Preliminary Ecological Appraisal

Chicken Shed, Sir Robert's Farm, Goose Green Lane,

Pulborough, West Sussex, RH20 2LW

01/09/2022

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Contents

Appendices

Non-technical Summary

Phlorum Ltd was commissioned by Peter Isherwood to undertake a Preliminary Ecological Appraisal which was carried out at on the 24th May 2022, in order to determine whether any ecological constraints could affect the proposed works for the site.

This revision of the report has been issued after a bat building inspection was carried out at the Chicken Shed.

It is understood that the survey site comprises five individual dwellings. We have been made aware that this proposed development comprises the conversion of the chicken shed only. Whilst the chicken shed is within the wider survey area it is not affected by all the findings. The survey area extended over approximately 1.1 hectares (ha).

The main findings of the surveys are as follows:

- The site is not subject to any statutory or non-statutory designations. The closest statutory site is South Downs National Park located approximately 4.3km to the southwest at its closest point and the survey area does not support any features that contribute to the designation of this site.
- The onsite building known as the Chicken Shed is considered to have a low potential for roosting bats. A bat survey is recommended. However, we have been made aware that a further planning application is due to be submitted to the planning authority in the very near future covering the rationalization of the entire site and involving the demolition of the chicken shed.
- It is recommended that the proposed bat survey be carried out just prior to demolition of the Chicken Shed as part of the future 'rationalisation' planning application/approval.
- In addition, a precautionary approach to site clearance in respect to breeding birds, [redacted] hazel dormice, stag beetles, and hedgehogs is recommended to minimise any adverse impacts on these species groups.

Further information on precautionary working practices and additional surveys together with recommended mitigation and enhancement measures are discussed in Section 5.

1. Introduction

Background

1.1 Phlorum Ltd has been commissioned by Peter Isherwood to undertake a Preliminary Ecological Appraisal, to inform the potential ecological constraints of proposed future development of Sir Robert's Farm, Goose Green Lane, Pulborough (hereafter referred to as "the site").

1.2 The purpose of the Preliminary Ecological Appraisal was:

- to identify the major habitats present;
- to identify the potential for any legally protected species to be present; and
- to recommend any additional ecological surveys, if required.

1.3 As part of the assessment, a desktop review and a site visit were carried out. The results of which were used to assess the nature conservation importance of the site and the potential of the site to support protected species.

1.4 This report has been compiled in accordance with current guidelines (British Standard 42020:2013 Biodiversity. Code of Practice for Planning and Development, 2013 and CIEEM, 2017 and 2018).

1.5 It is understood that the full site comprises five individual dwellings. However, we have been made aware that this proposed development comprises the conversion of the chicken shed only. Whilst the chicken shed is within the wider survey area it is not affected by all the findings. The survey area extended over approximately 1.1 hectares (ha).

Site Location

1.6 The site is located to the east of Pulborough, approximately 7.6km east of Pulborough train station and 2.7km north-west from the A24. The site is located in a mixed residential and agricultural setting and is surrounded by few residential dwellings and large areas of agricultural land. The site is accessed via Goose Green Lane, which lies to the south.

1.7 The National Grid Reference for the centre of the site is TQ 11922 18417. The survey area extended over approximately 1.1 hectares (ha).

2. Methodology

Desk Study & Consultations

Database and Map Search

2.1 The desktop study involved conducting database searches for statutory and non-statutory designated sites, legally protected species and features of interest within a 2km radius of the site. The database and map search was based on available information provided by the following sources:

- Sussex Biodiversity Records Centre (SxBRC, 2022);
- Multi-Agency Geographical Information for the Countryside (MAGIC, 2022);
- Ordnance Survey mapping;
- Aerial photography; and
- The Woodland Trust online Ancient Tree Inventory.

Habitat Survey and Assessment

2.2 Phlorum Limited carried out an ecological survey of the site on 24th May 2022. The survey was carried out by a suitably qualified ecologist, Harry Webster who has over 2 years professional experience of undertaking ecological surveys. The weather conditions during the survey were sunny and warm.

2.3 The field survey comprised a walkover inspection of the land and habitats present. The survey followed standard Phase 1 survey methodology (JNCC, 2010) and covered all accessible parts of the site, including boundary features. Habitats were described and mapped (Figure 1: Appendix A). A list of plant species was compiled, together with an estimate of abundance made according to the DAFOR scale (Appendix D).

2.4 This assessment provides information on the habitats in the survey area and identifies actual or potential presence of legally protected or otherwise notable species/habitats in or immediately adjacent to the site.

2.5 Target notes highlighting a particular feature of ecological interest are provided in Appendix B, with associated photographs.

2.6 Scientific names are given after the first mention of a species, thereafter, common names only are used. Nomenclature follows Stace (2010) for vascular plant species.

Protected Species Assessment

2.7 The potential for the site to provide habitat for protected species was assessed from field observations in conjunction with results of the desk study. The site was inspected for indications of the presence of protected species including:

- Habitat considered suitable to support widespread reptile species including areas with a scrub/grassland mosaic and potential hibernation sites;
- On-site ponds offering potential breeding opportunities for great crested newts (*Triturus cristatus*) and the presence of suitable terrestrial habitat including hedgerows and rough grassland;
- The presence of features in, and on trees, indicating potential for roosting bats Chiroptera, including knot and rot holes, loose bark. Secondary evidence of bats including staining, droppings and feeding remains were also looked for;
- The presence of nesting habitat for breeding birds, including mature trees, dense scrub and hedgerows and direct evidence of bird nesting including bird song, old nests etc.;
- [redacted]
- Presence of woodland and or hedgerows providing suitable habitat to support hazel dormice (*Muscardinus avellanarius*); and
- Riparian habitat supporting suitable features for water voles (*Arvicola amphibius*) and otters (*Lutra lutra)*; and the
- Presence of nationally protected and/or invasive plants.

2.8 The potential presence for protected species is categorised as **Negligible**, **Low**, **Moderate**, **High** or **Present**, based on the findings of the field survey and on the evaluation of existing data.

2.9 The purpose of this assessment is to identify whether more comprehensive Phase 2 surveys for protected species or mitigation should be recommended.

Preliminary Roost Assessment

2.10 The inspection of the chicken shed was carried out on 28th July 2022, in accordance with good practice guidelines (Collins, 2016).

2.11 The interior and exterior of the structures were inspected closely with the aim of identifying the presence of bats and any secondary evidence together with any potential roost sites. Secondary evidence includes droppings, feeding remains, scratch marks and oil and urine staining.

2.12 The external inspection comprised a detailed search of all accessible architectural features for bat droppings, urine staining, scratch marks, staining around suitable crevices and feeding remains. A high-powered torch was used to illuminate internal features at height, for instance the apex of the roof and associated supporting beams, and these were inspected using close focusing binoculars when required.

2.13 In accordance with current standing advice issued by Natural England (2015), the following types of bat roosts were considered during the assessment:

- Day Roost - where individual bats, or small groups of males, rest or shelter in the day
- Night Roost - where bats rest or shelter at night between foraging in the active period, but rarely during the day
- Feeding 'Perch' Roost - where bats hang to eat or catch their prey or rest at night between feeding sessions.
- Hibernation Roost - where bats are found during winter. These roosts typically comprise a stable environment where bats can enter torpor; these areas are normally of a constant temperature.
- Transitional or Occasional Roost - where individual or small numbers of bats gather at a temporary site before and after hibernation.
- Maternity Roost – where female bats give birth and rise their young.
- Satellite Roost – an alternative roost found in close proximity to the main nursery roost colony and sued by a few individual breeding females to small group of breeding females through the breeding season

Caveat

Data Search Constraints

2.14 It is important to note that, even where data is held, a lack of records for a defined geographical area does not necessarily mean that there is a lack of ecological interest; the area may be simply under-recorded.

Survey Constraints

2.15 Ecological surveys are limited by factors that affect presence of plants and animals such as seasonality. Whilst every effort has been made to provide a comprehensive description of the site, no investigation can ensure the complete characterisation of the environment.

2.16 The survey was carried out during the growing season and therefore some species may not have been visible above ground or readily identifiable.

2.17 The appraisal does not constitute a full botanical survey, or a Phase 2 pre-construction survey that would include accurate GIS mapping for invasive or protected plant species. This survey provides a preliminary view of the likelihood of protected species occurring on the site based on the suitability of the habitat, known distribution of the species in the local area and any direct evidence on the site. It is therefore used as a tool to recommend further protected species surveys (or other species of significant nature conservation interest) if on the basis of the preliminary assessment or during subsequent surveys, it is considered reasonably likely that protected species may be present.

2.18 It is however considered that the survey was sufficiently rigorous to assess the ecological value of the site.

Bat Survey Constraints

2.19 Bats are mobile animals which can move roost sites throughout the year. It is possible that surveys carried out in August may miss roosts not occupied until later in the year. However, where undisturbed, it is generally possible to find secondary evidence of bats throughout the year.

2.20 It is considered that the survey was sufficiently rigorous to assess the ecological value of the site for the purposes of this assessment.

Limitations

2.21 This appraisal also does not constitute as a full invasive species survey. All surveys are subject to the conditions on site at the time of the survey. Site surveys are non-intrusive and rely on the visual identification of aboveground growth. If parts of a site are inaccessible then these areas can often not be surveyed, unless they can be viewed from other areas. If any aboveground growth is being managed or has been disturbed or covered, or the below ground growth is dormant, then it may be impossible for us to identify invasive plants in these areas during our non-intrusive survey.

3. Baseline Conditions

Aerial Photography and OS Maps

3.1 Aerial photographs and OS maps show the site to be predominantly a grass field with several buildings and trees scattered around the plot. There appear to be 21 ponds within 500m of the site boundary.

Statutory and Non-Statutory Designated Sites

Statutory Sites

3.2 There are no statutory sites located within the 2k data search area. The closest statutory designated site is The South Downs National Park, located 4.3km southwest of the site.

Non-statutory Sites

3.3 The closest non-statutory designated site is Laybrook Brickworks, Thakeham Local Geological Site (LGS) located 375m northwest of the site. Table 2 provides a list of Non-Statutory sites within 2km of the site.

Table 2: Non-Statutory Sites within 2km of the site

Site Name	Reason for Designation	Area (ha)	Distance from the Site
Laybrook Brickworks, Thakeham	Active quarry in the Upper Weald Clay (near the top) between BGS Bed 6 and the Lower Greensand of the Lower Cretaceous. It is the only site in Sussex at this level. Sedimentology: the sediments are grey/brown clays with a fossiliferous ironstone bed. Palaeontology: various fossils have been found belonging to: Beetles, Cockroaches, *Pseudofrenelopsis* twigs, Hybodus, Lepidotus, Coelodus, Pterosaurs, Crocodile, Bivalve and Ostracods.	30	375m to the northwest
B2139 Road Cutting, Thakeham	Road cutting on B2139 with exposures of sandstones of the Hythe Formation	0.3	1.9km to the southwest

	on both sides, combined length about 60m and up to 6m high.		
Warminghurst Road Cutting, Ashington	Road cutting with exposures of sandstones of the Hythe Formation mainly on the west side, length about 40m and up to 5m high. Only small exposures about 1m high are visible on the east side. Hythe Formation, Lower Greensand Group, early Cretaceous in age.	0.2	1.7km to the southwest

Ancient Woodland

3.4 There is no ancient woodland covering any part of the site or immediately adjacent to the site. No trees on or adjacent to the site are listed on the Woodland Trusts' Ancient Tree Inventory. The closest area of ancient woodland is located 300m southeast of the site boundary.

Habitats

Site Summary

3.5 The full site comprised of buildings, hardstanding, amenity grassland, neutral grassland, continuous scrub, ruderal vegetation, and trees.

3.6 The main habitats recorded within the site are described below. Additional details are shown on the habitat survey plan in Appendix A, and the target notes are listed in Appendix B.

Buildings

3.7 The full site comprises of five structures, including a bungalow, a cottage, a workshop (named Chicken Shed), a large barn (named Sussex Barn) and locked garages (named Dutch Barn). However, this proposed development comprises the conversion of the chicken shed only, although a description of the wider finding in the full study area have also been provided within this report.

Bungalow

3.8 The bungalow was situated at the southeast perimeter of the survey area. The bungalow is currently inhabited by a tenant. The building itself was a single storey bungalow, with a hip roof, and wooden clad exterior (see Photograph 1 in Appendix B). The building was examined from the exterior for its suitability for bats. The roof, soffit, and facia boards appeared to be in a good state of repair with no entrance or egress points observed. Lead piping around the chimney, as well as possible other entrance points were inspected and appeared well sealed. The Bungalow was classified as having negligible potential for roosting bats.

Cottage

3.9 The cottage was situated at southwest perimeter of the survey area. The cottage was vacant at the time of the survey. The building was a single storey cottage, with a box gable roof, and had sealed stone surface walls (see Photograph 2 in Appendix B). The exterior of the building was examined for its potential for bats. The roof had several possible roosting opportunities that mimic those found in the natural environment. These included loose tiles and lifted ridge tiles. These features provide opportunities for crevice dwelling bats. Overall, the cottage was classified as having **low** potential for roosting bats.

Chicken Shed

3.10 The chicken shed was situated at the southwest perimeter to the northeast of the cottage. The building was a rectangular shaped, single storey shed with a box gable roof. The roof was single skin with limited potential for crevice dwelling bats (see Photograph 3 in Appendix B). The only potential roosting features for bats were two chimney spouts, and some gaping in the roof. The roof material was suspected to be made from asbestos and therefore prior to any demolition or conversion works, an asbestos survey may be recommended. Overall, the chicken shed was classified as having **low** potential for roosting bats.

Sussex Barn

3.11 The Sussex Barn was a vacant building situated at the southwest perimeter to the west of the chicken shed. The building was an L-shaped, double storey barn with a gambrel roof (see Photograph 4 in Appendix B). The north of the building was wrapped in scaffold, which had been left for several years and is now heavily covered in vegetation. The roof was in a poor state of repair with several loose, lifted, and broken tiles providing opportunities for bats to fly into. The timber cladding walls had suitable gapping that would also present opportunities for crevice dwelling bats. There was also dense ivy covering much of the west facing wall of the barn, which may cover up potential routes of entrance/egress. Overall, the Sussex barn was classified as having **moderate** potential for roosting bats.

Dutch Barn

3.12 The Dutch Barn was situated at the west site boundary. The buildings was a rectangular, double storey barn, with a brick base, and corrugated steel/asbestos upper half section. The roof was also of corrugated steel construction and appeared to be in a good state of repair (see Photograph 5 in Appendix B). The barn had three red doors which were well sealed. Overall, the Dutch Barn was classified as having **negligible** potential for roosting bats. The roof material of this building was also suspected to be made from asbestos and therefore prior to any demolition or conversion works, an asbestos survey may be recommended.

Hardstanding

3.13 The entry to site consisted of hardstanding and gravel which appeared to be in average repair.

Amenity Grassland

3.14 the north-east area of the site was amenity grassland purposefully kept short and at the time of the survey included a small campsite (see Photograph 6 in Appendix B). Species noted at the time of the survey include cock's foot *(Dactylis glomerata),* meadow grass *(Poa sp.),* and white clover *(Trifolium sp.).*

Neutral Grassland

3.15 The northwest of area of the site was open agricultural land, and at the time of the survey was sparsely vegetated, and had a large plastic container at the northeast corner (see Photograph 7 in Appendix B). Species present at the time of the survey included ajuga *(Ajuga reptans L.),* crosswort *(Cruciata laevipes),* common rush *(Juncus effusus),* birds foot trefoil *(Juncus effusus),* curly dock *(Rumex crispus),* and lesser stitchwort *(Stellaria graminea)*.

Ruderal

3.16 Areas of ruderal vegetation were present at the western boundary. These areas were dense and overgrown and contained species of burdock *(Arctium lappa)*, spear thistle *(Cirsium vulgare),* bramble *(Rubus fruiticosus),* broad leaved dock *(Rumex obtusifolius),* ragwort *(Jacobaea sp.),* and common nettle *(Urtica dioica).*

Continuous Scrub

3.17 Areas of continuous scrub were present at the northern boundary in front of a block of woodland and to the north of Sussex Barn where bramble was growing around the scaffolding. Other species comprised blackthorn *(Prunus spinosa* L.) and goat willow *(Salix caprea).*

Trees

3.18 The centre of the survey site was divided by a long strip of white poplars *(Populus alba.* The southwest boundary adjacent the B2133 contained a line of mature trees to provide cover to the site from the road. Species included field maple *(Acer campestre)*, common oak *(Quercus robur),* and European ash *(Fraxinus excelsior)*. There were also individual planted trees dotted throughout the southern half of the site within the amenity grassland. Species include *Abies sp,* silver birch *(Betula pendula)*, sweet chestnut *(Castanea sativa),* midland hawthorn *(Crataegus laevigata),* lime *(Tilia* sp.), and weeping willow *(Salix babylonica)*.

Preliminary Roost Features (PRF's)

3.19 The cottage had loose tiles and lifted ridge tiles at the eastern aspect (see Photograph 8 in Appendix B).

3.20 The Chicken Shed had two chimney spouts which provided open access to the building (see Photograph 9 in Appendix B). Additionally, there were some gaps in the roof.

3.21 The Sussex Barn had loose, lifted, and broken tiles at the south and north aspects, as well as dense ivy covering the west wall (see Photograph 10 in Appendix B).

Target Note (TN)

3.22 The neutral grassland field situated at the eastern survey area had suitable areas for reptiles and foraging great crested newts. The field is partially encroached by continuous scrub at its northern boundary, which leads into a woodland edge further to the north. Common lizards *(Zootoca vivipara)* are typically found in grasslands and woodland edges, as to are foraging great crested newts *(Triturus cristatus)* (see Photograph 7 in Appendix B).

Preliminary Roost Assessment

3.23 The buildings on site were all examined externally for features that could indicate use by bats.

3.24 The chicken shed was inspected thoroughly internally, including all roof spaces (Photo 9 in Appendix B). There were points of ingress/egress seen, but no physical evidence of use by bats.

3.25 The remaining buildings were examined externally but not internally due to access restrictions. No evidence of use by bats was seen. There were potential points of ingress/egress in the form of loose and lifted tiles on the cottage and Sussex barn.

Protected Species

3.26 Legislation relating to the protected species referred to in this section is included in Appendix C.

3.27 The following paragraphs detail the suitability of the on-site habitats to support protected species and include information from the data search for protected, rare and otherwise notable species returned within a 2km radius.

Reptiles

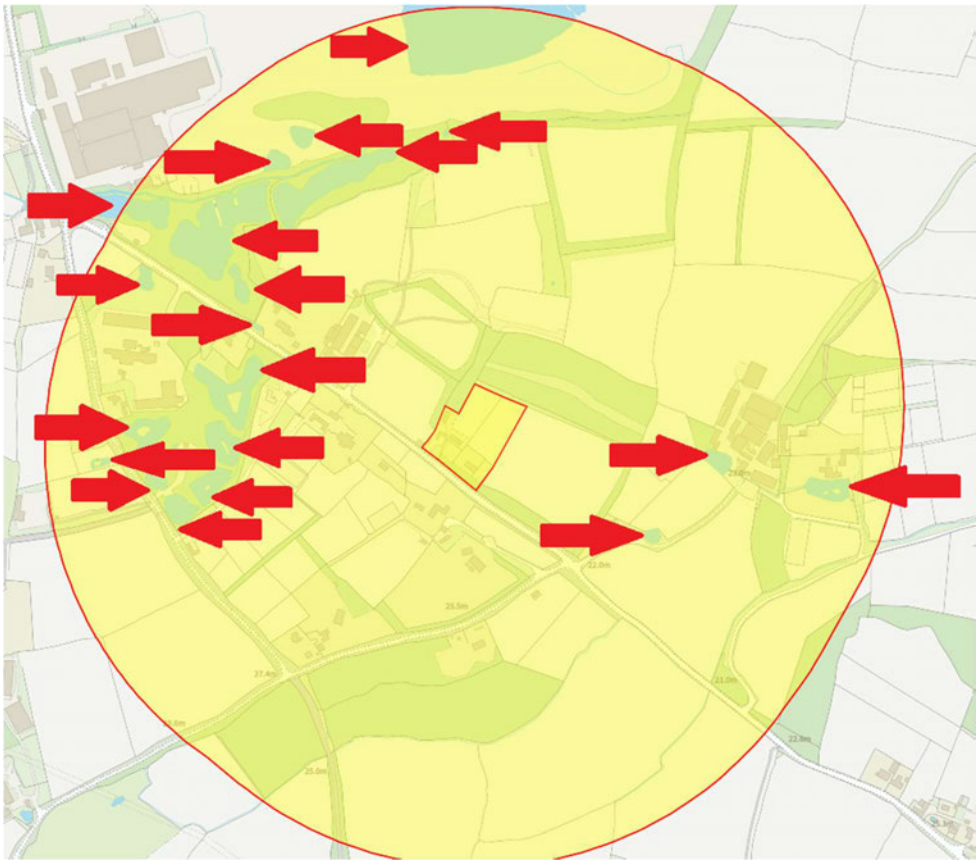
3.28 The data search showed records of grass snake *(Natrix helvetica)* and common lizard *(Zootoca vivipara)* within 2km of the site within the past 15 years.

3.29 During the survey no reptiles or signs of reptiles were seen, however areas of neutral grassland and continuous scrub were present providing suitable reptile habitat.

3.30 Overall the site was assessed as having **moderate** potential to support reptiles.

Amphibians

3.31 The data search showed records of great crested newt within 2km of the site within the past 10 years. Aerial photographs and maps show ponds there are 21 ponds within 500m of the site.



Drawing 1: Ponds within a 500m radius of the development boundary.

Drawing 2: Ponds within a 250m radius of the development boundary.

3.32 During the survey no water was seen on site. However, there was terrestrial habitat that could support foraging and commuting great crested newts. This included neutral grassland and continuous scrub.

3.33 According to DEFRA's online data base (Magic, 2022) of records of great crested newts, the closest great crested newt class license is located over 6km from the site boundary. The closest known records of GCN are located 2.5km from the survey site. This is not to say that great crested newts are not in the local vicinity, it is more likely that they are underreported.

3.34 The large number of ponds located to the west of site (indicated on drawing 1), appear to belong to the Pulborough Angling Society suggesting they are stocked with fish. Generally, fish significantly diminish the probability of a pond supporting great crested newts.

3.35 Due to the high volume of ponds within 500m of the site, it was considered that the site offered **moderate** potential for foraging and commuting newts and **negligible** potential for breeding great crested newts.

Bats

3.36 The data search showed records of bats from the genera pipistrelle (*Pipistrellus*), long eared (*Plecotus*), myotis (*Myotis)*, serotine (*Eptesicus)*, and noctule (*Nyctalus)* occurring within the 2km search area in the past 10 years.

3.37 During the survey potential bat roosting features were seen for crevice dwelling species in the tiled roofs of the Sussex Barn and Cottage. Larger entrance points into the buildings were also present in missing tile sections of the Sussex Barn, and chimney spouts of the Chicken Shed. The chicken shed also had some gaps in the roof for crevice dwellers.

3.38 Overall it was considered that the Sussex Barn offered **moderate** potential for roosting bats and the Cottage and Chicken Shed offered **low** potential for roosting bats. The remaining buildings onsite offered **negligible** potential for roosting bats.

Birds

3.39 Several Red or Amber listed Birds of Conservation Concern[1] (BoCC), and notable[2] bird species were returned by the data search that may utilise habitats within the site. Species include starling *(Sturnus vulgaris),* song thrush *(Turdus philomelos)*, lesser spotted woodpecker *(Dryobates minor)* and dunnock *(Prunella modularis).*

3.40 During the survey it was noted that the onsite trees and scrub provided suitable habitat for nesting birds., although no nests were seen. The buildings also had access points which birds may utilise, particularly Sussex Barn which had several missing tiles.

3.41 Overall it was considered that the site offered **high** potential for breeding birds.

Barn Owls

3.42 The data search returned recent records of barn owls (*Tyto alba*) within 2km of the site.

3.43 The onsite barns offered limited open access to barn owls. A visual inspection of any internal beams was not carried out. However, due to the limited access into the barns, it is unlikely that barn owls are nesting at the site.

3.44 Overall, it was considered the site offered **negligible** potential for breeding barn owls.

[redacted]

[1] Birds of Conservation Concern status is prioritised into high concern (Red), medium concern (Amber) and low concern (Green) (Eaton et al, 2009). Red-list species are those that are globally threatened according to the IUCN criteria; those whose population or range has declined rapidly in recent years; and those that have declined historically and have not shown a substantial recent recovery. Amber-list species are those with an unfavourable conservation status in Europe; those whose population or range has declined moderately in recent years; those whose population has declined historically but made a substantial recent recovery; rare breeders; and those with internationally important or localised populations. Green-list species are those that fulfil none of the criteria.

[2] Notable Birds are based on a list of birds that are particularly scarce or vulnerable either at national or a regional level. The majority of these bird species are designated as Schedule 1 species, under the Wildlife and Countryside Act 1981 (as amended), or listed as red or amber-listed BoCC.

3.46 [redacted]

Hazel Dormice

3.48 The data search showed records of dormice within 2km of the site within the past years.

3.49 The woodland adjacent the north and west site boundary would be suitable to support hazel dormice. The other habitats within the site were considered to be unsuitable for dormice.

3.50 Overall it was considered that the site offered **negligible** potential to support breeding dormice and **low** potential to support commuting dormice, however this was restricted to a very small portion of the site.

Water Voles

3.51 The data search showed 'present signs' records of water vole within 2km search area in the past 15 years.

3.52 The site did not contain the aquatic habitat and vegetation types that would support breeding, foraging or commuting water vole.

3.53 Overall it was considered that the site offered **negligible** potential to support breeding water voles and **negligible** potential to support commuting and foraging water voles.

Otters

3.54 Reports of otter are not returned by the record centre in this area.

3.55 The site did not contain the aquatic habitat and vegetation types that would support breeding, foraging or commuting otters.

3.56 Overall it was considered that the site offered **negligible** potential to support breeding otter and **negligible** potential to support commuting otter.

Stag Beetles

3.57 The data search showed no records of stag beetle (*Lucanus cervus*) within 2km of the site within the past years.

3.58 No direct evidence of stag beetles was seen on the site. However, the presence of dense vegetation could have concealed the dead wood required for this species.

3.59 Overall, the site offered **moderate** potential for stag beetle.

Hedgehogs

3.60 The data search showed records of hedgehogs (*Erinaceus europaeus*) within 2km of the site within the past 20 years.

3.61 Although no direct evidence of hedgehogs was seen during the survey, the habitats on site, such as the short grassland and dense scrub seen on site would provide suitable habitat for them to forage and/or hibernate.

3.62 Overall, the site offered **moderate** potential for hedgehogs.

Invasive Plants

3.63 The data search showed records of Japanese knotweed *(Reynoutria japonica),* Himalayan balsam *(Impatiens glandulifera)*, and wall cotoneaster *(Cotoneaster horizontalis)* occurring within the 2km search area in the past 15 years. These plants are listed as invasive in Schedule 9 of the Wildlife and Countryside Act (1981 amended).

3.64 During the survey no specimens were seen that are listed as invasive in Schedule 9 of the Wildlife and Countryside Act (1981 amended) or appear on the Non Native Species Secretariat (NNSS, 2019) register of species that are of concern.

4. Evaluation

4.1 On the basis of the information available from the habitat survey and desk study, the site has been evaluated in terms of its potential for biodiversity, support of protected species and habitats, and the contribution the area makes as part of the wider landscape. The nature conservation value of the site has been assessed following standard criteria developed by CIEEM (2017 and 2018) and in accordance with BS 24040:2013. This is provided below.

4.2 The biodiversity value of protected species within the site is a preliminary evaluation based upon the desk study records, habitat suitability and the conservation status of the species in question. It should be noted that where European Protected Species (EPS) or species of Principle Importance for the Conservation of Biodiversity are present on-site they may be valued at a lower level/scale where it is considered likely that populations would not be of sufficient importance to justify designation at a higher level. However, regardless of their biodiversity value, such species are still subject to national and/or European legislation.

4.3 Key aspects of relevant planning policy regarding conservation, including an explanation of species referred to as being of 'Principal Importance for Conservation of Biodiversity' and European Protected Species and habitats, are provided in the Legislation section in Appendix C.

Geographic Evaluation

Features of International Importance

4.4 Features of International Importance are principally sites covered by international legislation or conventions. The Conservation of Habitats and Species Regulations 2017 (as amended) implements the Natural Habitats and Wild Fauna and Flora (92/43/EC) (Habitats Directive) in England and Wales. The Regulations mainly deal with the protection of sites with certain habitats and populations of species that are important for nature conservation in a European context, i.e. Special Areas of Conservation (SAC's) and Special Protection Areas (SPA's).

4.5 The site is not subject to any international statutory nature conservation designations. The closest site of International Importance is Arun Valley SPA and SAC located 5.7 km to the southwest. The site does not provide any supporting habitat for this designated site. Neither does It provide the habitat required for ramshorn snail *(Anisus vorticulus)* which is a primary reason for the selection of the SAC and SPA.

Features of National Importance

4.6 Features of national importance include Sites of Special Scientific Interest (SSSIs) which are designated under the Wildlife and Countryside Act 1981 (as amended). The site is not subject to any national statutory nature conservation designations and it is not considered that any habitats or populations or assemblages of species within the site would meet the criteria for the designation of SSSIs at an appropriate geographic level[3].

4.7 The closest designated site of national importance for nature conservation is Hurston Warren SSSI located 4.2km to the southwest. The site does not provide any supporting habitat for this SSSI.

4.8 The site is also located within the 10km Impact Risk Zone of Upper Arun SSSI, but the site does not have any supporting habitat for this SSSI which comprises a river and stream.

Features of Regional (i.e. Sussex) Importance

4.9 The site does not include any features of value at this level neither is it likely to be selected as a SINC based on the results of the current survey.

Features of District (i.e. Horsham) Importance

4.10 The site is relatively small and does not support any features that were considered to be of value at this level.

Features of Local (i.e. Pulborough) Importance

4.11 The site does not support any features that were considered to be of value at this level.

Features of Value Immediate Vicinity (c. 250m) of the Project

4.12 The on-site vegetation is of value within the immediate vicinity and provides suitable habitat to support protected species including breeding birds, bats, reptiles, great crested newts, hazel dormice, [redacted] stag beetles, and hedgehogs. It also forms part of the wider ecological network of habitats in the locality, providing wildlife corridors for mobile species to move through the landscape.

Summary

4.13 Overall on the basis of the survey results and the above criteria, habitats within the site are considered largely to be of ecological value within the immediate vicinity only. The site provides suitable habitat to support several protected species and groups including breeding birds, bats, reptiles, great crested newts, hazel dormice, [redacted] stag beetles, and hedgehogs. However, populations of these are unlikely to be locally significant.

[3] JNCC Guidelines for selection of biological SSSIs (see http://jncc.defra.gov.uk/page-2303#download).

Local Plan Evaluation

4.14 It is considered that the statutory Horsham District Planning Framework (Adopted 2015) contains the following nature conservation policies relevant to the site. A list of the policies is provided below. The full text of the relevant policies is contained in the Legislation section in Appendix C and this should also be referred to.

Horsham District Planning Framework (2015)

- Policy 25 - District Character and the Natural Environment.
- Policy 26 – Countryside Protection.
- Policy 30 – Protected Landscapes.
- Policy 31 – Green Infrastructure and Biodiversity.

5. Discussion and Recommendations

Discussion

5.1 The survey site is located at Sir Robert's Farm, Goose Green Lane, Pulborough, West Sussex, RH20 2LW. The survey area extended over approximately 1.1 hectares (ha). Habitats to be impacted by the development proposals include buildings, hardstanding, amenity grassland, neutral grassland, continuous scrub, ruderal vegetation, and trees.

5.2 We have been made aware that there are plans to convert one of the existing dwellings, known as the Chicken Shed, into a residential dwelling.

5.3 Habitats within the survey area were assessed as being of value to wildlife with the local vicinity with potential to support breeding birds, bats, reptiles, great crested newts, hazel dormice, [redacted] stag beetles, and hedgehogs and these species may pose a constraint to works.

5.4 It is recommended that a bat survey is carried out just prior to demolition of the Chicken Shed as part of the future 'rationalisation' planning application/approval.

5.5 However, the current proposals which involve the conversion of the chicken shed into a residential dwelling, will not have an impact on the other environmental areas of concern identified in the wider survey area as the works will be concentrated on the building.

5.6 We have been advised that a further planning application is due to be submitted to the Planning Authority in the very near future covering the rationalisation of the whole site and involving the demolition of the Chicken Shed.

5.7 In addition, a precautionary approach to site clearance in respect to breeding birds, hazel dormice, [redacted] stag beetles, and hedgehogs is recommended to minimise any adverse impacts on this species group.

5.8 Details regarding specific mitigation, including further surveys and precautionary working practices together with habitat enhancement measures are provided below.

Recommendations

Breeding Birds

5.9 The on-site scattered buildings, trees, and scrub provide suitable nesting habitat for a range of bird species. All nesting birds are protected under the Wildlife and Countryside Act 1981 (as amended).

5.10 In order to avoid any potential impact on breeding birds, the clearance of any trees or scrub and demolition of buildings should be undertaken outside the main bird nesting season which runs from March to August inclusive[4], with clearance works possible between September and February. Where this is not possible, an ecologist would need to check the vegetation for active nests and signs of bird breeding activity.

5.11 In the event that a nest is found, an exclusion zone around the nest would be established. Works would have to cease within this buffer area until the young birds have fledged.

Great Crested Newts

5.12 Great crested newts receive protection under the Wildlife and Countryside Act 1981 (as amended) and The Conservation of Habitats and Species Regulations 2017 (as amended). Due to the potential for great crested newts to use on-site habitats, a great crested newt survey should be carried out to determine presence/ likely absence and if present, the survey will enable a population assessment to be made.

5.13 Where possible, all ponds within 500m of the site, should be included in the survey. The survey protocol should follow that set out in the Great Crested Newt Mitigation Guidelines (English Nature, 2001). An initial four surveys are required to demonstrate presence or absence and these must be carried out between mid-March and mid-June with two of those visits taking place within the peak survey time between mid-April and mid-May.

5.14 If great crested newts are found to be present, an additional two survey visits will then be required to allow a population size class assessment to be made, with at least one of these visits being undertaken within the peak survey time between mid-April and mid-May.

5.15 The results of the survey should then be used to inform mitigation proposals for this species.

5.16 If great crested newts are found to be present in the locality following the survey, a European Protected Species Mitigation Licence from Natural England may be required to remove aquatic or terrestrial habitat in order to facilitate the works. Once submitted, a licence application can take up to 30 days to be processed. Natural England will only grant a licence once planning permission has been received.

[4] It should be noted that this is the main breeding period. Breeding activity may occur outside this period (depending on the particular species and geographical location of the site) and thus due care and attention should be given when undertaking potentially disturbing works at any time of year.

5.17 As part of the licence application, a Method Statement will need to be submitted to guide works in relation to this species. If individuals are found to be using the pond, suitable compensation measures to mitigate for losses to any aquatic habitat will be required in addition to undertaking a formal translocation to ensure individuals are not present within the development footprint. This process will involve fencing the development area and trapping and relocating newts over a number of weeks.

[redacted]

Bats

5.20 Bats receive protection under The Wildlife and Countryside Act 1981 (as amended) and The Conservation of Habitats and Species Regulations 2017 (as amended)

5.21 Due to Sussex Barns moderate potential suitability to support roosting bats, 2 emergence and re-entry surveys are recommended in order to provide information on if and how bats are using the site. Surveys can only be undertaken during the active period for bats taken to run between May and September with at least 1 between May and August.

5.22 Due to the Cottage and the Chicken Sheds low potential suitability to support roosting bats, a single emergence or re-entry survey is recommended for these buildings in order to provide information on if and how bats are using the site. This survey must be undertaken during the peak active period for bats taken to run between May and August.

5.23 The results of the bat surveys can then be used to inform specific mitigation and enhancement measures for this species group to include a lighting scheme that is sympathetic to bats.

5.24 Where a roost is likely to be impacted by the works, and where avoidance is not possible, it may be necessary to obtain a European Protected Species Mitigation (EPSM) Licence before the works can proceed and to complete any necessary mitigation.

5.25 Such a licence would need to be obtained from Natural England once full planning permission is in place. The application will require the drafting of a detailed mitigation strategy including timing and construction methods in addition to the mitigation measures proposed. Natural England currently require 30 working days to determine a licence application.

5.26 If a bat roost is found for a common bat species and the roost is of low conservation value, then a Low Impact Class Licence may be obtained for the site instead. This type of licence is typically obtained within 15 days.

Reptiles

5.27 All reptiles are protected under the Wildlife and Countryside Act 1981 (as amended).

5.28 The site provides a vegetation structure suitable for widespread reptiles therefore a reptile survey is recommended. This will entail a minimum of seven survey visits, following current guidelines (Froglife, 1999; English Nature, 2004), to determine the presence or likely absence and distribution of reptiles within the site.

5.29 Reptile surveys can be undertaken in the active period for reptiles taken to run between mid-March and October. The optimum time is generally late spring, from April to mid-June and in the early autumn during September.

5.30 The results of the survey will then be used to inform mitigation proposals for this species group.

Hazel Dormice

5.31 The hazel dormouse is protected under the Conservation of Habitats and Species Regulations 2010 (as amended) and the Wildlife and Countryside Act 1981 (as amended).

5.32 Although there was habitat on site that was considered suitable for supporting dormice, it is not felt that this will be significantly impacted by the proposed development. Therefore, a precautionary approach to the clearance of the site should be sufficient for protecting any dormice present.

5.33 It is recommended that all clearance work is undertaken in the presence of a suitably qualified ecologist, who will guide the schedule of works.

Stag Beetles

5.34 As well as being a Species of Principle Importance for the UK, this species is also listed on the Sussex Rare Species inventory and therefore a precautionary approach to the clearance of all deadwood should be taken during works. Where possible any dead wood around the site should be retained as part of the works. Where dead trees pose a health and safety risk, the above ground section should be felled and the arisings stacked on the ground. The tree base and root system of these trees should be retained where possible.

5.35 Where it is not possible to retain these areas, the root system of the dead trees should be removed under an ecological watching brief and any larvae encountered should be removed to suitable retained deadwood habitat elsewhere around the site boundaries.

Hedgehogs

5.36 Hedgehogs are listed on the Natural Environment and Rural Communities (NERC) Act 2006 Section 41 as a Species of Principal Importance and a London BAP Priority Species. They are a rapidly declining species.

5.37 Hedgehogs need short grass areas to search for invertebrate prey. Log piles and decaying vegetation are used to forage and hibernate in. Areas of leaf litter can be collected and used in nests. Dense scrub areas are also useful to build hibernation nests during winter. Wildlife friendly corridors allow hedgehogs and other wildlife to migrate across a site. These are discussed in the Wildlife Friendly Pathways Section below.

Habitat Retention

5.38 All retained trees, including all adjacent off-site trees should be protected in accordance with British Standards (BS 2012) 5837:2012 Trees in Relation to Design, Demolition and Construction. The root protection areas of any retained trees must be left free from excavation and disturbance, and protected during any proposed works. Protection should be in the form of fencing and signs installed for the duration of the works.

Habitat Enhancement

5.39 New development offers the opportunity for habitat enhancement in accordance with national and local planning policy and some recommendations are included below.

<u>Bird and Bat Boxes and Bricks</u>

5.40 Additional bird nesting and bat roosting provision could be incorporated into new design proposals. These could either be installed on trees or incorporated into the new building design. Some recommendations are made below as a guide.

5.41 Bat roosting opportunities could be provided through the installation of boxes on the outside of the walls or remaining trees, such as the Schwegler 2F, or other makes of a similar design, such as Chavenage Bat box. There are a range of bat boxes available and these can be selected to suit the development and bat species in the locality.

5.42 Bird boxes could be installed on the walls of the new building or in the remaining trees which could include the following Schwegler bird house or 1B makes, or similar designs from alternative suppliers. If the client is happy for bird boxes to be installed on the walls of the new building then a Schwegler sparrow terrace 1SP could also be used.

5.43 Further details of the bird and bat boxes are provided in Appendix F.

5.44 Bat boxes should be installed at appropriate locations ideally with south-east, south, or south-west facing aspects at least 3m from ground level. Ideally they need to be exposed to 6-8 hours of direct sunlight, but sheltered from strong winds. If installed on the building, these should ideally be positioned directly below the eaves.

5.45 Bird Boxes should be located out of prevailing wind, rain, and strong sunlight, ideally with a clear flight path to the entrance. Ideally they should be installed two to four metres from the ground facing north or north-east.

Wildlife Friendly Pathways

5.46 The increase in building can result in ecological areas which are unconnected. Effectively these are ecological islands, and often there is no way for wildlife to migrate to and from these areas. One way to reduce the impact and allow wildlife, including hedgehogs, to migrate across sites is to install wildlife friendly pathways across a site. This can include a range of things such as wildlife corridors, such as hedgerows and scrub or rough grassland corridors, but also installing holes in fences. Wildlife holes, often referred to as hedgehog holes, help wildlife migrate through areas. The holes need to be at least 13cm by 13cm, at ground level.

Compensatory Planting

5.47 Additional tree and shrub planting could be incorporated into the landscape proposals to compensate for any removal to facilitate the works. Planting should include a high proportion of native species and be of local provenance where possible. These should be carefully selected to ensure they contain species suitable for the area. Some species of known wildlife value are listed in Appendix E.

6. Conclusions

6.1 The site survey revealed the following habitats:

- Buildings;
- hardstanding;
- amenity grassland;
- neutral grassland;
- continuous scrub;
- ruderal vegetation; and
- trees.

6.2 The site is not subject to any statutory or non-statutory designations. The closest statutory site is South Downs National Park located approximately 4.3km to the southwest at its closest point and the survey area does not support any features that contribute to the designation of this site.

6.3 The refurbishment of the Chicken Shed on the same plot area will not generally affect other environmental areas of concern identified in the wider site area. However, the following protected species surveys are recommended in order to determine presence or likely absence:

- Bats, subject to the following observations:
  - The site was the subject preliminary ecological survey which revealed that the chicken shed had low potential for roosting bats.
  - A detailed internal inspection of the chicken shed revealed no evidence of current or historic use by bats. It is considered that bats are not currently using the building.
  - It is, however, likely that over time, the potential for bat roosting features will increase within the chicken shed.
  - Phlorum have been advised that a further planning application is due to be submitted to the Planning Authority in the very near future covering the rationalisation of the whole site and involving the demolition of the Chicken Shed.
  - It is therefore recommended that the proposed bat survey be carried out just prior to demolition of the Chicken Shed as part of the future 'rationalisation' planning application/approval. This will ensure that the bat data is up to date and will detect any bats that move in at a future point.

6.4 In addition, a precautionary approach to vegetation clearance in respect to breeding birds, [redacted], hazel dormice, stag beetles, and hedgehogs is recommended to minimise any adverse impacts on this species group.

6.5 It has been recommended that the site is enhanced by introducing some compensatory planting and installing bat and bird boxes.

7. References

- British Standards Institute (2012). 5837:2012. *Trees in Relation to Design, Demolition and Construction – Recommendations*. Standards Policy & Strategy Committee. Milton Keynes: BSI.
- British Standards Institute (2013). 24040:2013. *Biodiversity-Code of Practice for Planning and Development*. Standards Policy & Strategy Committee. Milton Keynes: BSI.
- CIEEM (2017). *Guidelines for Preliminary Ecological Appraisal Second Edition*. Chartered Institute of Ecology and Environmental Management, Winchester.
- CIEEM (2018). *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine*. Chartered Institute of Ecology and Environmental Management, Winchester.
- Collins, J. (ed.) (2016). *Bat Surveys for Professional Ecologists: Good Practice Guidelines* (3rd edn). The Bat Conservation Trust, London.
- Department for Communities and Local Government (2019) *National Planning Policy Framework (NPPF)* (on-line). Available from: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/6077/2116950.pdf [Accessed on 13/07/2022].
- ILP – Institute of Lighting Professionals (2018). Guidance Note 08/18 Bats and artificial lighting in the UK. Bats in the built environment series. ILP and the Bat Conservation Trust [on-line].
- Joint Nature Conservation Committee (2010). *Handbook for Phase 1 habitat survey - A technique for Environmental Audit.* JNCC, Peterborough.
- MAGIC - Multi-Agency Geographic Information for the Countryside (2019). *MAGIC* Natural England, Leeds. [on-line]. Available from: www.magic.gov.uk [Accessed on 13/07/2022].
- Stace, C.A. (2010). N*ew Flora of the British Isles* (3rd Ed.). Cambridge University Press, Cambridge.
- Schwegler (2018). *Bird and Nature Conservation Products* [on-line]. Available from http://www.schwegler-natur.de [Accessed on 13/07/2022].
- SxBRC (2022). Ecological data search for land at Sir Robert's Farm, Pulborough. Unpublished report by Sussex Biodiversity Records Centre.
- Horsham District Council (2015). Horsham District Planning Framework (online). Available from: https://www.horsham.gov.uk/__data/assets/pdf_file/0016/60190/HorshamDistrict-Planning-Framework-November-2015.pdf [Accessed on 13/07/2022]

8. Glossary of Terms

BAP	Biodiversity Action Plan
BRC	Biological Records Centre
CIEEM	Chartered Institute of Ecology and Environmental Management
Habitats Directive	Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora
LNR	Local Nature Reserve
LWS	Local Wildlife Site
MAGIC	Multi-Agency Geographical Information for the Countryside
NNR	National Nature Reserve
Nomenclature	The system of devising of names for plants
NPPF	National Planning Policy Framework
PEA	Preliminary Ecological Appraisal- formerly referred to as a Phase 1 Habitat Survey
SAC	Special Area of Conservation
SINC	Site of Importance for Nature Conservation
SPA	Special Protection Area
SSSI	Site of Special Scientific Interest

Figures and Appendices

Appendix A

Habitat Map

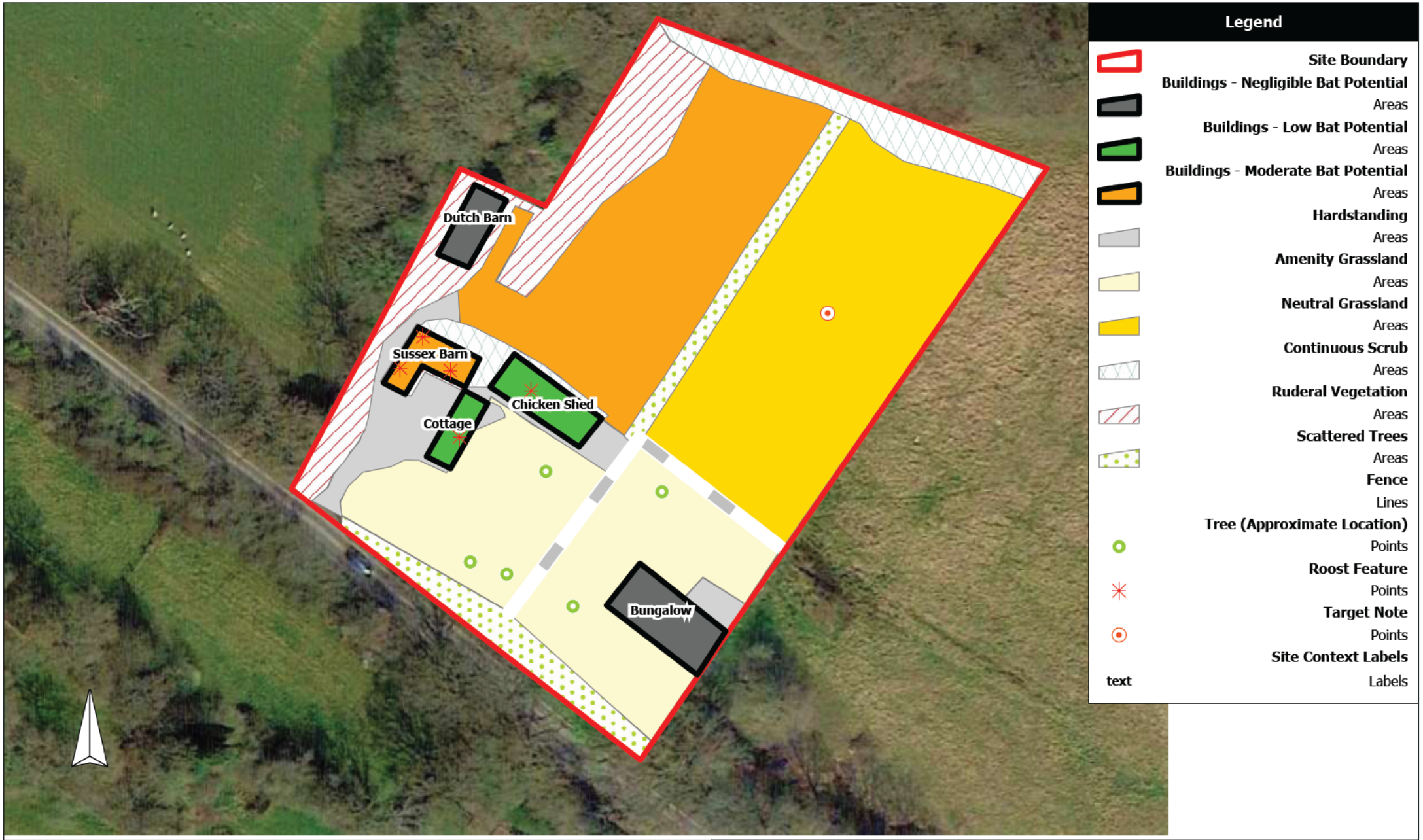


Figure 1: Three Buildings, Pullborough Habitat Survey

Drawn by: HW
On the: 24/05/2022
Not to Scale
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Appendix B

Photographs and Target Notes

Photographs and Target Notes

Photo No.	Feature (Target Note No.)	Photograph of Feature
1	Bungalow – building situated at southeast perimeter with negligible bat potential	
2	Cottage – vacant building situated at the southwest perimeter with low bat potential	

3	Chicken Shed – single storey work shop situated in the southwest perimeter with a low potential for bats	
4	Sussex Barn – double storey barn situated in the southwest perimeter with a moderate potential for bats	
5	Dutch Barn – double storey barn situated at west boundary with a negligible potential for bats	

6	Amenity grassland currently in use as a campsite	
7	Target Note: Neutral grassland with plastic container was a suitable area for reptiles	
8	The Cottage PRF's - loose tiles and lifted ridge tiles	

9	The Chicken Shed PRF's – chimney spouts and gaps in roofing	
10	The Sussex Barn PRF's - loose, lifted, and broken tiles at the south and north aspects	

11	Sussex barn dense ivy covering at eastern wall	

Appendix C

Legislation

Legislation

This section contains information pertaining to the legislation and planning policy applicable in Britain. This information is not applicable to Northern Ireland, the Republic of Ireland the Isle of Man or the Channel Islands. Information contained in the following appendix is provided for guidance only.

Species

The objective of the EC Habitats Directive5 is to conserve plants and animals which are considered to be rare across Europe. The Directive is transposed into UK law by The Conservation of Habitats and Species Regulations 2017 (as amended) (formerly The Conservation (Natural Habitats, &c.) Regulations 1994 (as amended) and The Offshore Marine Conservation (Natural Habitats, &c.) Regulations 2007 (as amended).

The Wildlife and Countryside Act 1981 (as amended) implements the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) and also implements the obligations set out for species protection from the Council Directive 2009/147/EC (formerly 79/409/EEC) on the Conservation of Wild Birds (EC Birds Directive) in Great Britain.

Various amendments have been made since the Wildlife & Countryside Act came into force in 1981. Further details pertaining to alterations of the Act can be found on the following website: www.opsi.gov.uk. Key amendments have been made through the Countryside and Rights of Way (CRoW) Act (2000) and Nature Conservation (Scotland) Act 2004.

There are a number of other legislative Acts affording protection to species and habitats. These include:

- Countryside and Rights of Way (CRoW) Act 2000;
- Deer Act 1991;
- Natural Environment & Rural Communities (NERC) Act 2006;
- Protection of Badgers Act 1992; and
- Wild Mammals (Protection) Act 1996.

Badgers

Badgers and their setts are protected under the Protection of Badgers Act (1992), which consolidated and added to the previous Badger Acts of 1973 and 1991. Under this legislation it is an offence to:

[5] Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora.

- cruelly ill-treat a badger, including use of tongs and digging;
- intentionally or recklessly cause a dog to enter a badger sett;
- intentionally or recklessly damage, destroy or obstruct access to a badger sett[6] or any part thereof;
- intentionally or recklessly disturb[7] a badger when it is occupying a badger sett;
- possess or control a dead badger or any part of a badger;
- sell or offers for sale, possesses or has under his control, a live badger; and
- wilfully kill, injure, take, or attempt to kill, injure or take a badger.

A Development Licence will be required from Natural England for any development works affecting an active badger sett, or to disturb badgers while individuals are occupying the sett. Depending on the nature of the works and the specifics of the sett, badgers could be disturbed by work near the sett even if there is no direct interference or damage to the sett itself. Natural England has issued guidelines on what constitutes a licensable activity. There is no provision in law for the capture of badgers for development purposes and therefore it is not possible to obtain a licence to translocate badgers from one area to another.

Bats

Bats are protected under Schedule 5 of the Wildlife & Countryside Act 1981 (as amended). This act protects individuals from:

- intentional or reckless disturbance (at any level);
- intentional or reckless obstruction of access to any place of shelter or protection; and
- selling, offering or exposing for sale, possession or transporting for purpose of sale.

In addition, all species of bat are fully protected under The Conservation of Habitats and Species Regulations 2017 (as amended) through their inclusion on Schedule 2. Regulation 41 prohibits:

- deliberate killing, injuring or capturing of Schedule 2 species (all bats);
- deliberate disturbance of bat species as to impair their ability:

  (i) to survive, breed, or reproduce, or to rear or nurture young; and

[6] A badger sett is defined in the legislation as *"any structure or place which displays signs indicating current use by a badger"*. This includes seasonally used setts. Natural England (2009) have issued guidance on what is likely to constitute current use of a badger sett: www.naturalengland.org.uk/Images/WMLG17_tcm6-11815.pdf

[7] For guidance on what constitutes disturbance and other licensing queries, see Natural England (2007) Badgers & Development: A Guide to Best Practice and Licensing. www.naturalengland.org.uk/Images/badgers-dev-guidance_tcm6-4057.pdf, Natural England (2009) Interpretation of 'Disturbance' in relation to badgers occupying a sett www.naturalengland.org.uk/Images/WMLG16_tcm6-11814.pdf, Scottish Natural Heritage (2002) Badgers & Development. www.snh.org.uk/publications/online/wildlife/badgersanddevelopment/default.asp and Countryside Council for Wales (undated) Badgers: A Guide for Developers. www.ccw.gov.uk.

(ii) to hibernate or migrate.

- deliberate disturbance of bat species as to affect significantly the local distribution or abundance of the species;
- damage or destruction of a breeding site or resting place; and
- keeping, transporting, selling, exchanging or offering for sale whether live or dead or of any part thereof.

A European Protected Species Mitigation (EPSM) Licence issued by Natural England will be required for works liable to affect a bat roost or for operations likely to result in a level of disturbance which might impair their ability to undertake activities listed above. A licence is required to allow derogation from the relevant legislation but also to enable appropriate mitigation measures to be put in place and monitored.

Breeding Birds

Under the Wildlife & Countryside Act, 1981 (as amended), a wild bird is defined as any bird of a species that is resident in or is a visitor to the European Territory of any member state in a wild state. Game birds, however, are not included in this definition (except for limited parts of the Act). They are covered by the Games Acts, which fully protect them during the closed season.

Under the Wildlife & Countryside Act, 1981 (as amended), all birds, their nests and eggs are protected under Sections 1-8 of the Act and it is an offence, with certain exceptions, to:

- intentionally (or recklessly in Scotland) kill, injure or take any wild bird;
- intentionally (or recklessly in Scotland) take, damage or destroy (or, in Scotland, otherwise interfere with) the nest of any wild bird while it is in use or being built;
- intentionally take or destroy the egg of any wild bird;
- have in one's possession or control any wild bird, dead or alive, or any part of a wild bird, which has been taken in contravention of the Act;
- have in one's possession or control any egg or part of an egg which has been taken in contravention of the Act;
- use traps or similar items to kill, injure or take wild birds;
- have in one's possession or control any bird (dead or alive) unless registered, and in most cases ringed, in accordance with the Secretary of State's regulations; and
- in Scotland only, intentionally or recklessly obstruct or prevent any wild bird from using its nest.

Certain rare species receive additional special protection under Schedule 1 of the Act and Annex 1 of the European Community Directive on the Conservation of Wild Birds (2009/147/EC). This affords them protection against:

- intentional or reckless disturbance while it is building a nest or is in, on or near a nest containing eggs or young;
- intentional or reckless disturbance of dependent young of such a bird;
- in Scotland only, intentional or reckless disturbance whilst lekking; and
- in Scotland only, intentional or reckless harassment.

The British Trust for Ornithology (BTO) has a list of birds that are Species of Conservation Concern. These birds are not legally protected but where they are found on site they should be given planning consideration. The criteria for birds listed as amber (medium conservation concern) include:

- historical population decline during 1800-1995, but recovering: population has more than doubled over last 25 years;
- moderate (25-49%) decline in UK breeding population over last 25 years;
- moderate (25-49%) contraction of UK breeding range over last 25 years;
- moderate (25-49%) decline in UK non-breeding population over last 25 years;
- species with unfavourable conservation status in Europe (Species of conservation Concern);
- five year mean of breeding pairs in the UK;
- ≥50% of UK breeding population in 10 or fewer sites;
- ≥50% of UK non-breeding population in 10 or fewer sites;
- ≥20% of European breeding population in UK; and
- ≥20% of NW European (wildfowl), East Atlantic Flyway (waders) or European (others) non breeding populations in UK.

Hazel Dormice

The hazel dormouse (*Muscardinus avellanarius*) is fully protected under The Conservation of Habitats and Species Regulations 2017 through its inclusion on Schedule 2. Regulation 41 prohibits:

- deliberate killing, injuring or capturing;
- deliberate disturbance as to impair its ability:

  (i) to survive, breed, or reproduce, or to rear or nurture young; and

  (ii) to hibernate or migrate.
- deliberate disturbance as to affect significantly the local distribution or abundance of the species;
- damage or destruction of a breeding site or resting place; and
- keeping, transporting, selling, exchanging or offering for sale whether live or dead or of any part of this species.

The hazel dormouse is also currently protected under the Wildlife and Countryside Act 1981 (as amended) through its inclusion on Schedule 5. Under this Act, this species is additionally protected from:

- intentional or reckless disturbance;
- intentional or reckless obstruction of access to any place of shelter or protection; and
- selling, offering or exposing for sale, possession or transporting for purpose of sale.

A European Protected Species Mitigation (EPSM) Licence issued by Natural England will be required for works liable to affect dormouse breeding or resting places (N.B. this is usually taken to mean dormouse 'habitat') or for operations likely to result in a level of disturbance which might impair their ability to undertake those activities mentioned above. The licence will allow derogation from the relevant legislation but will also to enable appropriate mitigation measures to be put in place and monitored.

Herpetofauna (Reptiles and Amphibians)

The following species receive full protection under the Conservation of Habitats and Species Regulations 2017 (as amended) through their inclusion on Schedule 2.

- sand lizard (*Lacerta agilis*);
- smooth snake (*Coronella austriaca*);
- natterjack toad (*Epidalea calamita*);
- great crested newt (*Triturus cristatus*); and
- pool frog (*Pelophylax lessonae*).

Under this legislation, Regulation 41 prohibits:

- deliberate killing, injuring or capturing of species listed on Schedule 2;
- deliberate disturbance of any Schedule 2 species as to impair their ability:

  (i) to survive, breed, or reproduce, or to rear or nurture young; and

  (ii) to hibernate or migrate.
- deliberate disturbance of any Schedule 2 species as to affect significantly the local distribution or abundance of the species;
- deliberate taking or destroying of the eggs of a Schedule 2 species;
- damage or destruction of a breeding site or resting place; and
- keeping, transporting, selling, exchanging or offering for sale whether live or dead or of any part of a species.

With the exception of the pool frog, these species are also currently listed on Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). Under this Act, they are additionally protected from:

- intentional or reckless disturbance (at any level);
- intentional or reckless obstruction of access to any place of shelter or protection; and
- selling, offering or exposing for sale, possession or transporting for purpose of sale.

Other native species of herpetofauna are protected solely under Schedule 5 of the Wildlife & Countryside Act 1981 (as amended). These species include:

- adder (*Vipera berus*);
- grass snake (*Natrix natrix*);
- common lizard (*Zootoca vivipara*); and
- slow-worm (*Anguis fragilis*).

Under this legislation, for these species it is prohibited under Section 9(1) & (5) to:

- intentionally (or recklessly in Scotland) kill or injure these species; or
- sell, offer or expose for sale, possess or transport for purpose of sale these species, or any part thereof.

The following species are listed in respect to Section 9(5) of Schedule 5 of the Wildlife & Countryside Act 1981 (as amended) which only affords them protection against sale, offering or exposing for sale, possession or transport for the purpose of sale:

- common frog (*Rana temporaria*);
- common toad (*Bufo bufo*);
- smooth newt (*Lissotriton vulgaris*); and
- palmate newt (*L. helveticus*).

Water Voles

The water vole (*Arvicola amphibius*) (=*terrestris*) is fully protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). This makes it an offence to:

- intentionally kill, injure or take (capture) this species;
- intentionally or recklessly damage, destroy or obstruct access to any structure or place used for shelter or protection;
- intentionally or recklessly disturb water voles while they are occupying a structure or place used for shelter or protection; and
- sell, offer or expose for sale, or have in his possession or transport for the purpose of sale, any live or dead water vole or part of this species.

Where development works are liable to affect habitats known to support water voles, Natural England must be consulted. All alternative design options must have been explored and communicated to Natural England in order to demonstrate that works have

tried to avoid contravening the legislation e.g. the use of alternative sites, appropriate timing of works to avoid times of the year in which water voles are most vulnerable etc. Conservation licences for the capture and translocation of water voles may be issued by Natural England for the purpose of development activities if it can be shown that the activity has been properly planned and executed and thereby contributes to the conservation of the population.

Otters

Otters (*Lutra lutra*) are fully protected under The Conservation of Habitats and Species Regulations 2017 through their inclusion on Schedule 2. Regulation 41 prohibits:

- deliberate killing, injuring or capturing of otters;
- deliberate disturbance as to impair their ability:

  (i) to survive, breed, or reproduce, or to rear or nurture young; and

  (ii) to hibernate or migrate.
- deliberate disturbance as to affect significantly the local distribution or abundance of the species;
- damage or destruction of a breeding site or resting place; and
- keeping, transporting, selling, exchanging or offering for sale whether live or dead or of any part of this species.

Otters also receive protection under the Wildlife and Countryside Act 1981 (as amended) through their inclusion on Schedule 5. Under this Act, they are additionally protected from:

- intentional or reckless disturbance (at any level);
- intentional or reckless obstruction of access to any place of shelter or protection; and
- selling, offering or exposing for sale, possession or transporting for purpose of sale.

A European Protected Species Mitigation (EPSM) Licence issued by Natural England will be required for works liable to affect breeding or resting places or for activities likely to result in a level of disturbance which might impair their ability to undertake those activities mentioned above. The licence is to allow derogation from the relevant legislation but also to enable appropriate mitigation measures to be put in place and monitored.

Wild Mammals

All wild mammals are protected against intentional acts of cruelty under the Wild Mammals (Protection) Act 1996. Under this legislation it is an offence to:

- mutilate, kick, beat, nail or otherwise impale, stab, burn, stone, crush, drown, drag or asphyxiate any wild mammal with intent to inflict unnecessary suffering.

To avoid possible contravention of this legislation, due care and attention should be taken when carrying out works that have the potential to impact any wild mammal as described above.

Plants

Wild plants are protected under the Wildlife and Countryside Act 1981 (as amended) which makes it an offence for an 'unauthorised' person to intentionally (or recklessly in Scotland) uproot wild plants. An authorised person can be the owner of the land on which the action is taken, or anybody authorised by them.

Some rare plant species also receive full protection under Schedule 8 of the Wildlife and Countryside Act 1981 (as amended). This prohibits:

- intentionally (or recklessly in Scotland) picking, uprooting or destruction of any wild Schedule 8 species (or seed or spore attached to any such wild plant in Scotland only); and
- selling, offering or exposing for sale, or possessing or transporting for the purpose of sale, any wild live or dead Schedule 8 plant species or parts.

In addition to the legislation outlined above, several plant species are fully protected under Schedule 5 of The Conservation of Habitats and Species Regulations 2017. Regulation 45 makes it an offence to:

- deliberately pick, collect or destroy a wild Schedule 5 species; and
- be in possession of, or control, transport, sell or exchange any wild live or dead Schedule 5 species or anything derived from it.

A European Protected Species Mitigation (EPSM) Licence issued by Natural England will be required for works liable to affect species of plant listed under The Conservation of Habitat and Species Regulations 2017.

Invasive Plant Species

Certain plants are listed on Part II of Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) in respect to Section 14(2). Species include:

- Japanese knotweed (*Reynoutria japonica*);
- giant hogweed (*Heracleum mantegazzianum*);
- Himalayan balsam (*Impatiens glandulifera*);
- certain species of rhododendron (*Rhododendron* sp.); and
- certain species of cotoneaster (*Cotoneaster* sp.).

Species listed are non-natives whose establishment or spread in the wild may be detrimental to native wildlife. Inclusion on Part II of Schedule 9 therefore makes it an offence to:

- plant or otherwise cause these species to grow in the wild.

This legislation makes it is an offence to cause species listed to grow in the wild. Therefore, if they are present on site and development activities have the potential to cause the further spread of these species to new areas, it will be necessary to ensure appropriate measures are in place to prevent this.

Habitats

International Statutory Designations

- Special Protection Areas (SPAs): Terrestrial SPA's are afforded protection by The Conservation (Natural Habitats, &c. Regulations 1994 (as amended) an offshore SPA's are afforded protection under The Offshore Marine Conservation (Natural Habitats, &c.) Regulations 2007 (as amended). SPAs are designated under the EC Birds Directive (Council Directive 2009/147/EC on the Conservation of Wild Birds). SPAs are areas recognised as important habitat for rare and migratory birds within the European Union (rare birds as listed on Annex I of the Directive).
- Special Areas of Conservation (SACs): These areas are designated under the EC Habitats Directive (Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora), designated for the habitats and (non-bird) species listed on Annexes I and II to the Directive under the same regulations as detailed for SPA's.
- Ramsar sites: These areas are wetlands designated under the Convention on Wetlands of International Importance (1971). Wetlands can include areas of marsh, fen, water or peatland and may be natural or artificial, permanent or temporary. Ramsar sites are underpinned through prior notification as Sites of Special Scientific Interest (SSSIs) and as such receive statutory protection under the Wildlife & Countryside Act 1981 (as amended) with further protection provided by the Countryside and Rights of Way (CRoW) Act 2000.

National Statutory Designations

- Sites of Special Scientific Interest (SSSIs): These sites are designated by the countryside agencies (for example Natural England) under the Wildlife & Countryside Act 1981 (as amended). Prior to 1981 these were designated under the National Parks and Access to the Countryside Act 1949. Improved mechanisms for the protection of SSSIs have also been introduced by the Countryside and Rights of Way Act 2000 (in England and Wales).
- National Nature Reserves: These sites are also designated by the countryside agencies under the Wildlife & Countryside Act 1981 (as amended).

Local Statutory Designations

- 1949 Local Nature Reserves (LNRs): These sites are designated by local authorities under the National Parks and Access to the Countryside Act 1949. These are sites recognised for their wildlife or geological interest at a local level and are managed for nature conservation.

Non-Statutory Designations

- Local Wildlife Sites: Areas of local conservation interest may be designated by local authorities. The terminology for these sites varies depending on the county. They can be called Sites of Nature Conservation Importance (SNCI's), Sites of Importance for Nature Conservation (SINCs), County Wildlife Sites (CWS), Listed Wildlife Sites (LWS), Local Nature Conservation Sites (LNCS), Sites of Biological Importance (SBIs). The designation criteria may vary between counties. Local Wildlife Sites are of material consideration when planning applications are being determined.
- The Hedgerow Regulations 1997: These have been compiled to protect 'important' countryside hedgerows from damage or removal. A hedgerow is considered important if (a) has existed for 30 years or more; and (b) satisfies at least one of the criteria listed in Part II of Schedule 1 of the Regulations. Under the Regulations, it is against the law to remove or destroy certain hedgerows without permission from the local planning authority. Hedgerows covered by these regulations include those on or adjacent to common land, SSSIs (including all terrestrial SACs, NNRs and SPAs), LNRs, land used for agriculture or forestry and land used for the keeping or breeding of horses, ponies or donkeys.

National Planning Policy

- The National Planning Policy Framework (NPPF) (2021) replaces the former NPPF 2019, 2018 and 2012, and the former PPS9 document and emphasises the need for sustainable development. The Framework specifies the need to protect and enhance biodiversity and geodiversity. Identify and safeguard components of local wildlife-rich habitats and wider ecological networks including the hierarchy of international, national and locally designated sites of importance for biodiversity; wildlife corridors; and stepping that connect them. Plus partnerships for habitat management, enhancement, restoration or creation. The Framework aims to promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species. In determining a planning application, planning authorities should aim to conserve and enhance biodiversity by ensuring that: designated sites are protected from adverse harm; appropriate mitigation or compensation measures are in place where significant harm cannot be avoided; opportunities to incorporate biodiversity in and around developments are encouraged; and planning permission is refused for development resulting in the loss or deterioration of irreplaceable habitats including aged or veteran trees and also ancient woodland.

Local Planning Policy

Horsham District Planning Framework (2015)

Policy 25 - District Character and the Natural Environment:

- As set out in the introduction to this chapter, the rural qualities of Horsham district are highly valued by those who live and work here, and the landscape and environment also contribute to the economy of the district, both directly and indirectly. The Council is seeking to maintain and where appropriate enhance the beauty and amenity of both the natural and built-up areas of the district. The potential for development to result in small changes which cumulatively impact on landscape, settlement character and the natural environment will be a key consideration, particularly in terms of the impact on smaller scale and local features. In addition to the protected landscapes, as shown on the Policies map, Neighbourhood Plans and other development proposals will need to demonstrate that proposals conserve and enhance the character of the district as identified in documents such as the Horsham District Landscape Character Assessment 2003, and that development is located in areas with the greatest landscape capacity to accommodate development, as indicated in the Landscape Capacity Assessment 2014. Where appropriate, local greenspace designations may also have a role in conserving and enhancing the character of the district, where it can be demonstrated that they are special to the local community.
- Consideration of the townscape character of settlements will be informed by broad based studies of historic character, Conservation Area Appraisals, Village or Parish design statements and any emerging Neighbourhood Plans. Maintenance of the existing

settlement pattern is a key objective for the Council, and in particular maintaining the separation between settlements.

- Neighbourhood Plans and development proposals will also need to demonstrate that proposals contribute to the multi-functional network of green spaces, water and other environmental features in urban and rural areas known as Green Infrastructure. It includes trees, parks, road verges, allotments, cemeteries, woodlands, rivers and wetlands. The Council's Green Infrastructure Strategy identifies current and potential future provision of Green Infrastructure. This includes the opportunity to enhance existing biodiversity in identified opportunity areas or any subsequent updates. Neighbourhood Plans and development proposals will also be required to demonstrate that existing biodiversity is protected and enhanced, including the hierarchy of designated sites indicated on the proposals maps and where necessary, demonstrate the requirements of the Habitats Regulations have been met.
- Whilst it is recognised that the undeveloped nature of rural areas must be protected, it is acknowledged that there may be circumstances where development is necessary to ensure the continued sustainable development of rural areas. This might include development which is required to sustain social and economic needs of rural communities, such as subsidised housing, business uses, community, leisure, cultural and tourism facilities, and necessary upgrades to infrastructure, such as water supplies, or high speed broadband and renewable energy.

Policy 26 – Countryside Protection:

- Horsham district covers a large area and contains a diverse range of characteristics, from the heavily wooded character in the north, to more open river floodplains in the south. The Council is seeking to identify the most valued parts of the district for protection, as well as maintain and enhance this natural beauty and the amenity of the district's countryside. It is considered important that the unique characteristics of the district's landscapes are retained and where practicable, enhanced. It will be necessary to ensure that development proposals take into account the key characteristics of the landscape character areas.

Policy 30 – Protected Landscapes:

- Designated for their national importance in terms of landscape and scenic quality, sections of both the High Weald Area of Outstanding Natural Beauty (AONB) and the South Downs National Park fall within the administrative area of Horsham district. The South Downs National Park Authority is the Planning Authority for the National Park Area of Horsham district, and this policy, in common with all others in this plan does not apply to the land within the National Park Area.
- It is essential that the key qualities of these protected landscapes are conserved and enhanced. In the AONB, this includes the heavily wooded character, gill streams, and historic farmsteads and into the locally distinctive hammer ponds whereas a key feature of the South Downs are the steep scarp slopes which form a backdrop to many of the settlements in the south of the district. The conservation and enhancement of protected landscapes will be actively supported, particularly as defined in the High Weald AONB

Management Plan and the South Downs Integrated Assessment Plan or any other relevant updates to these documents.

- Development has the potential to harm protected landscapes. Major development will not normally be permitted, and will need to demonstrate that the need for development cannot be met elsewhere or in another way, and that the development is in the public interest. It is however acknowledged that protected landscapes need to be able to adapt to cope with new pressures and meet the needs of residents in the area, and there may be cases where small scale development that helps to maintain economic or social well being in or adjoining these landscapes is necessary.
- Development close to the edge of both the AONB and the South Downs National Park has the potential to have adverse impacts on the qualities of these landscapes, and applicants will need to be mindful of this in relation to any proposals close to the boundary of either of these protected landscapes.

Policy 31 – Green Infrastructure and Biodiversity:

- Green Infrastructure is a term used to describe a multi-functional and connected network of green spaces, water and other environmental features in urban and rural areas. It includes trees, parks, road verges, allotments, cemeteries, woodlands, rivers and wetlands. Green Infrastructure can contribute to the provision of 'ecosystem services'. This includes flood protection, water purification, carbon storage, land for food production, places for recreation, landscape and nature conservation. Without these services, life as we know it would not be possible, and increased flooding or drought episodes will have severe economic consequences.
- The Council has identified the key strategic Green Infrastructure Assets and opportunities in the district. In addition to existing features such as woodland and rivers, there are also new opportunity areas where new elements of green infrastructure could be provided in the future. It should also be recognised that Green Infrastructure extends beyond Council boundaries - the Downs Link for example extends north to Guildford and south to Shoreham-by-Sea. Green Infrastructure also exists at a smaller scale, in towns, villages and neighbourhoods, and new developments can also provide new green infrastructure through the provision of sustainable drainage systems that can also be used as green spaces, or by providing new recreation routes that are planted to benefit biodiversity.
- The network of Green Infrastructure within the district must be maintained and enhanced. Further detail on the precise location of the strategic green infrastructure assets is available in the Council's Green Infrastructure strategy documentation. Applicants will also need to be mindful of other policies in this document which also contribute to the provision of Green Infrastructure.
- Forming part of the Green Infrastructure network of the district, Horsham district contains a rich network of biodiversity (variety of life). The nature of the habitats and

species found across the District is very varied, but key characteristics include the network of woodland habitats, which is particularly dense in the north of the district. Much of this woodland has been present since at least 1600. Designated as ancient woodland, these areas are of particular importance to wildlife and are irreplaceable. As identified by the Local Economic Partnership, woodland has the potential to play a key economic role in the district in the future, providing a low carbon fuel source together with biodiversity benefits. Another key habitat in the District is the dense network of hedgerows, which support a range of wildlife in their own right, and act as corridors, linking wildlife habitats across the district. The floodplains of the Arun and Adur are also distinctive habitats within the district, and the Arun Valley in is of both national and international importance for nature conservation. Farmland is another key habitat across the district, and the south-west of the district provide an important feeding ground for the internationally important Barbastelle bats.

- Development has the potential to harm biodiversity both directly and indirectly. Direct effects include loss of land to new development, whereas indirect effects include increased traffic resulting in a decline in air quality, which can impact habitats and species some distance from a development site. Development does however have potential to create places for biodiversity, for example by planting native species as part of site landscaping, or incorporating features such as bat or bird boxes.
- This policy seeks to ensure that development does not cause a net loss in biodiversity, and provides net gains in biodiversity where possible. The Policies Map shows the location of key nature conservation sites and further information regarding the location of areas with potential for enhancing biodiversity (biodiversity opportunity areas) available in the Council's Green Infrastructure Strategy and the Sussex Biodiversity Action Plan. Further information on habitats and species that have been recorded in the District is available from the Sussex Biodiversity Record Centre.
- Development proposals must provide sufficient information to assess the effects of development on biodiversity, and should provide any necessary ecological surveys together with any proposed prevention, mitigation or compensation measures. All development proposals should seek to enhance biodiversity through a range of measures, including enhancements either on or off the site, and provide buffer strips around protected sites, including Ancient woodland and other vulnerable habitats, and maintain, re-instate and enhance wildlife corridors. Applicants will also need to be mindful of the presence of any invasive species on the site and seek to remove these in accordance with any relevant legislation.
- Although located in the South Downs National Park, applicants will need to be particularly mindful of the impact development within Horsham district could have on Arun Valley Special Protection Area (SPA) and The Mens Special Area for Conservation (SAC). Both these sites are of international importance for nature conservation, and applicants will need to demonstrate that development does not have adverse impacts on either of these sites in accordance with relevant legislation. In the case of Arun Valley, proposals must demonstrate that they will avoid harm to the water quality and water levels on the site. In the case of The Mens, development must not impact on bat flight paths in the district. As recommended in the Council's Habitat Regulations Assessment of

this plan, a 'bat sustenance zone' has been identified and is shown on the Policies Map. Within this area, it may be necessary for compensatory measures such as hedgerow enhancement to be undertaken prior to any development.

- In addition to the wider importance of woodland and Ancient Woodland identified above, individual trees, including 'veteran trees' are also important contributors to the character and biodiversity of the District, and many are protected by Tree Preservation Orders. It should be recognised that it may sometimes be necessary to undertake work on or fell protected trees (eg due to disease or storm damage). Applicants wishing to undertake work on protected trees are advised to consult the available Government Guidance on this issue. Where replacement planting is required, replanting with native species will be encouraged to ensure that ecological networks remain functional and to prevent the isolation of trees and woodland in the landscape.

Appendix D

Plant Species List

Plant Species List

Scientific nomenclature follows Stace (2010) for vascular plant species and British Bryological Society (BBS) Special Volume No. 5 *English Names for British* Bryophytes for bryophyte species. Vascular plant common names follow the Botanical Society of the British Isles 2003 list, published on its web site, www.bsbi.org.uk. The plant species list was generated as part of a Phase 1 Habitat survey and does not constitute a full botanical survey.

Abundance was estimated using the DAFOR scale as follows:

D = dominant, A = abundant, F = frequent, O = occasional, R = rare, L = locally

Key to qualifiers: G=garden origin, P=planted, Y = young, S=seedling or sucker, T=tree, H=hedge, W=water,? = identification uncertain.

Scientific Name	Common Name	Abundance	Qualifier
Abies sp	Fir	O	T
Acer campestre	Field maple	F	T
***Ajuga reptans* L.**	Ajuga	F	S
Arctium lappa	Burdock	F	S
Betula pendula	Silver birch	O	T
Castanea sativa	Sweet chestnut	O	T
Cirsium vulgare	Spear thistle	F	S
Cratageus laevigata	Midland hawthorn	O	T
Cruciata laevipes	Crosswort	F	S
Dactylis glomerata	Cocks foot	F	S
Fraxinus excelsior	Common ash	O	T
Jacobaea sp	Ragwort	F	S
Juncus effusus	Common rush	F	S
***Lindens* sp**	Lime	O	T

Lotus corniculatus	Birds foot trefoil	F	S
***Poa* sp**	Meadow grass	F	S
Populus alba	White poplar	F	T
***Prunus spinosa* L.**	Blackthorn	O	P
Quercus robur	Common oak	O	T
Rubus fruiticosus	Bramble	F	S
Rumex crispus	Curly dock	F	S
Rumex obtusifolius	Broad-leaved dock	F	S
Salix babylonica	Weeping willow	O	T
Salix caprea	Goat willow	F	P
Stellaria graminea	Lesser stitchwort	F	S
Trifolium sp	White clover	F	S
Urtica dioica	Common nettle	A	S

Appendix E

Suggested Compensatory Planting

Suggested Compensatory Planting

This section provides a list of plants which are of proven value to wildlife. The list is not exhaustive and merely provides a guide for suggested planting for wildlife value. Planting should be tailored on a site by site basis. The list includes some native and ornamental species however the emphasis should always be on the use of predominantly native species.

N = Native, NN = Non-native.

This list includes species that may be harmful if handled or ingested. Schedule 9 (Part 2) of the Wildlife and Countryside Act, 1981 (as amended) includes a list of invasive plants, including aquatic species, that should always be avoided in planting schemes.

Large Shrubs

Hedge veronica/Hebe (*Veronica* spp.) NN

Hawthorn (*Crataegus monogyna*) N

Blackthorn (*Prunus spinosa*) N

Rose: dog rose (*Rosa canina*), field rose (*R. arvensis*), burnet rose (R*. pimpinellifolia*) N

California lilac (*Ceanothus* spp.), (*C. arborea*) NN

Wild privet (*Ligustrum vulgare*) N

Common holly (*Ilex aquifolium*) N

Barberry (*Berberis* spp.) (*B. darwinii*), (*B. thunbergii*), (*B. x stenophylla*) NN

Daisy Bush (*Olearia* spp.), (*O. x hastii*), (*O. macrodonta*) and (*O. traversii*) NN

Firethorn (*Pyracantha coccinea*) NN

Hazel (*Corylus avellana*) N (*C. maxima*) NN

Viburnum (*Viburnum* spp.), wayfaring tree (*V. lantana*) N, guelder rose (*V. opulus*) N, laurustinus (*V. tinus*) E Note: V. lantana can become invasive in more open habitats.

Dogwood (*Cornus sanguinea*) N

Broom (*Cytisus scoparius*) N

Escallonia (*Escallonia macrantha*) NN

Hardy fuchsia (*Fuchsia magellanica*) NN

Buckthorn (*Rhamnus cathartica*) N

Spindle (*Euonymus europaeus*) N

Tutsan (*Hypericum androsaemum*) N

Yew (*Taxus baccata*) N

Trees

Cherry (*Prunus* spp.), wild cherry (*P. avium*), bird cherry (*P. padus*), domestic plum (*P. domestica*) N or cherry plum (*P. cerasifera*) NN

Ash (*Fraxinus excelsior*) N

Apple (*Malus* spp.), edible apple (*M. domestica*), crab apple (*M. sylvestris*) N

Pear (*Pyrus* spp.), edible pear (*P. communis*) NN

Small-leaved lime (*Tilia cordata*) N

Silver birch (*Betula pendula*) N

Yew (*Taxus baccata*) N

Black poplar (*Populus nigra*) N

Foxglove tree (*Paulownia tomentosa*) NN

Beech (*Fagus sylvatica*) N

Climbers

Jasmine (*Jasminum* spp.), summer jasmine (*J. officinale*), winter jasmine (*J. nodiflorum*) NN

Ivy (*Hedera helix*) N

Climbing hydrangea (*Hydrangea anomala* ssp. *petiolaris*) NN

Honeysuckle (*Lonicera* spp.) (*L. periclymenum*) N

Clematis (*Clematis* spp.) NN

Hop (*Humulus lupulus*) N

Firethorn (*Pyracantha atalantioides*) NN

Bulbs

English bluebell (*Hyacinthoides non-scripta*) N

Squill species (*Scilla* spp.) N/NN

Snowdrop (*Galanthus nivalis*) N

Winter aconite (*Eranthis hyemalis*) E

Crocus species (*Crocus* spp.) NN

Wild Daffodil (*Narcissus pseudonarcissus*) N

Onion species (*Allium* spp.) N/NN. N.B. *Allium triquetrum* (three cornered leek) and *Allium paradoxum* (few-flowered leek) are Schedule 9 invasive plant species.

Wood anemone (*Anemone nemorosa*) N

Lesser celandine (*Ficaria verna*) N

Appendix F

Bird and Bat Box Designs

Bird and Bat Box Designs

Bird Boxes

Example	Type	Dimension D x W x H (cm)	Target Species	Location
	**Schwegler Nest Box 1B** Hole-fronted 26mm entrance hole	16 x 16 x 23	Multi-purpose, including: blue-, marsh-, coal and crested tit and possibly wren. All other species are prevented from using the nest box due to the smaller entrance hole.	Suitable walls or semi-mature/mature trees and shrubs; attached to a tree trunk or hung from branches. Ideal points include discrete areas away from predators, such as against walls, plant and metal supports.
	**Schwegler Bird House** 32mm entrance hole	15 x 21 x 33	Multi-purpose, including: great-, blue-, marsh- and coal tit, redstart, nuthatch, pied flycatcher and sparrows.	Fixed to a semi-mature/mature tree trunk, wall or fence using the hanging bracket on the back. Between 1.5 m and 3 m high, and should be sited higher if your area has a particularly high cat population.

Example	Type	Dimension D x W x H (cm)	Target Species	Location
	**Schwegler Sparrow Terrace 1SP**	20 x 43 x 24.5	House sparrow. It may also occasionally attract tits, redstarts and spotted flycatchers.	In an elevated position such as on post/platform within dense shrub/tree planting or on top of lighting columns. Alternatively, they could be attached to the side of a building. The terrace can be fixed on to the surface of a suitable wall or incorporated into the wall. It is suitable for all types of houses in built-up areas, and on industrial and agricultural buildings such as barns, sheds and factories. Due to its weight (15kg), it is not suitable for fences or garden sheds. Ideally place the terrace two metres or more above the ground. Either install on the surface of the wall using the plugs and screws provided, or install directly into the wall Cleaning is not necessary. The front panel can be removed by turning the screw hook.

Bat Boxes

Example	Type	Dimension D x W x H (cm)	Target Species	Location
	**2F Schwegler Bat Box (General Purpose) with or without Double Front Panel**	16 x 16 x 33	Without panel: Particularly successful with brown long-eared bat. Also used by noctule. With panel: Ideal for crevice-dwelling species: pipistrelles, Myotis species (particularly Daubenton's), Leisler's and serotine.	On trees or buildings and at a height of 3 to 6m. In open sunny positions and in groups of 3 to 5 facing different directions. Please note that once bats have inhabited a roost site they may only be disturbed by licensed bat workers.
	**Chavenage Bat Box**	10 x 18 x 38	Small crevice-dwelling bats e.g. pipistrelles.	On trees in gardens or woodland and also on house walls. 2.5 - 5m high on a building, mature tree or vegetation line (trees/tall hedge) or on a feeding/flight route in partial daytime sun. Please note that once bats have inhabited a roost site they may only be disturbed by licensed bat workers.

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