1%
<i>Tussilago farfara</i>	Colt's-foot	VLF	<1%
<b>Continued overleaf</b>			

Scientific Name	Common Name	DAFOR	% Cover
<i>Table 8.1 continued</i>			
<i>Urtica dioica</i>	Common Nettle	VLF	1%
<i>Vicia cracca</i>	Tufted Vetch	VLF	<1%
<b>Key to DAFOR:</b> D=Dominant, A=Abundant, F=Frequent, O=Occasional, R=Rare, V=Very, L=Local and *denotes a constant species			

## 8.2 Photographs



**Photo 1:** Wall and Hawthorn shrubs at northern site boundary



**Photo 2:** Improved grassland within the site



**Photo 3:** 1m<sup>2</sup> area where single Salad Burnet plant was detected

### 8.3 Figures

**Figure 8.1: Aerial Image of the Site and its Surrounding Habitats**



**Figure 8.2: Phase 1 Habitat Map**

