

Preliminary Ecological Appraisal

The Cottage, Shripney Road
Bognor Regis, West Sussex

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LIABILITIES:

Whilst every effort has been made to guarantee the accuracy of this report, it should be noted that living animals and plants are capable of migration/establishing and whilst such species may not have been located during the survey duration, their presence may be found on a site at a later date.

This report provides a snap shot of the species that were present at the time of the survey only and does not consider seasonal variation. Furthermore, where access is limited or the site supports habitats which are densely vegetated only dominant species maybe recorded.

The recommendations contained within this document are based on a reasonable timeframe between the completion of the survey and the commencement of any works. If there is any delay between the commencement of works that may conflict with timeframes laid out within this document, or have the potential to allow the ingress of protected species, a suitably qualified ecologist should be consulted.

It is the duty of care of the landowner/developer to act responsibly and comply with current environmental legislation if protected species are suspected or found prior to or during works.

1.0 Introduction

Background

- 1.1 The Ecology Partnership was commissioned by Castle Property Developments to undertake a preliminary ecological appraisal for land at The Cottage, Shripney Road, Bognor Regis, West Sussex, PO22 9PA.
- 1.2 This report presents the results of The Ecology Partnership's surveys in and around the site, which aims specifically to assess the site's potential to support protected species and protected habitats that may be affected by the proposed development.
- 1.3 Section 2 of this report sets out the methodologies of the Ecology Partnership's surveys. In section 3 the results of the surveys are presented. Discussions and implications for development are found in section 4, including general site enhancements. Conclusions drawn from the report are presented in section 5.

Site Context and Status

- 1.4 The site is located on land at The Cottage on Shripney Road in Bognor Regis, West Sussex (SU 93834 02327). The site covers approximately 0.86ha and includes a house and garden with a glasshouse and a boundary of trees and hedgerows. The site is directly adjacent to a public house and hotel. The site is surrounded by a mosaic of agricultural fields and medium-density housing. There is one statutory designation, a Local Nature Reserve (LNR) within 2km of the site.
- 1.5 The aerial photograph below (Figure 1) shows the site and its immediate surroundings. The red line depicts the approximate site boundary and survey area.



Figure 1: Approximate location of the red line boundary (Blue line indicated public footpath which is outside the development site)

Description of Proposed Development

- 1.6 Outline planning application for 20 new houses and flats, plus a replacement dwelling (21 units in total) following the demolition of the existing dwelling and outbuildings. Although the plans are indicative in their nature, the proposals provide for car parking, landscaping and associated infrastructure, with access to be provided from Shripney Road (A29). Aside from access, all other matters are reserved at this stage.

Planning Policies

- 1.7 National and local planning policies may have an effect on the proposed development. The following paragraphs identify relevant planning policies and discuss these in the context of the site.
- 1.8 Under the Natural Environment and Rural Communities (NERC) Act 2006, *“Every public authority must, in exercising its functions, have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity”*. In order to comply with this ‘Biodiversity Duty’, planning decisions must ensure that they adequately consider the potential ecological impacts of a proposed development.
- 1.9 In compliance with Section 41 of the NERC Act, the Secretary of State has published a list of species and habitats considered to be of principle importance for conserving biodiversity. These were known as BAP habitats and species. The UK BAP lists of priority species and habitats remain an important and valuable reference certainly at county levels. However, the UK Post 2010 Biodiversity Framework (published 2012) has succeeded BAP. It was produced by JNCC and Defra, on behalf of the Four Countries’ Biodiversity Group (4CBG), through which the environment departments of all four governments in the UK work together to achieve the ‘Aichi Biodiversity Targets’ and the aims of the EU biodiversity strategy.
- 1.10 National policy guidance is provided by National Planning Policy Framework (NPPF), which sets out the Government’s planning policies for England and how they should be applied. Section 11 of the document is entitled ‘Conserving and Enhancing the Natural Environment’. This section highlights the following:

“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."*

1.11 In addition to this the following paragraphs are also considered to be relevant:

"In preparing plans to meet development needs, the aim should be to minimise pollution and other adverse effects on the local and natural environment. Plans should allocate land with the least environmental or amenity value, where consistent with other policies in this Framework."

"Planning policies and decisions should encourage the effective use of land by re-using land that has been previously developed (brownfield land), provided that it is not of high environmental value. Local planning authorities may continue to consider the case for setting a locally appropriate target for the use of brownfield land."

1.12 The site falls under the jurisdiction of Arun District Council. A new Local Plan is currently being developed. Until then, saved policies from the Local Plan adopted in 2003 are relevant to the site and relating to nature conservation:

Policy GEN28 – Trees and Woodlands

"Development will not be permitted if it would damage or destroy one or more trees protected by a tree preservation order, identified as ancient woodland or in a conservation area unless:

- *the removal of one or more trees would be in the interested of good arboricultural practice; or*
- *the benefits of the proposed development outweigh the amenity value of the protected trees.*

Conditions may be used to ensure that, for any trees which are removed as part of a development, an equivalent number are planted on the site."

Policy GEN29 – Natural Conservation Across the District

“Development will only be permitted on sites which contain semi-natural habitats, features of nature conservation interest, or within wildlife corridors, where these can be largely retained and sympathetically incorporated into the scheme. Legal agreements may be used to offset the loss of, or impact on, any nature conservation resource present on the site prior to development.”

Policy AREA14 – Sites of National Importance for Nature Conservation

“Proposals for development in, or likely to affect (directly or indirectly) Sites of Scientific Interest will be subject to special scrutiny. Where such development is likely to have an adverse effect, it will not be permitted unless the reasons for the development clearly outweigh the nature conservation value of the site itself and the national policy to safeguard the national network of such sites.

Where the site concerned is a National Nature Reserve, a site identified by the Nature Conservation Review or Geological Conservation Review, particular regard will be paid to the national importance of that site.

Where development is permitted, harm to the nature conservation interest must be minimised. The use of conditions or planning agreements will be considered to ensure the protection and enhancement of the nature conservation interest, and to provide appropriate compensatory or mitigation measures and site management.”

Policy AREA15 – Sites of Local Importance for Nature Conservation

“Proposals for development in, or likely to have an adverse effect (directly or indirectly) on a Local Nature Reserve, Site of Nature Conservation Importance (including ancient woodland or wildlife corridors) or Regionally Important Geological/Geomorphological Site will not be permitted unless it can be demonstrated that reasons for the proposal outweigh the need to safeguard the nature conservation value of the site/feature. Where development is permitted which would damage the nature conservation value of the site/feature, such damage should be kept to a minimum.

Conditions or planning obligations will be used to secure necessary compensatory or mitigation measures, enhancement and site management.

Where appropriate, the Authority will consider the use of legal agreements to provide appropriate compensatory measures, enhancement and site management."

- 1.13 The site was surveyed to assess its ecological value and to ensure compliance with national and local plan policies. The report has been produced with reference to current guidelines for preliminary ecological appraisal (CIEEM 2013) and in accordance with BS 42020:2013 Biodiversity – Code of Practice for Planning and Development.

2.0 Methodology

Desktop Study

- 2.1 A desktop study search was completed using an internet-based mapping service (www.magic.gov.uk) for statutory designated sites and internet-based aerial mapping services (maps.google.co.uk) were used to understand the habitats present in and around the survey area and habitat linkages and features (ponds, woodlands etc.) within the wider landscape.

Preliminary Ecological Appraisal

- 2.2 An extended preliminary ecological appraisal was undertaken on 1 September 2016 by ecologists Chris Jennings BSc (Hons) MSc MCIEEM and Emma Bagguley BSc (Hons) MSc. The surveyors identified the habitats present, following the standard 'Phase 1 habitat survey' auditing method developed by the Joint Nature Conservancy Council (JNCC). The site was surveyed on foot and the existing habitats and land uses were recorded on an appropriately scaled map (JNCC 2010). In addition, the dominant plant species in each habitat were recorded. The potential for the site to support protected species was also assessed.

Internal and External Bat Surveys

- 2.3 An internal and external examination of the buildings was undertaken. Buildings that are considered to have a high potential to support roosting bats would include the following:
- Agricultural buildings (e.g. farmhouses, barns and out buildings) of traditional brick or stone construction and/or with exposed beams;
 - Buildings with weather boarding and/or hanging tiles that are within 200m of woodland and/or water;
 - Pre 1960s detached buildings and structures within 200m of woodland and/or water;
 - Pre 1914 buildings within 400m of woodland and/or water;
 - Pre 1914 buildings with gable ends or slate roofs regardless of location;
 - Buildings which are located within or immediately adjacent to woodland and/or immediately adjacent to water;
 - Dutch barns or livestock buildings with a single skin roof and board and gap or Yorkshire boarding if, following a preliminary roost assessment the site, appear to be particularly suited to bats.
- 2.4 The surveyors assessed the buildings visually and searched for evidence such as:
- Staining beneath or around a hole caused by natural oils in bat fur.
 - Bat droppings beneath a hole, roost or resting area.
 - Audible squeaking from within a hole.
 - Insects (especially flies) around a hole.
 - Dead bats.
- 2.5 The buildings were assessed during the day. An external investigation assessed the tiles, any weatherboarding and structural timber joints of the building. This was undertaken in order to see if there were access points readily available for bats to utilise or crevices that bats could be roosting in.

Tree Assessment for Bats

- 2.6 Roosts of bats in trees may be identified from the following field signs:
- Black stains beneath cracks, splits and other features where bat droppings have fallen;
 - Dark marks at entrance points where bats have rubbed against the wood and left natural body oils;
 - Feeding remains beneath roosts, such as insect wings;
 - Chattering of bats;
 - Bat droppings under access points;
 - Scratch marks around a feature (cavity or split) caused by bat claws;
 - Urine stains below the entrance or end of split;
 - Large roosts or regularly used sites may produce an odour;
 - Flies around the entrance, attracted by the smell of guano.
- 2.7 The trees on site were assessed for their potential to support roosting bats. The trees were assessed visually for evidence of bats as well as for features that increase the likelihood such as the following:
- Woodpecker holes, natural cracks and rot holes in trunks and branches;
 - Frost cracks;
 - Trunk and branch splits;
 - Hollow sections of trunk and branches;
 - Loose bark;
 - Cavities beneath old root buttresses and coppice stools;
 - Dense epicormic growth;
 - Dense ivy cover.
- 2.8 Trees scheduled for arboricultural work should also be assessed, and may be categorised (Table 1) to relate the value of their features to recommended actions. This approach allows trees to be graded according to their potential to support bat roosts. Trees may be assessed as having the potential to support bats (from an individual to a larger roost) even if no bats have been found.

Table 1: Protocol for visual inspection of trees due to assess their value to bats
(Bat Conservation Trust 2016)

Suitability	Roosting habitat description
Negligible	Negligible habitat features on-site likely to be used by roosting bats.
Low	A tree of sufficient size and age to contain potential roosting features but with none seen from the ground or features seen with only very limited roosting potential.
Moderate	A tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status.
High	A tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat.

Bat Emergence Surveys and Re-Entry Surveys

- 2.9 A Dusk emergence survey was carried out on the 19th September 2016 and a dawn return to roost survey was carried out on 23rd September 2016. The survey work was undertaken by Chris Jennings BSc (Hons) MSc MCIEEM, Tom Rothero BSc (Hons) MSc MCIEEM, Dr Jonty Denton BSc (Hons) D(Phil) FRES FLS CEcol MCIEEM and Emma Baggluey BSc (Hons) MSc. During the surveys all activity including emergence points from the building were recorded. The surveys followed BCT guidelines (2016). Prior to the surveys the building was inspected externally in order to assess features of interest and all potential exit locations. Surveyors were positioned in such a way in order to cover areas of interest and record any flyovers and activity around the building. In addition several trees with potential roosting features were also monitored.
- 2.10 Dusk surveys started 30 minutes before sunset and observations were maintained up to 2 hours after sunset. Bats usually emerge about twenty minutes after sunset depending on the species, light level, weather conditions and time of year. Peak activity will normally last for about two hours after sunset, during times of peak insect activity.
- 2.11 A dawn survey was carried out on the morning of the 23th September 2016. A dawn survey can increase the chance of surveyors visually assessing bat behaviour and

movement as well as providing good opportunities for recording. This is especially true if the roost is a maternity roost and the young bats are returning to roost. The dawn survey started 1.5 hours before dawn and was completed at dawn. All surveyors were equipped with heterodyne and frequency division detectors.

Badger Survey

- 2.12 A badger survey was undertaken at the site to assess if badgers were using the area and if any setts were located on the site and 30m away from the site that might constrain development. The evaluation of badger activity was based on methodology developed for the National Survey of Badgers (Creswell *et al.* 1990) and includes searching for badger field signs such as setts, badger pathways, tracks (pawprints), dung piles with latrines, badger hairs and feeding signs such as snuffle holes.
- 2.13 During the survey, all habitats potentially suitable for badgers were systematically examined for evidence of badger activity including:
- Setts: several sett types may be present within a social group territory, ranging from a single hole to numerous interconnecting tunnels. Setts can be categorised into main, annexe, subsidiary and outlier (Wilson *et al.* 1997).
 - Latrine sites: badgers characteristically deposit dung in pits, which may be located along the boundaries and within the social group territory. These sites serve as means of inter- and intra-group communication.
 - Paths and runs: well used routes between setts and/or foraging areas. Often used by generations of badgers.
 - Snuffle holes: areas of disturbed vegetation often formed by badgers foraging for ground dwelling invertebrates such as earthworms and larvae and the underground storage organs of plants.
 - Hair: often found among spoil and bedding outside entrances to setts or snagged on fences (such as barbwire) along well-used runs.
 - Footprints: easily distinguishable from other large mammal species. Often found along paths and runs or in spoil outside sett entrances.

Habitat Suitability for Reptiles

- 2.14 Habitat surveys were carried out to assess the potential of the site to hold populations of reptile species. This involved looking for the presence of factors that would increase the suitability of the site for reptiles such as:
- Scrub and grassland (long sward) mosaic across the site;
 - Features that can be potential hibernation sites for common reptiles such as log piles;
 - Grass tussocks within the grassland that can act as shelter and burrowing sites;
 - Water bodies or damp places on site (grass snakes);
 - Compost heaps or decaying vegetation (slow worms);
 - Features that can act as refugia on the ground such as disused roofing felt.

Other Protected Species

- 2.15 The site was also inspected for indications of the presence of other protected species, as follows:
- Relevant habitat for dormice such as dense deciduous woodland, coppice and thick shrubbery
 - Ponds and associated habitat suitable to support great crested newts
 - The presence of ditches for water voles
 - The presence of fresh water stream/rivers for otters
 - Suitable nesting places for birds
 - Other potential protected species

Limitations

- 2.16 It should be noted that whilst every effort has been made to provide a comprehensive description of the site, no single investigation could ensure the complete characterisation and prediction of the natural environment. . The site was visited over the period of one site visit, as such seasonal variations cannot be observed and potentially only a selection of all species that potentially occur within the site have been recorded. Therefore, the survey provides a general assessment of potential nature conservation value of the site and does not include a definitive plant species list.

- 2.17 The protected species assessment provides a preliminary view of the likelihood of protected species occurring on-site, based on the suitability of the habitat and any direct evidence on site. It should not be taken as providing a full and definitive survey of any protected species group. The assessment is only valid for the time when the survey was carried out. Additional surveys may be recommended if, on the basis of this assessment it is considered reasonably likely that protected species may be present.

3.0 Results

Desktop Study

- 3.1 The site does not fall within or adjacent to any statutory designated areas. The only statutory designation within 2km is the Brooks Local Nature Reserve (LNR) is approximately 700m southwest of site
- 3.2 There are no Local Wildlife Sites (LWS) within 2km of the site.
- 3.3 There are 10 units of priority deciduous woodland within 2km of the site (Figure 2). The closest of these is an unnamed patch of woodland approximately 250m south on the opposite side of Shripney Road. There are no areas of ancient woodland within 2km of the site. There are several areas of coastal & floodplain grazing marsh within the local area although no such areas are present on site or adjacent to site.
- 3.4 Satellite imagery revealed no ponds on site or within a 250m radius of the red line boundary.

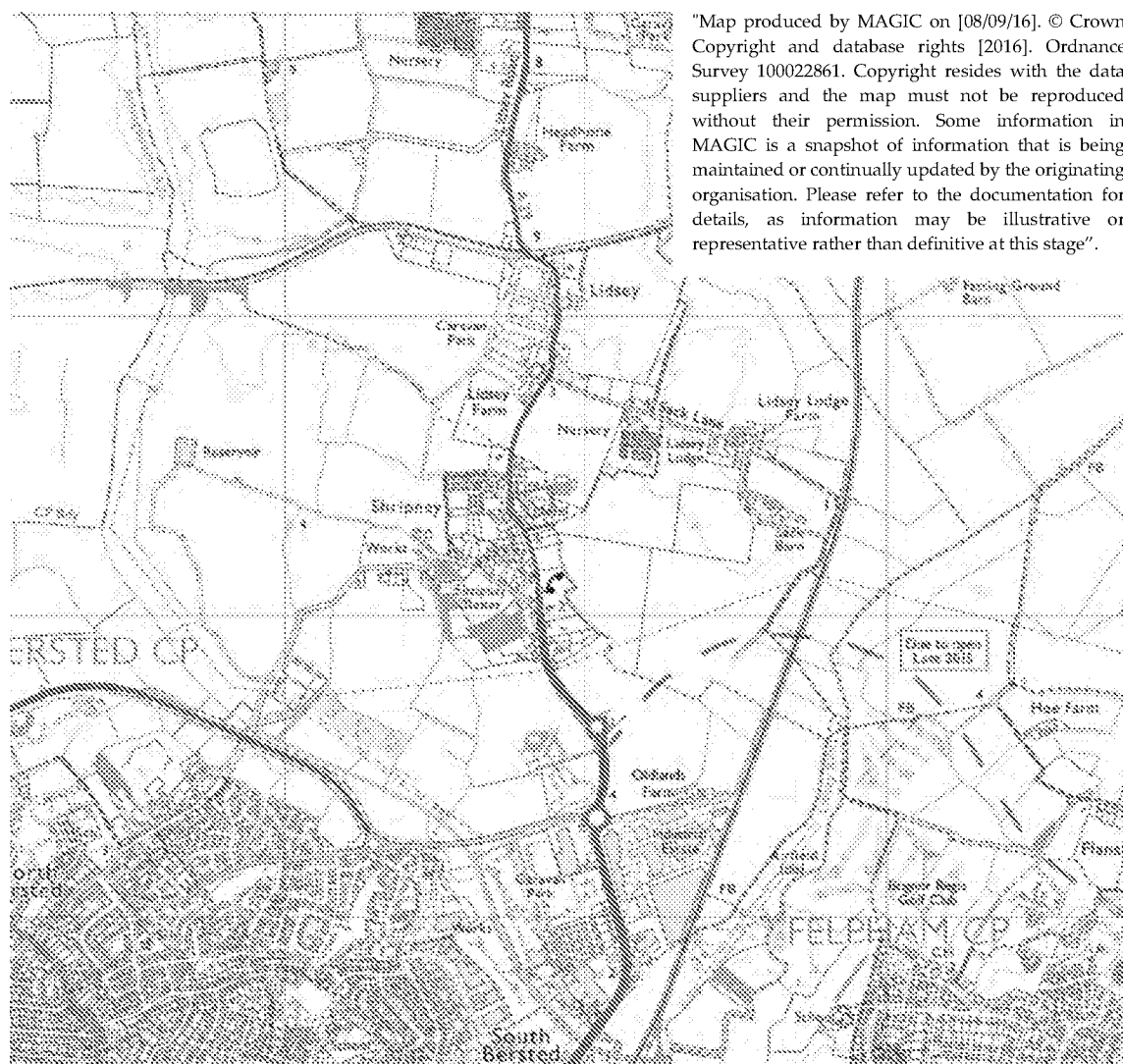


Figure 2: Woodland habitat within 2km of the red line boundary

- 3.5 A 2km data search was requested from the Sussex Biodiversity Record Centre. The records closest to site and recorded within the last 10 years have been included (Table 3). Further information from the data request is included in the appendix.

Table 3: Notable species records within 2km of the site in the last 10 years

Species	Status	Record distance	Record year
Great Crested Newt <i>Triturus cristatus</i>	Bern Convention Appendix 2; European Protected Species; Habitats Directive Annex 2 & 4; NERC Act (2006); Wildlife and Countryside Act (1981 as amended) Schedule 5	2km to the north within Westergate	2013
Slow Worm <i>Anguis fragilis</i>	Natural Environment and Rural Communities Act 2006 - Species of Principal Importance in England (sec; Sussex Biodiversity Action Plan; Sussex Protected Species Register; UK Biodiversity Action Plan priority species; Wildlife and Countryside Act 1981 Schedule 5	Approximately 0.85km South	2014
European Water Vole <i>Arvicola amphibius</i>	Natural Environment and Rural Communities Act 2006 - Species of Principal Importance in England (sec; Sussex Biodiversity Action Plan; Sussex Protected Species Register; Sussex Rare Species Inventory; UK Biodiversity Action Plan priority species; Wildlife and Countryside Act 1981 Schedule 5	Approximately 0.95km north west	2012 (Closest record)
Western Barbastelle <i>Barbastella barbastellus</i>	Conservation of Habitats and Species Regulations (2010) Schedule 2; Habitat and Species Directive (1992) Annex 4; Wildlife and Countryside Act (1981 as amended) Schedule 5	Several grid squares within 2km	2015
Serotine <i>Eptesicus serotinus</i>	Conservation of Habitats and Species Regulations (2010) Schedule 2; Habitat and Species Directive (1992) Annex 4; Wildlife and Countryside Act (1981 as amended) Schedule 5	Approximately 0.9km south	2014
Noctule <i>Nyctalus noctula</i>	Conservation of Habitats and Species Regulations (2010) Schedule 2; Habitat and Species Directive (1992) Annex 4; Wildlife and Countryside Act (1981 as amended) Schedule 5	Approximately 0.9km south	2014
Common Pipistrelle <i>Pipistrellus pipistrellus</i>	Conservation of Habitats and Species Regulations (2010) Schedule 2; Habitat and Species Directive (1992) Annex 4; Wildlife and Countryside Act (1981 as amended) Schedule 5	Confirmed roost approximately 0.2km south west	2012

Soprano Pipistrelle <i>Pipistrellus pygmaeus</i>	Conservation of Habitats and Species Regulations (2010) Schedule 2; Habitat and Species Directive (1992) Annex 4; Wildlife and Countryside Act (1981 as amended) Schedule 5	Approximately 1.0km south	2014
Long-eared sp. <i>Plecotus</i> sp.	Conservation of Habitats and Species Regulations (2010) Schedule 2; Habitat and Species Directive (1992) Annex 4; Wildlife and Countryside Act (1981 as amended) Schedule 5	Confirmed roost approximately 0.25km south west	2009
Brown long-eared <i>Plecotus auritus</i>	Conservation of Habitats and Species Regulations (2010) Schedule 2; Habitat and Species Directive (1992) Annex 4; Wildlife and Countryside Act (1981 as amended) Schedule 5	Confirmed roost approximately 0.1km south west	2009
Red Kite <i>Milvus milvus</i>	Bird Population Status - amber; Birds Directive Annex 1; Convention on Migratory Species; Appendix 2; EC CITES Annex A; Wildlife and Countryside Act 1981 (Schedule 1 Part 1)	Within 2km	2014
Hobby <i>Falco subbuteo</i>	Bern Convention Appendix 2; Convention on Migratory Species; Appendix 2; EC CITES Annex A; Wildlife and Countryside Act 1981 (Schedule 1 Part 1)	Within 2km	2014
Peregrine <i>Falco peregrinus</i>	Bern Convention Appendix 2; Birds Directive Annex 1; Convention on Migratory Species; Appendix 2; EC CITES Annex A; Wildlife and Countryside Act 1981 (Schedule 1 Part 1)	Within 2km	2014
Little Ringed Plover <i>Charadrius dubius</i>	Bern Convention Appendix 2; Convention on Migratory Species; Appendix 2; Wildlife and Countryside Act 1981 (Schedule 1 Part 1)	Within 2km	2014
Black-tailed Godwit <i>Limosa limosa</i>	Bird Population Status - red; Birds Directive Annex 2.2; Convention on Migratory Species; Appendix 2; UK Biodiversity Action Plan priority species; Wildlife and Countryside Act 1981 (Schedule 1 Part 1)	Within 2km	2014
Mediterranean Gull <i>Larus melanocephalus</i>	Bern Convention Appendix 2; Bird Population Status - amber; Birds Directive Annex 1; Convention on Migratory Species; Appendix 2;		

	Wildlife and Countryside Act 1981 (Schedule 1 Part 1)		
Cetti's Warbler	Wildlife and Countryside Act 1981 (Schedule 1 Part 1)	Within 2km	2014
Swallow <i>Hirundo rustica</i>	Bern Convention Appendix 2; Bird Population Status - amber	Within 2km	2014
Firecrest <i>Regulus ignicapilla</i>	Bern Convention Appendix 2; Bird Population Status - amber; Wildlife and Countryside Act 1981 (Schedule 1 Part 1)	Within 2km	2011
Kingfisher <i>Alcedo atthis</i>	Bern Convention Appendix 2; Bird Population Status - amber; Birds Directive Annex 1; Wildlife and Countryside Act 1981 (Schedule 1 Part 1)	Within 2km	2014
Barn Owl <i>Tyto alba</i>	Bern Convention Appendix 2; Bird Population Status - amber; EC CITES Annex A; Wildlife and Countryside Act 1981 (Schedule 1 Part 1)	Within 2km	2014
Kingfisher <i>Alcedo atthis</i>	Bern Convention Appendix 2; Bird Population Status - amber; Birds Directive Annex 1; Wildlife and Countryside Act 1981 (Schedule 1 Part 1)	Within 2km	2014

Phase 1 Habitat Survey

- 3.6 The site was comprised of a residential dwelling comprising a house, several outbuildings including greenhouses, sheds and a garage. The large gardens were well maintained. The site was split into two sections with the larger northern section divided from the southern section by a public footpath.

Amenity Grassland

- 3.7 A large proportion of the site is comprised of amenity grassland. This habitat was species poor and appears to be subject to regular maintenance as the grassland was at a very short sward at the time of the survey. A small number of sheep were also present at the time of the survey, who were grazing the northern section of the site. Species present include perennial rye-grass (*Lolium perenne*), Yorkshire fog (*Holcus lanatus*), red fescue

(*Festuca rubra* agg) yarrow (*Achillea millefolium*), daisy (*Bellis perennis*) and white clover (*Trifolium repens*). Several additional species were present within the southern section of lawn including ground ivy (*Glechoma hederacea*), ribwort plantain (*Plantago lanceolata*), cut-leaved cranesbill (*Geranium dissectum*) and creeping buttercup (*Ranunculus repens*).

Scattered Trees and Tree Lines

- 3.8 The site contained scattered trees throughout the residential garden, these were largely confined to the site boundaries and formed tree lines along the edges of the site. Species present included sycamore (*Acer pseudoplatanus*), ash (*Fraxinus excelsior*), elder (*Sambucus nigra*), copper beech (*Fagus sylvatica* 'purpurea'), apple (*Malus* sp.), hazel (*Corylus avellana*), holly (*Ilex aquifolium*), *Eucalyptus* sp., hawthorn (*Crataegus monogyna*) and Monterey cypress (*Cupressus macrocarpa*).

Hedgerows

- 3.9 Sections of hedgerow were present largely to the south of site. The southern boundary of the southern section of the site contained sycamore and forsythia, with sections of sycamore and hazel on the western and northern boundaries. The remainder of the northern boundary of the southern section contained fence. The western half of the southern boundary of the northern section, bounding the public footpath contained a section of privet (*Ligustrum ovalifolium*) hedge. Several sections of isolated ornamental hedges were present within the northern section of the site, with hawthorn cherry laurel (*Prunus laurocerasus*) and shrubby honeysuckle (*Lonicera* sp.) present.

Buildings

- 3.10 There were several buildings on site, including a residential house, a garage, several outbuildings and green house structures.

Hardstanding

- 3.11 A driveway was present that led up to the residential house from the A29. A small patio area was also present.

Ponds and wet ditch

- 3.12 An ornamental pond was present on site. This pond was dry at the time of survey containing no water. The pond was built by the current owner of the house and is not historic.

Off-site habitats

- 3.13 A large pub and hotel is present to the north of the site, with agricultural land mostly arable to the east, the A29 bounds the site to the west and residential properties are present to the south.

Protected Species***Bats***

- 3.14 The buildings on site were inspected for the presence of bats, evidence of roosting bats and potential roosting features which roosting bats could exploit. The buildings were inspected both internally and externally.



Figure 3: Location of buildings on site, numbered for ease of reference

Building 1

3.15 Building 1 was the main residential house on the site. This detached dwelling contained a pitch tiled roof. Internally the house contained two roof voids. Void one was accessed at the top of the stairs and was very small in size, containing pipes. The roof structure was open to the internal environment with tiles visible, with no boarding or felt lining, although the tiles appeared to be cemented on to the roof. The void was thick with cobwebs and no evidence of roosting bats was recorded within the void.

3.16 The second void was a lot larger in size. This void ran the length of the house from east to west. The base of the void was covered with insulation, with the tiles covered with

wooden sarking on the eastern half of the roof, with tiles exposed internally on the western half. A large inactive wasp nest was present on the eastern gable end. No evidence of bats were present within the void. The void has seemingly been inactive for a period of time with a thick level of dust present and thick cobwebs throughout the void. No evidence of roosting bats was present. No droppings were present and there were no other signs of activity such as potential feeding remains.

- 3.17 Externally the building had a large pitched roof which covered much of the first floor. The roof had numerous broken, missing, slipped and lifted clay tiles, presenting opportunities for crevice dwelling bats such as common pipistrelle.

Building 2

- 3.18 Building 2 was a detached garage. The garage was largely flat roofed although it had a slight pitch to the front section of the roof above the garage door. The building had no enclosed void and the internal environment was regularly used by the occupants of the site and was flooded with daylight through windows. Externally the building did not display suitable features for roosting bats.

Building 3

- 3.19 Building 3 was a small outbuilding to the north of the main house. The building had a pitched clay tiled roof. Again much like building 1, the building had several gaps within the roof where tiles have slipped or been lifted, presenting opportunities for crevice dwelling bats.
- 3.20 Internally the building was used for storage. The tiles had been covered with chipboard. The internal environment was light, due to the presence of windows. No evidence of bats was recorded within the internal environment of the building.

Buildings 4 & 5

- 3.21 These buildings were adjacent to each other on the northern boundary of the site to the east of building 3. These buildings were open sided sheds and garden shed. It was considered that these buildings had no suitability for roosting bats due to a lack of features.

Building 6

- 3.22 Was a medium sized green house. The building was considered unsuitable for roosting bats.

Buildings 7 & 8

- 3.23 Buildings 7 & 8 were the frames for greenhouses / polytunnels. These buildings were not considered suitable for bats.

Building 9

- 3.24 Building 9 was a two storey storage hut. The building was constructed of breeze blocks, with a pitched chipboard roof. The roof had large sections missing and the building was in a dilapidated state, with open sides and windows. It was not considered that the building was suitable for roosting bats and no evidence of roosting bats was recorded.

Building 10

- 3.25 Building 10 was a small workshop / shed. The building contained a flat roof structure covered with felt. The roof had collapsed to the rear of the building leaving a large hole in the roof. The elevations were constructed of breeze blocks with wooden frame windows. The building was considered to be unsuitable for roosting bats, due to a lack of features and due to the open dilapidated nature of the building. It must be noted that old swallow / house martin nests were present within the structure.

Building 11

- 3.26 Building 11 was another greenhouse, the biggest on site. The building was considered unsuitable for roosting bats.

Tree Assessment for Roosting Bats

- 3.27 Several trees on site supported potential features for roosting bats. These were present within the mature coniferous specimens on site. A Monterey cypress () was present within the north east corner this tree had several large cracks and hollows within the tree stem. This tree noted as (2) in Figure 4 was considered to be of high potential for roosting bats. Adjacent to the tree was another cypress (1), this again displayed some indentations within the tree trunk, however it was not clear how deep these features ran, this tree was classed as having medium bat potential. To the south west corner of the northern parcel of the land, were two pine trees. The most eastern of which (3) contained a woodpecker hole, if this hole runs deep enough it could be utilised by roosting bats, this tree was classed as being of medium potential for roosting bats. On the western boundary of site were a couple of what appear to be storm damaged Monterey cypress trees. These two trees (4 & 5) were classed as having medium potential to support roosting bats, due to cracks in stems and broken branches, creating crevices which roosting bats could exploit.



Figure 4: Trees with potential bat roosting features

- 3.28 The habitats on site may provide potential foraging opportunities for bats in the local area, particularly the tree lines and hedgerows. These features may also provide connectivity into the wider landscape.

Bat Activity Surveys

- 3.29 Due to the presence of suitable features within buildings 1 and 3 on site as well as suitable roosting features within mature trees on site, emergence surveys were undertaken at site to assess the whether these features were in use by roosting bats. The emergence survey was conducted on the 19th September 2016. This survey focused on the main house (building 1) and its associated outbuilding (building 3), which were identified as having suitable roosting features for crevice dwelling bats within their roof structures, as well as trees 1 & 2 situated in the north eastern corner of site. Dusk was at

19:05 and the surveyors were present on site 30 minutes before hand the weather the survey was preceded with rainfall, however the rainfall had stopped by the time the survey was started. Temperatures of 16.7°C at the start of the survey, dropping to 15.8°C by the surveys conclusion.

3.30 The first bat passes were recorded at 19:19 and 19:21 by a noctule (*Nyctalus noctula*) at the north western corner of the site and near the northern boundary. Noctules were again heard at 19:27, 19:28 and 19:30 at all the surveying posts across site. A common pipistrelle was recorded flying across the garden at 19:28. At 19:29 a common pipistrelle was recorded emerging from under the tiles at southern side of the house (building 1) very close to the eastern gable end of the building. The bat dropped from the building to almost floor height before flying off. Common pipistrelle were recorded foraging to the south of the main house at 19:30 and 19:32 making eight passes. Common pipistrelle were recorded within the north eastern corner between 19:30 and 19:40 making approximately eight passes. Common pipistrelle were recorded to the north of the house at making five brief passes between 19:34 and 20:11, which was the last soprano pipistrelle were recorded foraging around the garden to the south of building 1 making four passes between 19:38 and 19:51, with a noctule recorded at 19:58. A soprano pipistrelle was recorded to the north of building 1 at 19:53. Nothing was seen to emerge from tree 1 and 2 or building 3, with one common pipistrelle seen to emerge from building 1.

3.31 A dawn survey was undertaken on the morning of the 23rd September 2016. Dawn was at 06:51 and the surveyors were present on-site 1.5 hours prior to sunrise. This survey again focused on buildings 1 and 3, with potential roosting features within trees 3,4 and 5 also covered. The weather was calm with clear skies, the temperature at the beginning of the survey was 10.2°C and dropped to 9.1°C by the end of the survey.

3.32 The first bat to be recorded was at 05:54 when a soprano pipistrelle was recorded to the south of the building 1, making 2 passes foraging around the garden. Soprano pipistrelle were again recorded at 06:05, 06:08 and 06:27 along the western boundary of site, by trees 4 & 5. Common pipistrelle were recorded at 06:02 and 06:05, a myotis sp. at 06:06 and a

noctule at 06:27 again along the western boundary of the site. The last bat of the survey was a long-eared bat recorded very briefly towards the western boundary of site at 06:30.

Badgers

- 3.33 No badger setts were located on or within 30m of site where access was possible. No evidence such as latrines or snuffle holes, was identified anywhere on or around site. It should be noted that not all areas of the site could be accessed on the day of the survey as much of the neighbouring land was private property

Dormice

- 3.34 The habitat on site was not considered to be optimal for dormice. Although there were several trees on site including fruit trees that may offer some food sources for the species, the gardens were well maintained, the site largely lacked dense vegetation to provide nesting habitat, cover from predators and habitat connectivity for the species. In addition, the local landscape lacks areas of woodland which could support a population of the species in any number. There are no records of the species within 2km of the site.

Great Crested Newts

- 3.35 One ornamental garden pond was present on site at the time of the survey. The pond was dry and contained no water. The pond was shaded by sizeable adjacent trees. The pond is not historic or natural and was constructed by the current owner of the house, containing a pond liner. The site is well maintained with very short grassland and a lack of thick vegetation to provide cover for amphibians from predators, whilst in their terrestrial phase.

Reptiles

- 3.36 The site is considered to offer very limited opportunities for this species group. The grassland habitat on site was very short at the time of the survey, with the lawn areas mown to a short sward. In addition the northern section of the site contained sheep that were grazing on site. The site lacked thick vegetation to provide suitable cover for the

species, and lacked a mosaic of tussocky grassland and scrub mosaic which is considered optimal to support reptiles.

Water Voles

- 3.37 There are a large number of records for water voles within the local area. However the nearest record is approximately 0.95km to the north west of the site. There is no suitable habitat present for water voles on site, with a dry man made pond and well maintained gardens. It is considered highly unlikely that the species are present on site.

Other Species

- 3.38 The trees, hedgerows and buildings on site have the potential to support nesting birds. Swallow / house martin nests were present within building 10. It is considered that although the green houses are unsuitable for nesting birds the remaining buildings do have potential for nesting birds.

4.0 Discussion

Site

- 4.1 The site does not fall within or adjacent to any statutory designations. The closest is the Brooks Local Nature Reserve (LNR), which is approximately 700m to the south west of the site. There are no other statutory or non-statutory designated sites within 2km of the site.
- 4.2 With regard to planning policies, it is considered that the mature trees should be retained where possible in line with policy GEN28. If trees are to be removed it is recommended that they are replaced elsewhere on site post development. The trees on site are not part of an ancient woodland, an arboriculturalist should be consulted with regards to tree protection and Tree Preservation Orders.
- 4.3 With regards to policy GEN29 it is considered that that the site does not contain any significant features of nature conservation interest. The bat roost within building 1 will be mitigated for and works undertaken under the relevant licence Natural England licence to legalise the works. The site will not isolate any significant features of nature conservation interest of cause fragmentation of the landscape.
- 4.4 With regards to sites of national and local importance of nature conservation covered under policies AREA14 & AREA 15, the site does not lie within or adjacent to protected sites. It is considered that the proposed development will not have a negative impact on such sites through either direct or indirect impacts.
- 4.5 The habitats on site are common and widespread throughout the local area and the UK as a whole, with well-maintained garden habitat present on site.

Protected Species

Bats

- 4.6 There are a number of buildings on site, the vast majority are greenhouses and sheds which are not considered suitable for roosting bats. However, building 1, the main house and building 3 a small out building, were considered to have potential for roosting bats

within their external features. No evidence was found within the buildings during internal inspections and it is considered unlikely that the internal environment is being utilised by bats within these buildings, including two roof voids within building 1. Both buildings had pitched roofs with clay tiles, many of which have broken, slipped or have been removed over the years. The crevices underneath provide suitable potential roosting features for bats such as pipistrelle species. It is therefore recommended that further survey work is undertaken to establish whether roosting bats are using these features and the gauge the level of bat activity on site.

4.7 In addition, five trees were identified as having some potential to support roosting bats. It is recommended that further work is undertaken on these trees to establish whether they are used as roost sites by bat species. It is recommended that if any trees to be removed are mature or have cracks or holes in the trunk or limbs then these should be inspected further by a suitably qualified ecologist as a precautionary approach to rule out the possibility of roosting bats prior to removal. This can be undertaken by climbing the tree and undertaking an aerial inspection or undertaking an activity survey no more than 48hrs before felling. If a bat roost is located a Natural England licence will need to be applied for.

4.8 The tree lines and hedgerows on site are likely to provide some opportunities for foraging and commuting bats. These features also provide some habitat connectivity to the wider landscape. It is recommended that these features are retained where possible.

Activity Surveys

4.9 Two activity surveys, a dusk and a dawn survey were undertaken at the property within September 2016. Buildings 1 and 3, which were identified as having potential for roosting bats within external features of the building were subject to a dusk emergence and a dawn return to roost survey. No bats were seen to be using building 3, the outbuilding on the northern boundary, with the tiled pitched roof during the surveys. However, one common pipistrelle was seen to emerge from the main house (building 1) on the dusk survey on the 19th September at 19:29, approximately 25 minutes after sunset.

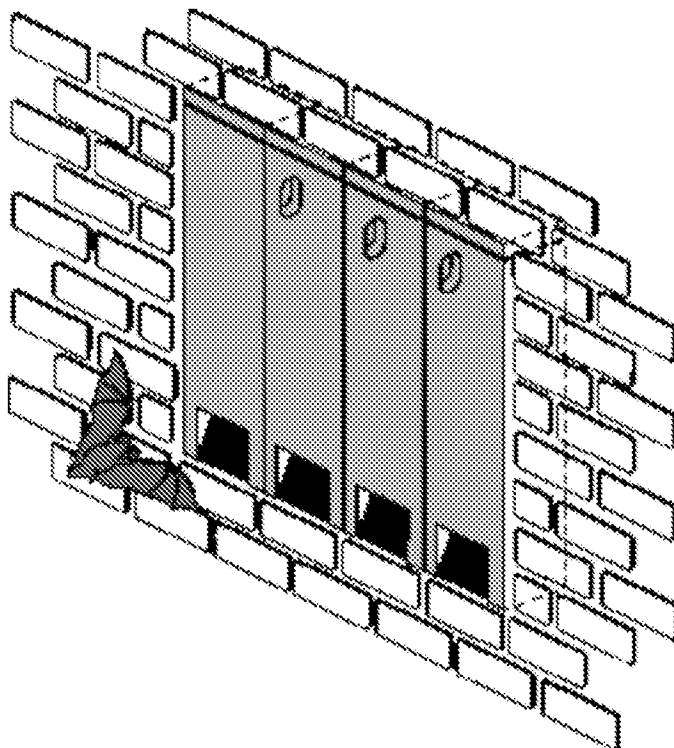
- 4.10 No evidence of bats using building 1 were identified within the internal survey. It is not considered that the roof voids were in use. The common pipistrelle was seen to emerge from the tiles on the southern side of the building close to the eastern gable end. This section of the roof contained clay tiles, which were lined internally by wooden sarking and it is considered that the bat is likely to be roosting in the crevice created between the clay tiles and wooden sarking.
- 4.11 The activity surveys were undertaken within a sub-optimal survey month. It is therefore recommended that an update dusk and dawn survey are undertaken within the optimum survey period for bats (May-August) to establish the full extent of bat activity on site. This should be conditioned as part of the planning approval. These surveys will then be used to inform a Natural England Licence to legalise the demolition works of building 1. If a low number of bats of more common species are using the site, which early evidence suggests then a low impact licence will be able to be applied for from Natural England. It is considered that planning can be granted with the survey work undertaken to date as it is clear that the internal spaces within the building are not in use due to a lack of evidence. Mitigation for crevice dwelling bats should be included within the scheme in site. Once planning has been granted and the update surveys undertaken then the Natural England licence can be applied for.
- 4.12 Update surveys should also be carried out on building 3. If bats are found to use the building a licence should be applied for along with building 1. If no bats are found to use building 3, it is recommended that the building is subject to a soft tile strip prior to demolition. The additional two update surveys have been instructed and will be undertaken in 2017.

Mitigation

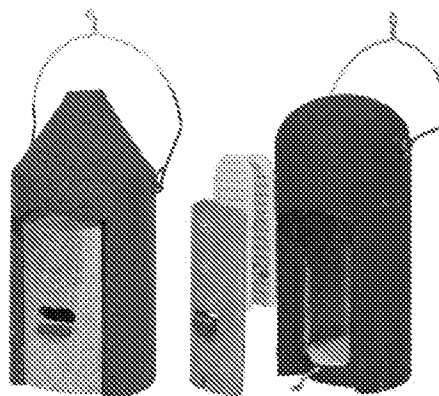
- 4.13 The development will include suitable mitigation measures in order to alleviate the loss of the bat roost. Common pipistrelle bats are a crevice dwelling species which require small access hole and features to roost within. The following will need to be undertaken within a mitigation strategy:

- Demolition works will only be undertaken when a licence has been issued.

- Demolition works to the roof, external panels and the gable ends to be undertaken under Ecological Clerk of Works (by the Registered Consultant (RC) registered if under Natural England Low Impact Licence) during times where bats are less likely to be roosting under the roof tiles (October – November and March – April).
- Four bat tubes will be incorporated into the south facing external wall of the of one of the new buildings on site, this will provide a similar roosting feature within the new development, to replicate the small roost that is being lost due to redevelopment. (Please see information below)



- Bat boxes will be erected as mitigation. One Schwegler 2F Bat box (general purpose bat boxes and attract a wide variety of species) and one Schwegler 1FD Bat Box (developed specifically for smaller bats including pipistrelle species) will be erected within mature trees in the garden. (See boxes below)



<http://www.schwegler-natur.de>

4.14 It is also recommended that a sympathetic lighting scheme to be designed in order to reduce impacts on commuting or foraging habitat across the site, For example:

- No potential bat roost be illuminated by artificial lighting, lighting should be positioned to point away from any roosting site, leaving the entrance and exit points in darkness;
- Lighting only be installed if there is a significant need;
- Light levels be kept low, the use of low pressure sodium lamps or high pressure sodium instead of mercury or metal halide lamps where glass glazing is preferred due to its uv filtration characteristics;
- Lighting be avoided near treelines or hedgerows and the pond area, with light angled away from these areas, bats use linear features such as treelines to commute across the landscape to forage;
- Lights have focussed luminance on their target area, preventing light spill and pollution into other areas of the site and local area.

4.15 The demolition of the buildings on site is not considered to be significant in terms of bats, however, as this is a bat roost, the demolition will occur under a licence. With regards to the licence, the following methods are considered to be implemented under licence:

- Establish two Schwegler 2F bat boxes on mature trees within the red line boundary prior to works on site;

-
- Conduct a Tool Box Talk to all team members on site with regards to the presence of bats using the building, bats legal protection, measures that will be undertaken to ensure that bats are not harmed, good working practises, licensable activities and what to do if a bat is found;
 - Once this TBT has been conducted then works to the building can commence under direct supervision of a licenced ecologist, accredited agent or registered consultant (RC) if under a low impact licence;
 - The tiles of the building will be hand removed. All tiles will be removed by hand individually, with the tiles being turned prior to stacking. If a bat is found then the RC will gently move the bat to a bat box on site;
 - Once the tiles of the building have been removed, other features such as the bitumen felt lining will be removed, again under direct supervision from the RC;
 - The soffit boards will finally be removed using hand tools and checked gently before final removal. All works to be supervised by the RC;
 - Once the RC has rechecked the whole of the building and is happy that all licensable activities to the building have occurred (i.e. the features which bats are using for roosting have been removed), then demolition of the building can occur without further supervision;
 - It is considered that this process is likely to take between 1 or 2 days.

4.16 The timing of the works will occur when bats are considered to be active. As such it is considered that works to the building will be avoided in November – March, however, this is dependent on local weather conditions.

4.17 Compensation for the loss of this roost is through the use of the two Schwegler 2F bat boxes. Enhancements include the use of the bat tubes within the building designs. These will be established prior to any site works on the mature trees on site. It is expected that these will be retained for a minimum of five years.

Licence Application

4.17 The timing of the works with regards to the licence requirements is as follows.

- A licence application will be made following full planning permission being granted;
- Update dusk and dawn survey will be undertaken within optimal survey period (May – August inclusive);
- Furthermore, any conditions which are pertinent to ecology will be discharged before the low impact bat licence will be applied for. An update survey must occur (walk over or internal survey) in the last 3 months prior to demolition works;
- The two Schwegler 2F boxes will be established on the trees on site;
- Once the licence is issued (the licence should take 10 working days for issue), all licensable works can commence (if weather conditions appropriate). All licensable works (removal of tiles etc) should take in the region of 1 or 2 days.
- The registered low impact bat licence consultant (the RC) will be on site for all of the licensable works, if the work is undertaken under a low impact licence
- Once the licensable works are complete and the RC or suitably qualified is satisfied that the structure is free of bats the building can then be demolished.
- The enhancement bat tubes will be included within the development build programme. The bat tubes will be checked to ensure they are fitted during the build process.

Badgers

4.18 No evidence of badgers, such as setts, latrines or snuffle holes, was identified on or around site at the time of the survey. If a mammal hole is found on site at any stage of the works, this should be inspected by a suitably qualified surveyor.

4.19 Whilst no evidence of badgers actively using the site was found on the day of the survey, they may reside in the surrounding habitats and may visit the development site to forage. Foraging and commuting habitat is not legally protected, however safety

measures can be taken to ensure no badgers are harmed during the development process.

- 4.20 It is recommended that any excavations and trenches associated with construction are either covered at night or supplemented with a means of escape for any badgers that may fall into the excavation whilst foraging. Any open pipes or conduits laid should be blocked off each night to prevent badgers from entering them. If possible, construction work should only take place between dawn and dusk with no late evening work to reduce possible disturbance.

Dormice

- 4.21 The site does not contain good habitat for dormice as the majority of the site is well maintained residential garden. There are significant parcels of woodland or areas of extensive suitable habitat which may support a population of dormice within the local area. There are no records of the species within 2km of the site, therefore it is considered highly unlikely that the species are present on site. No further surveys for dormice are considered necessary.

Great Crested Newts

- 4.22 One pond was present on site, however this was completely dry at the time of survey. It is understood that the pond was constructed by the current owner of the site and was not a historic or naturally occurring waterbody. After studying mapping and aerial photography there are no other potential great crested newt breeding ponds within the local area and it is considered highly unlikely that a great crested newt population would sustain itself within the local area. The site offers very poor terrestrial habitat with limited amounts of dense vegetation to provide cover for the species, with the well maintained garden offering sub-optimal habitat. The nearest record of great crested newts is approximately 2km to the north of site. It is considered unlikely that great crested newts are present onsite, no further surveys are recommended.

Reptiles

- 4.23 The site is comprised of well-maintained gardens, including regularly mown and sheep grazed lawn. It is considered that at the time of the survey the site did not support suitable reptile habitat. It is considered that the site is not constrained by the species as long as maintenance of the site is kept up. If there is a delay to the project where the grassland is not maintained to a short sward on site and scrub and dense vegetation is allowed to grow, the site maybe colonised by any reptile population on adjacent land particularly the agricultural field margins to the east, if this occurs further reptile work maybe necessary. It is therefore recommended that site maintenance is continued right up to any clearance works.

Water Voles

- 4.24 It is considered that the habitat on site provides very limited opportunities for water voles. The gardens are well maintained and although there is a water body present onsite, this was dry at the time of survey and was a small manmade feature, certainly unlikely to sustain the species. Several records of water vole have been recorded within the local area, with the nearest record recorded 0.95km away from site to the north east. Its is not considered that water voles would be impacted by proposals.

Other species

- 4.25 Birds are likely to use the trees and hedgerows on site and along the boundaries for foraging and breeding. Swallow / house martin nests were present within building 10. It is considered that although the green houses are unsuitable for nesting birds the remaining buildings do have potential for nesting birds. It is recommended that trees and hedgerows be retained where possible or replaced. Any scrub or tree removal or building demolition should be implemented outside the breeding bird season (March-September) or immediately after a nesting bird check by a suitably qualified ecologist. If active nests are identified, works in the vicinity of the nest must cease until the birds have fledged the nest.

General Site Enhancements

- 4.26 A number of enhancements can be made to the final development to help reduce potential ecological impacts. It is important to utilise native species of local provenance in landscaping schemes to enhance the ecological value of a development.
- 4.27 Any trees removed on site need to be replaced elsewhere on site to ensure a 'no net loss' in biodiversity. These should be replaced with native species of value to wildlife and can include oak, ash (*Fraxinus excelsior*), hazel (*Corylus avellana*), beech (*Fagus sylvatica*), cherry (*Prunus sp.*), hornbeam (*Carpinus betulus*) and rowan (*Sorbus aucuparia*). It is understood that replacement trees will be included within the site layout.
- 4.28 The hedgerows and site boundaries should be enhanced or replaced if they are to be removed. Hedgerows help to provide a layering of different habitats that can be utilised by a wide variety of species. Species that can be planted include blackthorn (*Prunus spinosa*), hawthorn, hazel, holly (*Ilex aquifolium*), elder, alder buckthorn (*Frangula alnus*), guelder rose (*Viburnum opulus*), dog rose (*Rosa canina*) and dogwood (*Cornus sanguinea*). It is understood that boundary features are to be maintained and enhanced, for both ecological and visual impact reasons.
- 4.29 Newly formed areas of amenity grassland, boundaries and vacant spaces post-development could be supplemented by integrating a variety of native plant species. Patches of bare soil can be sown with wildflower seed mixes to increase the biodiversity of the site and also offer aspects of aesthetic appeal.
- 4.30 Log and rubble piles can be built to provide hibernacula habitats for potential species such as common amphibians and reptiles.
- 4.31 Additional habitats may be provided for species including birds and insects in the form of green walls. Green walls can be created by planting climbing plants in the ground and training these either directly onto the external walls of the building or on to trellis. Alternatively, it is possible to create an instant green wall using established climbing plants rooted in containers and grown onto frames. Species could include:

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- Honeysuckle (*Lonicera japonica*, *L. fragrantissima*, *L. standishii*)
 - Clematis spp. (*Clematis vitalba*, *C. armandii*, *C. alpina*, *C. montana*, *C. tangutica*)
 - Ivy (*Hedera helix*)
 - Climbing hydrangea (*Hydrangea petiolaris*)
 - Dog rose (*Rosa canina*)

4.32 The creation of swales and/or sustainable urban drainage systems (SUDS) as part of the development can further enhance the site. These waterbodies could be incorporated into the southern part of the site and should be linked to the wider landscape throughout the protection and enhancement of tree lines and associated grassland strips. Ponds, swales and ditches can be planted to enhance invertebrate species on the site and provide breeding opportunities for great crested newts and other amphibian species. These should be planted with species of ecological value, such as:

- Water mint (*Mentha aquatica*)
- Common reed (*Phragmites australis*)
- Soft rush (*Juncus effusus*)
- Water plantain (*Alisma plantago-aquatica*)
- Meadowsweet (*Filipendula ulmaria*)
- Yellow flag iris (*Iris pseudacorus*)
- Purple loosestrife (*Lythrum salicaria*)
- Marsh cinquefoil (*Potentilla palustris*)
- Amphibious bistort (*Polygonum amphibium*)

4.33 Nest boxes should be installed in order to provide new nesting opportunities for birds. These can be hung on the buildings or surrounding mature trees post development. Recommended boxes include:

- Schwegler 1N Deep Nest Box – This gives added nest protection from predators.
- Schwegler 1B Bird Box – A general purpose bird box, suitable for many species.
- Schwegler Bird House – This is suitable for all common garden birds and may be attached to a building or wall so is suitable for siting behind climbing plant.

5.0 Conclusions

- 5.1 The site does not lie within or adjacent to any statutory designated sites. The only statutory designation within 2km is the Brooks Local Nature Reserve (LNR) is approximately 700m southwest of site. The development is not considered likely to have a negative affect on statutory or non-statutory designated sites in the local area.
- 5.2 The habitats on site are common and widespread throughout the local area and the UK as a whole. The site is dominated by buildings, short amenity grassland, ornamental planting and scattered trees.
- 5.3 The majority of the buildings onsite were considered unsuitable for roosting bats. However the main house (building 1) and building 3 a small outhouse, were considered to have suitable external roosting features for crevice dwelling bat species. No evidence was found internally within any of the buildings and it is considered that no internal features within the buildings such as loft space are being used by roosting bats. Further survey work on these buildings were recommended.
- 5.4 Two bat activity surveys were undertaken on buildings 1 and 3, with one common pipistrelle seen to emerge from building 1 on the dusk survey. It is therefore considered that the demolition of the building should be undertaken under Natural England licence. A mitigation strategy has been included within this report. It is recommended that further survey work should be conditioned. The activity surveys were undertaken in September, which is considered a sub-optimal month. Update surveys should be carried out in the optimal survey period May-August, in order to inform a Natural England licence application. These have been instructed and are due to take place in 2017.
- 5.5 Five potential bat trees were also subject to an activity survey. None of these trees were in use by roosting bats at the time of survey. If these features are to be removed they should be subject to inspection by a suitably qualified ecologist, either by way of an aerial inspection or by undertaking an activity survey no more than 48hrs before felling.

- 5.6 No evidence of badgers was found on site at the time of the survey, although there were some areas that could not be fully assessed due to dense vegetation cover or lack of access. Badgers may use the site for foraging and so should be considered during construction works.
- 5.7 One dry ornamental pond was present on site. This waterbody was not considered suitable for supporting great crested newts. There are no other potential breeding ponds within 250m of the site. It is considered that the site is unlikely to contain great crested newts therefore no further survey work is recommended.
- 5.8 The grassland on site was considered to be too short for reptiles, which is subject to regular maintenance and also sheep grazing. It is recommended that all grassland on site is kept at a short sward height so that it remains unsuitable for reptiles.
- 5.9 The site is not considered to be constrained by other protected species such as dormice, otters or water voles. No further surveys are recommended.
- 5.10 Nesting birds may use the trees and hedgerows on site. An old swallow / house martin nest was present within building 10 on site and it is considered that the buildings on site have some potential for nesting birds. It is recommended that clearance work on site be undertaken outside of the breeding bird season (March-September inclusive) or immediately after a nesting bird check by a suitably qualified ecologist.
- 5.11 Recommendations for enhancements have been made within this report, aimed at improving the ecological value of the site post development.

6.0 References

Bat Conservation Trust (2016) *Bat Surveys – Good Practice Guidelines*. Bat Conservation Trust, London.

Bright, P., Morris, P. & Mitchell-Jones, T. (2006) *The dormouse conservation handbook (Second edition)*. English Nature, Peterborough.

Creswell, P., Harris, S. & Jeffries, D.J. (1990) *The history, distribution status and habitat requirements of the badger in Britain*. Nature Conservancy Council, Peterborough.

Joint Nature Conservation Committee (2010) *Handbook for Phase 1 habitat survey – a techniques for environmental audit*. JNCC, Peterborough.

Langton, T.E.S., Beckett, C.L. & Foster, J.P. (2001) *Great Crested Newt Conservation Handbook*. Froglife, Halesworth.

Mitchell-Jones, A.J. (2004) *Bat Mitigation Guidelines*. English Nature, Peterborough.

Natural England (2011) *Badgers and Development: A guide to best practice and licensing*. Natural England, Bristol

Neal, E. & Cheeseman, C. (1996) *Badgers*. T & A D Poyser Ltd. London.

Wilson, G.J., Harris, S. & McLaren, G. (1997) *Changes in British badger population, 1988-1997*. People's Trust for Endangered Species, London.

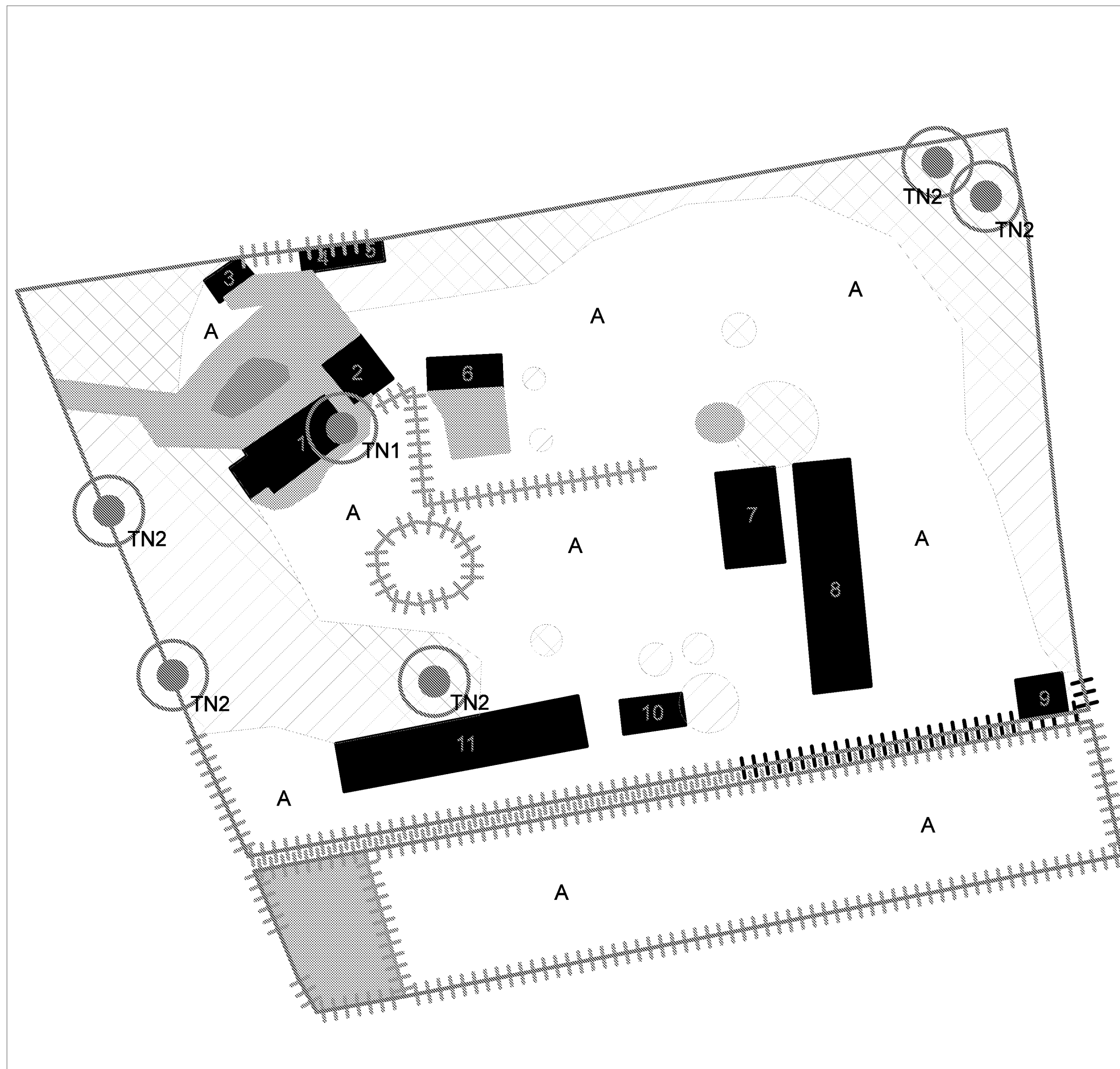
Internet resources:

Google Maps: www.google.co.uk/maps

Magic Interactive Map: www.magic.gov.uk

Braintree District Council: www.braintree.gov.uk

Appendix 1: Phase 1 Habitat Map



Key

- A Amenity grassland
- Hardstanding
- Building
- Scattered Trees
- Bare Earth
- Dry Pond
- Hedge / Tree Line
- Fence
- Bat Emergence
- Bat Potential Tree
- TN1
- TN2
- Survey boundary

Site: The Cottage, Shripney

Client: Castle Property Developments

Surveyor: C.Jennings

Survey Date: 30th September 2016

Drawing Title: Habitat Map

the
ecology
partnership

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Appendix 2: Photos

Photograph 1: Building 1	
Photograph 2: Numerous missing tiles	
Photograph 3: No evidence of bats internally, this is the main void of building 1	

Photograph 4: Building 3, also with missing tiles in roof structure	
Photograph 5: Dry ornamental pond	

Photograph 6: Tree 2 considered to have potential for roosting bats	
Photograph 7: Southern parcel of land	

Photograph 8: Northern area of land	
Photograph 9: Habitats on site were well maintained	

Appendix 3: Biological Records



SUMMARY REPORT

Land at The Cottage, Shripney Road, Bognor Regis + 2km radius

13 September 2016 SxBRC/16/408 Search Area: SU9200 to SU9503; SU9101 to SU9102; SU9204 to SU9404

Chris Jennings (The Ecology Partnership)

Protected Species Register (not including bats, badgers, otters or birds)

Number of species recorded	5
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European Protected Species

Number of species recorded	10
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Bats

Number of species recorded	9
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Birds

Number of species recorded	169
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Number of BoCC Red list species recorded	27
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Number of BoCC Amber list species recorded	70
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Number of W&CA Schedule 1 species recorded	36
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Number of significant breeding bird records	55
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BAP species (not including bats or birds)

Number of species recorded	19
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Rare Species (not including bats, birds or otters)

Number of species recorded	16
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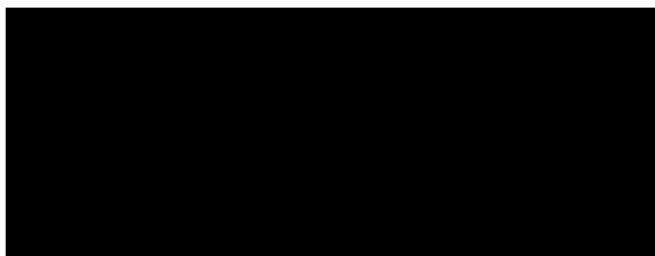
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