PRELIMINARY ECOLOGICAL APPRAISAL

PROPERTY SPHERE LIMITED

LAND ADJACENT TO LAKE LANE
BARNHAM, BOGNOR REGIS,
WEST SUSSEX

22ND NOVEMBER 2023

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EXECUTIVE SUMMARY

A Preliminary Ecological Appraisal was carried out across land adjacent to Lake Lane in Barnham, West Sussex on the 04th October 2023. Proposals are to construct seven residential units with associated parking and landscaping however specific design proposals had not been finalised at the time of the survey. Boundary features will be largely retained as part of the proposals. The assessment was required in order to ascertain whether any ecological constraints could affect proposed development at the site. The surveyed site measures approximately 0.4ha.

The main findings of the survey are as follows:

- The site is in a semi-rural location within the northern extent of Barnham and comprised horse grazed fields together with areas of boundary scrub, tall ruderal vegetation and scattered trees. The site is bounded to the north by a commercial plant nursery with residential properties and associated gardens bounding the site in all other directions. In the wider surrounds, commercial plant nurseries and agricultural fields dominate the landscape together with residential properties.
- The site is not subject to any statutory or non-statutory designations. The closest designated site is South Downs National Park, located approximately 1.7km to the north-east. The site does not provide any supporting function for the National Park.
- The short section of stream along the eastern boundary is classed as a chalk river- a Habitat of Principal Importance (a Section 41 priority habitat). This feature is of limited quality due to an absence of long-term management, with more extensive, better examples present in the wider landscape however this feature does contribute to the wider network of chalk streams on a local scale.
- Overall, habitats within the survey site were assessed as being of local importance, having potential for use by widespread breeding birds, foraging bats, great crested newt, reptiles, badger and stag beetle. The site boundaries also form part of the wider ecological network providing wildlife corridors for more mobile species including bats and badgers to move through the landscape. The stream also contributes, to some degree to the wider network of chalk streams present in the wider landscape.
- The boundary stream and adjacent scrub habitat will be retained as part of the scheme and on this basis, this priority habitat does not pose any constraints to the works. Protected species do however pose some constraints to the proposed works.
- A series of bat activity surveys and a reptile presence/absence survey are recommended in order to ascertain presence of these species groups and enable suitable mitigation to be devised.

- It is considered that adopting a precautionary approach to works in regards to breeding birds, great crested newt, stag beetle and badger will be sufficient to fully safeguard these species' groups.
- Details regarding potential further surveys together with potential mitigation to include precautionary working practices and habitat enhancement measures are provided in the Recommendations section of the report.

1 INTRODUCTION

Background

1.1 CT Ecology Limited was commissioned by Property Sphere Limited to undertake a Preliminary Ecological Appraisal, to inform the potential ecological constraints of proposed development within land adjacent to Lake Lane in Barnham, West Sussex (hereafter referred to as "the site").

1.2 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, 2013 & 2016).

1.3 The purpose of the Preliminary Ecological Appraisal was:

- to classify the major habitats present;
- to identify the potential for any legally protected species to be present;
- to evaluate the nature conservation importance of the site;
- to recommend any additional ecological surveys and mitigation; and
- to provide recommendations for site enhancement.

Development Proposals

1.4 Proposals are to construct seven new residential dwellings with associated parking and landscaping however design proposals had not been finalised at the time of the survey. Boundary features, including trees, will be largely retained as part of the proposals.

Site Description

1.5 The application site measures approximately 0.4ha and is within a semi-rural location within the northern extent of Barnham in the Arun District of West Sussex at National Grid Reference SU969 047. The site comprised horse grazed fields with areas of bare ground and semi-improved grassland dominating the site. A single building was present in the south-east extent together with areas of boundary scrub, tall ruderal vegetation and scattered trees. A stream extended part way along the eastern site boundary.

1.6 The site is bounded to the north by a commercial plant nursery with residential properties and associated gardens bounding the site in all other directions. Access was via an access track, shared with residential properties, extending to Lake Lane to the south. A railway line (the south coast main line) is located beyond Lake Lane, approximately 360m to the south.

1.7 In the wider surrounds, commercial nurseries and agricultural fields dominate the landscape together with residential properties. The centre of Bognor Regis is approximately 6km to the south-west and the A27 is approximately 2km to the north.

2 METHODOLOGY

Desk Study & Consultations

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 and an online search for any Protected Species Mitigation Licences (PSML) within 1km. The data search was based on information provided by Sussex Biodiversity Record Centre (SxBRC 2023); Multi-Agency Geographical Information for the Countryside (MAGIC, 2023); Ordnance Survey mapping; and aerial photography.

Field Survey and Assessment

2.2 An ecological survey of the site was undertaken on 04th October 2023 by Carly Teague, a suitably qualified ecologist with over 16 years' experience as a professional ecologist. The weather conditions during the survey were mild, dry with scattered cloud cover and a gentle breeze. The temperature was 12°C at the start of the survey.

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 (Appendix B). 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 A, 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 newt (*Triturus cristatus)* and the presence of suitable terrestrial habitat including hedgerows and rough grassland;
- presence of features in, and on trees, indicating potential for roosting bats *Chiroptera*, including knot and rot holes and loose bark. The presence of features on buildings including loose roof tiles, gaps in fascia boarding in addition to secondary evidence including staining, droppings and feeding remains;
- 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;
- presence of woodland and or hedgerows providing suitable habitat to support hazel dormouse (*Muscardinus avellanarius)*; and
- habitats considered suitable to support badger (*Meles meles)* setts, and evidence in the form of hair, pathways and latrines.

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.

Caveat

Data Search

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

Preliminary Ecological Appraisal

2.11 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.

2.12 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 observed during the survey. 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.

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

3 BASELINE CONDITIONS

Aerial Photography and OS Maps

3.1 The site is in a semi-rural location, within the northern extent of Barnham. Land-use in the immediate vicinity comprises residential properties with associated gardens together with commercial plant nurseries.

3.2 There are no on-site ponds. A stream, supporting shallow, flowing water extended south-north along a section of the eastern site boundary. A series of three large lakes associated with the adjacent plant nursey are located approximately 35m north, 95m north-east and 150m north east respectively. A series of streams are located to the north and north-west of the site, the closest part of which is approximately 10m to the north of the site; joining the stream along the eastern site boundary.

3.3 Approximately 20 woodland blocks are present within 2km of the site, the closest of which is approximately 460m to the west.

Protected Species Mitigation Licences (PSML)

3.4 No PSML's or licence returns for any species were returned within a 1km radius of the site.

Statutory and Non-Statutory Designated Sites

Statutory Sites

3.5 The site is not subject to any statutory designations. There is one statutory designated site within a 2km radius; South Downs National Park is located approximately 1.7km to the north-east at its closest point. The National Park is designated for its landscape value, with its network of farmland, ancient woodland and lowland heaths, scattered farmsteads and sandstone outcrops.

Non-Statutory Sites

3.6 The site is not subject to any non-statutory designations. There is one statutory designated site within a 2km radius. Binsted Wood Complex is located approximately 1.8km to the north-east.

3.7 Binsted Wood is a complex of woodland sites that support a mixture of ancient woodland, recent woodland, conifer plantation, species-rich pasture and old tracks and shaws. The mix of habitats and geology gives rise to a very rich and diverse flora. The paths and rides are especially species-rich and Scotland Lane supports an outstanding wet ride flora that includes at least 11 species of sedge including Long-stalked Yellow-sedge (*Carex viridula ssp. brachyrhyncha*), a county rarity at its only recorded West Sussex location. This is the largest block of ancient semi-natural woodland south of the South Downs in Sussex.

Other Habitat Classifications

3.8 The site supports one Habitat of Principal Importance; the stream extending along a section of the eastern boundary is classified as a chalk stream which falls within the 'Rivers & Streams' UK BAP broad habitat type; a Section 41 priority habitat.

3.9 The definition for Rivers and Streams is as follows: *'This habitat type includes a very wide range of types, encompassing all natural and near-natural running waters in the UK (i.e. with features and processes that resemble those in 'natural' systems). These range from torrential mountain streams to meandering lowland rivers. Numerous factors influence the ecological characteristics of a watercourse, for example geology, topography, substrate, gradient, flow rate, altitude, channel profile, climate, catchment features (soil, land use, vegetation, etc.). Human activities add to this complexity. In addition most river systems change greatly in character as they flow from source to sea or lake. Although various classifications and typologies for rivers exist, none is considered adequate for identifying a discrete but comprehensive series of specific priority types against the criteria. Consequently a broad 'rivers' priority habitat has been adopted by the UK BAP, which includes the existing priority habitat, chalk rivers*' (JNCC 2011).

3.10 The site is not subject to any other habitat classifications.

Ancient Semi-Natural Woodland

3.11 There are four blocks of ancient semi-natural woodland (ASNW) within 2km of the site. The closest of which is located approximately 630m to the north.

Habitats

Site Summary

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

Table 3.1: Habitat Descriptions

Habitat Type	JNCC Code	Description	Area (ha)
Semi-Improved Grassland	B2.2	The site comprised a series of grazed fields. Some of which were dominated by bare ground but where present, the grassland was indicative of a semi-improved sward, dominated by coarse grasses indicating long-term and regular management. Dominant grassland species included Yorkshire fog (*Holcus lanatus*) with abundant perennial rye-grass (*Lolium perenne*) and sheep's fescue (*Festuca ovina*). Meadow foxtail (*Alopecurus pratensis*) was occasional and appeared to be more associated with the field margins. Forbs were occasional within the sward and included dandelion (*Taraxacum* agg.), yarrow (*Achillea millefolium*), daisy (*Bellis perennis*), ribwort plantain (*Plantago lanceolata*), creeping cinquefoil (*Potentilla reptans*), common knapweed (*Centaurea nigra*) and creeping buttercup (*Ranunculus repens*).	0.1
Scattered Trees	A3.1	A small number of scattered trees were along the eastern boundary of the site. Species included elder (*Sambucus nigra*) and hawthorn (*Crataegus monogyna*). An area of standing dead wood was also to the north of the stable unit.	0.0005
Scrub	A2.1	Areas of dense scrub had developed around the site margins. Species included willow (*Salix* sp.), bramble (*Rubus fruticosus* agg.), dog-rose (*Rosa canina*) and blackthorn (*Prunus spinosa*).	0.09
Tall Ruderal	C3.1	Ruderal species had colonized the field margins together with areas of grassland in the northern site extent where grazing had been relaxed. Common nettle (*Urtica dioica*), spear thistle (*Cirsium vulgare*) and docks (*Rumex* sp.) were dominant together with abundant willowherbs (*Epilobium* sp.) and common fleabane (*Pulicaria dysenterica*).	0.04

Bracken	C1.2	An area of scattered bracken (*Pteridium aquilinum*) had developed in the north-east corner of the site.	0.001
Running Water	G2	A short section of stream bounded the site to the east. It was not clear whether this was located within the site boundary. The stream extended for approximately 35m before from the northern corner of the site before being routed further east. The channel was narrow; approximately 0.25m wide and water was flowing south to north with a low water level at the time of the survey. The banks were relatively steep. The channel was heavily shaded by overhanging scrub. Leaf litter was evident within the channel. Aquatic vegetation was restricted to fine-leaved water dropwort (*Oenanthe aquatica*) at the time of the assessment. Ruderal vegetation had developed along the banks.	0.001
Building	J3.6	A small 'L' shaped stable unit, comprising three stalls, was located within the south-east corner of the site. This was of typical stable design with single skinned timber clad walls, timber stable doors and a single skinned, pitched corrugated concrete roof with skylights. The building was sealed at the gable ends with UPVC on the eastern and western elevations. The stable doors were open enabling ingress by bats and birds. Internally the ridge line was open, revealing the single skinned sheet metal roof above. The cladding was in good condition and well-sealed in addition to the timber supporting framework. An old barn swallow nest was observed in the northern most stall. Dense cobwebs were present throughout the roof structure.	0.005
Bare Ground/Hardstanding	J4/(Unclassified)	Areas of concrete were present around the stable unit and access into the site comprised a crushed aggregate track. Bare ground through grazing was also dominant in the southern extent of the site.	0.2
Spoil	I2.2	Stacked materials were present in the southern site extent. A large manure pile was to the north of the stable unit.	0.0003

Fence	J2.4	A combination of timber post and wire fencing around the site boundaries and electric fencing delineating the horse paddocks extended throughout the site.	N/A

Protected Species

Legislation

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

3.14 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.

Birds (excluding barn owl)

3.15 A total of three red and one amber listed Birds of Conservation Concern[1] (BoCC) were returned by the data search which may utilise habitats within the site. These include song thrush (*Turdus philomelos*), starling (*Sturnus vulgaris*), house sparrow (*Passer domesticus*) and dunnock (*Prunella modularis*). Barn swallow (*Hirundo rustica*), a notable bird may also utilise features within the site.

3.16 The site supported trees and scrub which provided potentially suitable features for a range of breeding birds and old disused barn swallow nests were observed above lights within the stable unit (Target Note 1 on the Habitat Map in Appendix B).

3.17 Overall, the site was considered to provide **high** potential for widespread nesting birds, with past nesting by barn swallow confirmed.

[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.

Barn Owl

3.18 The data search returned 12 recent (post 2011) records for barn owl within 2km of the site, all of which were located over 500m from the site.

3.19 The on-site building and trees did not provide any potential roosting or breeding habitat for barn owl due to an absence of suitable features. Although the northern extent of the field provided a habitat structure considered suitable to support foraging barn owl, the small size of the site and presence of more extensive and more optimal foraging habitat in the wider areas serves to reduce the potential for this species to utilise on site habitats.

3.20 Overall, the site was considered to provide **negligible** potential for barn owl.

Reptiles

3.21 The data search returned recent (post 2011) records for slow worm (*Anguis fragilis*), grass snake (*Natrix helvetica*) adder (*Vipera berus*) and common lizard (*Zootoca vivipara*) within 2km of the site. The closest record was from 2016 for grass snake, located approximately 300m to the south-east of the site.

3.22 Reptiles typically require a habitat mosaic which provides opportunities for sheltering, basking and hibernation. Although the centre of the site is subject to regular disturbance through grazing, field boundaries supporting a more varied habitat structure to include areas of scrub, tall ruderal and grassland edge habitat (Target Note 2 on the Habitat Map in Appendix B), have some potential to support widespread reptiles, providing basking and sheltering opportunities. The manure pile has some potential for use by grass snake for breeding with the presence of large water bodies to the north and east providing potential foraging opportunities for this species, in proximity to the site. The site is also connected to grassland to in all directions

3.23 Overall, the application site was considered to provide **moderate** potential for reptiles.

Great Crested Newt (and other amphibians)

3.24 The data search returned three recent (post 2011) records for great crested newt within 2km of the site, the closest of which (and most recent) were approximately 630m to the west from 2012.

3.25 A small number recent records were also returned for common frog (*Rana temporaria*) and common toad (*Bufo bufo*) although no records were returned from within 500m of the site boundary.

3.26 There are no on-site ponds. A stream bounded the site to the east. The desk study returned three ponds within 250m; located approximately 35m north, 95m north-east and 150m east however these were all large lakes associated with the commercial plant nurseries in these directions and considered to be sub-optimal for amphibians when viewed from aerial imagery.

3.27 A further two ponds were located within 500m to the north; approximately 370m and 480m from the site respectively. The site was relatively isolated to the south by a road, railway line and residential properties and flowing water served to isolate the site to the north and east which in turn isolated the site from ponds and lakes within the wider landscape.

3.28 The site is dominated by grassland and boundary scrub which provides potentially suitable terrestrial habitat for great crested newt however an absence of a network of suitable ponds within a 250m radius together with the isolated nature of the site to the north, east and south and absence of records within 500m serves to significantly reduce potential for this species to be exploit features within the site.

3.29 Overall, the site was considered to provide **negligible/low** potential to support great crested newt and other amphibians.

Bats

3.30 At least 17 species of bat have been recorded within 2km of the site boundary. This includes pipistrelle species (*Pipistrellus* sp.); common pipistrelle (*P. pipistrellus*); soprano pipistrelle (*P. pipistrellus*); Nathusius pipistrelle *(P. nathusii);* myotis bat (*Myotis* sp.); Daubenton's bat (*M. daubentonii*); whiskered bat (*M. mystacinus*); Brandt's bat (*M. brandtii*); natterers (*M. nattereri*); Bechstein's bat (*M. bechsteinii*); noctule (*Nyctalus noctula*); serotine (*Eptesicus serotinus*); Western barbastelle (*Barbastella barbastellus*); long-eared (*Plecotus* sp.); grey long-eared (*P. austriacus*); brown long-eared (*P. auritus*); and greater horseshoe bat (*Rhinolophus ferrumequinum*).

3.31 The most frequently recorded bat species was soprano pipistrelle followed by common pipistrelle with a total of 47 and 42 records for these species respectively.

3.32 The closest roost record is for a historic, unspecified bat roost from 1988, located over 800m from the site. The closest record for bat foraging activity was returned approximately 700m to the north-east for an unspecified bat foraging in 2005. The next closest, and more recent record is from 2015. This record pertains to foraging by common pipistrelle, soprano pipistrelle, Nathusius's pipistrelle and brown long-eared approximately 880m to the south-west.

3.33 There was a single on-site structure however this did not support any potentially suitable roosting features within or external to the structure. A small number of trees were present however these did not support any potential roosting features.

3.34 The on-site grassland and boundary scrub and trees together with areas of ruderal vegetation may provide foraging opportunities for bats with connectivity between grassland and tree lines in the wider area (Target Note 3 on the Habitat Map in Appendix B).

3.35 Overall, the application site was considered to provide **negligible** potential for roosting bats and **moderate** potential for foraging/commuting bats.

Badger

3.3[redacted]

Hazel Dormouse

3.40 The data search returned 35 recent (post 2011) records for hazel dormouse within 2km of the site. These were all located over 1.5km to the north and north-east.

3.41 Dormice are largely arboreal and rely on blocks of diverse woodland and interconnected hedgerows for survival. Individuals rarely descend to the ground except to hibernate over winter months at the base of trees. Dormice favour a range of plant species which provide a food source throughout the year. Favoured species include an abundance of hazel and honeysuckle together with frequently occurring oak and bramble amongst other species.

3.42 The site did not support any optimal dormouse habitat. The boundary scrub supported a small number of species favoured by this species however these areas were discrete in nature and the site was isolated from areas of woodland in the wider area, to include those where records have been returned. The site has some, albeit limited, connectivity to tree lines to the south however these areas are discrete in nature and isolated in all directions, serving to significantly reduce the potential for this species to exploit on-site features.

3.43 Overall, the site was considered to provide **negligible** potential for hazel dormouse.

Water Vole

3.44 The data search returned 33 recent (post 2011) records for this species within 2km of the site. The closest of which was from 2014, situated within a stream adjacent to Lake Lane approximately 650m to the west.

3.45 The section of stream extending along the eastern site boundary was considered to be sub-optimal for this species due to limited aquatic vegetation cover, the steep bank profile and the low water level supported at the time of the survey. This stream is however connected to the section of the stream further along Lake Lane; from where the 2014 record for water vole was returned. The stream was inspected as part of the PEA and no direct or secondary signs indicating presence of water vole were observed.

3.46 Overall, the site was considered to provide **negligible** potential for water vole and although no signs were observed and the stream is considered sub-optimal in its current condition there is connectivity between the stream and the wider network of streams to the north, east and west, to include areas where recent records have been returned, providing some potential for water vole to inhabit the on-site stream in the future, if conditions become more suitable.

Other Species

3.47 A large number of records for West European hedgehog (*Erinaceus europaeus*) have been returned within 2km of the site and this species may pass through habitats within the survey area.

3.48 A small number of records for stag beetle (*Lucanus cervus)* were also returned from the data search. An area of standing dead wood habitat in the south-east site extent provide potentially suitable overwintering habitat for this species (Target Note 4 on the Habitat Map in Appendix B).

Invasive Non-Native Species (INNS)

3.49 No INNS listed on the Wildlife and Countryside Act (1981) (as amended) were observed during the survey.

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 the Chartered Institute of Ecology and Environmental Management (CIEEM, 2006) and 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, implemented by the Conservation of Habitats and Species Regulations 2017 (as amended) 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 Duncton to Bignor Escarpment SAC, approximately 8km to the north.

4.6 Duncton to Bignor Escarpment is designated for its *Asperulo-Fagetum* beech forests which occur on steep scarp slopes and on more gently-sloping hillsides in mosaic with ash (*Fraxinus excelsior*) woodland, scrub and grassland. The survey site does not provide any functionally linked land for the SAC. Based on the distance from the site, the construction and operational phases are not considered likely to have any significant negative impact on the SAC.

Features of National Importance

4.7 Features of national importance include SSSIs which are designated under the Wildlife and Countryside Act 1981 (as amended).

4.8 South Downs National Park is situated approximately 1.7 km from the site. The site does not contribute to the landscape value of the National Park. Works are considered unlikely to result in any significant negative impacts on the National Park due to the distance from the site.

4.9 It is not considered that any habitats or populations or assemblages of species within the site would meet the criteria for the designation of a SSSI at an appropriate geographic level[2].

Features of Regional Importance

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

Features of District Importance

4.11 The site is small, and the habitats are common and widespread in the district. The site does not support any features that were considered to be of value at this level.

Features of Local Importance

4.12 The site supports features that are common and widespread in the locality in the form of grazed grassland, areas of ruderal vegetation and boundary scrub and scattered trees which have the potential to support widespread breeding birds, foraging bats, great crested newt, reptiles, badger and stag beetle. The site boundaries also form part of the wider ecological network in the locality, providing wildlife corridors for mobile species including bats to move through the landscape.

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

4.13 The stream forming the eastern site boundary of the site is classed as a Habitat of Principal Importance, however only a short length of stream is located within the site boundary with a more extensive network off-site to the north, and west. The on-site stream is of poor quality due to an absence of management; however this habitat does contribute to the wider network of chalk streams on a local scale. Therefore, based on the results of the assessment, the stream is a feature that is considered of value at this level.

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

4.14 The site supports features with potential for use by widespread breeding birds, badger, foraging bats, great crested newt, reptiles and stag beetle. The site is therefore of some value at this level.

Summary

4.15 Overall based on the survey results and the above criteria, habitats are considered to be of importance at a local level. The site provides potentially suitable habitat to support some protected BAP species and groups including widespread breeding birds, great crested newt, reptiles, foraging bats, badger and stag beetle. The stream is designated as a chalk stream which in turn contributes to the wider network of chalk streams in the locality; a Habitat of Principal Importance, on a local scale.

Local Plan Evaluation

4.16 It is considered that the Arun Local Plan 2011-2031 contains nature conservation policies relevant to the site. A summary of the relevant policies is contained in the Legislation section in Appendix C and this should be referred to.

5 CONCLUSIONS AND RECOMMENDATIONS

Conclusions

5.1 The site is in a semi-rural location within the northern extent of Barnham in the Arun District of West Sussex. The site is bounded to the north by a commercial plant nursery with residential properties and associated gardens bounding the site in all other directions. In the wider surrounds, commercial plant nurseries and agricultural fields dominate the landscape together with residential properties.

5.2 The application site extends over approximately 0.4ha comprising horse grazed fields. Bare ground and semi-improved grassland dominated the site. A single stable unit was present together with areas of boundary scrub, tall ruderal vegetation and scattered trees. A stream extended part way along the eastern site boundary.

5.3 Proposals are to construct seven new residential dwellings with associated parking and landscaping however design proposals had not been finalised at the time of the survey. Boundary features, including trees, will be largely retained.

5.4 The site is not subject to any statutory or non-statutory designations. The closest designated site is South Downs National Park, located approximately 1.7km to the north-east. The site does not provide any supporting function for the National Park.

5.5 The short section of stream along the eastern boundary is classed as a chalk river- a Habitat of Principal Importance (a Section 41 priority habitat). This feature is of limited quality due to an absence of long-term management, with more extensive, better examples present in the wider landscape however this feature does contribute to the wider network of chalk streams on a local scale.

5.6 Overall, habitats within the survey site were assessed as being of local importance, having potential for use by widespread breeding birds, foraging bats, great crested newt, reptiles, badger and stag beetle. The site boundaries also form part of the wider ecological network providing wildlife corridors for more mobile species including bats and badgers to move through the landscape. The stream also contributes, to some degree to the wider network of chalk streams present in the wider landscape.

5.7 The boundary stream and adjacent scrub habitat will be retained as part of the scheme and on this basis, this priority habitat does not pose any constraints to the works. Protected species do however pose some constraints to the proposed works.

5.8 A series of bat activity surveys and a reptile presence/absence survey are recommended in order to ascertain presence of these species groups and enable suitable mitigation to be devised.

5.9 It is considered that adopting a precautionary approach to works in regards to breeding birds, great crested newt, stag beetle and badger will be sufficient to fully safeguard these species' groups.

5.10 Details regarding potential further surveys together with potential mitigation measures, to include precautionary working practices and habitat enhancement measures are provided below.

Recommendations

5.11 Recommendations are provided below.

Bats

5.12 Bats receive protection under the Conservation of Species and Habitats Directive 2017 (as amended), which affords protection to bats and the places they use for shelter and breeding.

Bat Activity Transect Surveys

5.13 The site has potential to support foraging bats throughout central areas of grassland together with the boundary habitats. A series of bat activity transect surveys are therefore required in order to ascertain level of use by bats during the active season and enable appropriate mitigation measures to be compiled for the site. These must be undertaken in suitable weather, within the active period for bats, taken to extend between May and October inclusive. Updated bat guidelines (Collins 2023) were in the process of being released at the time of compiling this document and the specific methodology should adhere to current guidance at the time of undertaking the activity surveys. It is understood that the updated guidance recommends three night-time bat walkover surveys are carried out for sites with moderate suitability for foraging bats. These should be spaced out between April/May, June-August and September/October. Concurrent static bat detector surveys will also be required, undertaken monthly between April and October for a minimum of five consecutive nights for each monitoring block. The specific methodology should however be checked prior to carrying out the surveys to ensure it is undertaken in accordance with the current best practice guidance.

5.14 The results of the targeted bat surveys will serve to ascertain the level of use by bats, and the results can then be used to devise appropriate mitigation measures for the site and aid the design of any subsequent lighting scheme.

Reptiles

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

5.16 The site margins provide a habitat mosaic and vegetation structure suitable for reptiles. A reptile survey is therefore recommended in order to ascertain presence/likely absence and to enable suitable mitigation to be devised. The survey will entail a minimum of seven visits, following current guidelines (Froglife, 1999; English Nature, 2004), to determine the presence or likely absence and distribution of reptiles within the site. Reptile surveys must 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. The results of the survey will then be used to inform mitigation proposals for this species group. If reptiles are found, it may be necessary to move individuals to an off-site receptor area as part of a formal translocation. This will involve trapping and capturing reptiles from the development area and moving them to a pre-determined receptor area.

Great Crested Newt

5.17 Great crested newt receives protection under the Conservation of Species and Habitats Directive 2017 (as amended), which affords protection to individuals and the places they use for shelter and breeding.

5.18 Although there is a reduced risk of this species utilising on-site habitats based on the current assessment, as potential for this species to pass through the site on occasion cannot be completely scoped out, in order to fully safeguard great crested newts, adopting a series of precautionary working measures is considered to be sufficient and proportionate in this situation to ensure that the favourable conservation status of great crested newts is not impacted as a result of the works. These measures should include the following:

Site Preparation

- All areas of grassland, scrub and ruderal vegetation within the working area will be managed at ground level prior to the start of any demolition/ground clearance works commencing in order to ensure the site remains sub-optimal for this species;
- Prior to works commencing, the top soil/surface material must be removed under an ecological watching brief using an excavator or similar. The ecologist will check the top soil for sheltering newts and any other debris that is exposed by the excavator. This must be undertaken in the active period for newts with ground clearance works possible between **March** and **October** inclusive;

- if any newts are found during the site preparation works then all activities must cease immediately and the working methodology updated accordingly. This may include the need to obtain a great crested newt licence; and
- any other species found during the site preparation phase will be removed from the site and relocated to suitable cover within the wider site.

Site Storage

- All materials and machinery will be stored on existing areas of hardstanding/bare ground. Migration by great crested newts is considered highly unlikely through the southern site extent which is already subject to regular disturbance and is relatively isolated by hardstanding and buildings to the south;
- no barrier effects are predicted and any great crested newts can travel freely through the area should they choose to do so;
- in addition, all stored materials will be raised off the ground on pallets or skids to further remove any refuge potential for great crested newts; and
- aggregates such as gravel and sand must be delivered in bulk bags and stored on pallets rather than piled on site to create potentially suitable 'refuge piles'.

Construction/Installation Phase

- Any trenches etc. must be back-filled overnight, if this isn't possible then earth ramps/suitable man-made ramps must be left in the trench(es) to allow animals, including great crested newts, to easily climb out;
- the contractor must inspect any excavations each morning to check that great crested newts are not present;
- if any newts are found during the construction phase, then all activities must cease immediately and the project ecologist contacted for advice. An appropriate working methodology will need to be devised and this may include the need to obtain a great crested newt licence to enable activities to continue; and
- any other species found during the site preparation phase will be removed from the site and relocated to suitable cover within the wider site.

Breeding Birds

5.19 Areas of scrub and trees provide suitable nesting habitat for a range of bird species. All nesting birds are protected under the Wildlife and Countryside Act 1981 (as amended).

5.20 It is understood all trees will be retained however, in order to avoid any potential impact on breeding birds, the clearance of any scrub should be undertaken outside the main bird nesting season which runs from March to August inclusive[3], with clearance works possible between September and February.

5.21 Where this is not possible then an ecologist would need to check the vegetation for active nests and signs of bird breeding activity. 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.

5.22 The building should also be demolished outside the main bird nesting season with works possible between September and February inclusive. Where this is not possible then an ecologist would need to check the building for active nests and signs of bird breeding activity. In the event that any nests are 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.

Badger

5.23 Badgers receive protection under the Protection of Badgers Act 1992. The potential for badgers to pass into the site must be taken into account during works. Materials must be stored safely at night with lids securely fitted. If trenches are required, these must be closed over night or ramps installed to enable badgers, and other mammals, to escape. The ramps must be substantial enough for badgers to use therefore these should comprise planks of wood or similar.

Stag Beetle

5.24 Stag beetle is protected under the Wildlife and Countryside Act 1981 (as amended).

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[3] 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.

5.25 The area of standing dead wood is likely to require removal to facilitate the works. This feature should be removed in summer months; between May and September. An ecologist must guide works to excavate the dead wood habitat and immediate underlying soil. The feature should then be relocated to suitable retained habitat along the eastern site boundary. Any stag beetle larvae found should be relocated to the translocated dead wood habitat at a similar depth to that found. The soil and dead wood should be carefully placed back around the larvae.

Construction Environmental Management Plan

5.26 In order to mitigate for any indirect impacts on the adjacent chalk stream, it is recommended that a construction environmental management plan is conditioned as part of the associated planning permission for the proposals. This should address any potential increase in dust or run-off as a result of the construction and operational phases of works and include best practise measures which can be applied at the site.

Habitat Retention

5.27 All trees scheduled to be retained should be protected in accordance with British Standards (BS 2012) 5837:2012 Trees in Relation to Design, Demolition and Construction.

5.28 Suitable fencing should be installed around the perimeter of the working area to ensure materials and machinery do not encroach into adjacent retained habitats including boundary features.

Habitat Enhancement

5.29 New development offers the opportunity for biodiversity net gain in accordance with national and local planning policy. Recommendations for ecological enhancement are detailed below.

Post Development Landscaping

5.30 Post development landscaping should be carefully designed with biodiversity in mind in order to ensure that there is a net gain in biodiversity post works.

5.31 Wildlife planting should be integral to the soft landscape plans and should include native species and/or species of recognised wildlife value[4]. The use of nectar-rich and berry producing plants will attract a wider range of insects, birds and mammals. Species should be carefully selected to ensure they are suitable for the area. Some species of known wildlife value are listed in Appendix E.

5.32 Good horticultural practice should be utilised, including the use of peat-free composts, mulches and soil conditioners, native plants with local provenance and avoidance of the use of invasive species listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended).

5.33 Boundary scrub should be retained and enhanced where possible. Retained scrub should be enhanced through planting of additional native shrub species to encourage a more diverse species composition. The stream should also be subject to on-going management to include thinning of overhanging vegetation to promote vegetation growth within the stream and reduce the accumulation of leaf litter.

5.34 Additional native tree and hedgerow should also be incorporated into the scheme, either delineating new plot boundaries or enhancing the existing boundaries. New hedgerows and trees will serve to create additional linear features through the site and augment the connectivity between the site and the wider landscape for more mobile species including hedgehog, bats and badger. New hedgerows should comprise at least five species, of which 30% should be native.

5.35 Any newly created garden areas should be re-seeded with an appropriate grassland seed mix for the site. There are a range of seed mixes on the market however an amenity seed mix such as Emorsgate EG21: Fine Lawn Grass Mixture may be most suited to the proposed use or alternatively a mixture that supports a percentage of wildflowers such as Emorsgate EM1: Basic General-Purpose Meadow Mixture could be used. A woodland or hedgerow seed mix may also be suited to grassland adjacent to areas of retained scrub.

5.36 Dead wood features such as log piles and stag beetle loggeries should be incorporated within the retained eastern site boundary to augment the value of this area for invertebrates. Specific locations and numbers of log piles should be ascertained once the results of the reptile survey are known.

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[4] For example, The Royal Horticultural Society (RHS) Perfect for Pollinators Scheme https://www.rhs.org.uk/science/conservation-biodiversity/wildlife/encourage-wildlife-to-your-garden/plants-for-pollinators and the joint RHS/Wildlife Trust's Gardening with Wildlife in Mind Database http://www.joyofplants.com/wildlife/home.php

Bats and Lighting

5.37 This section provides outline advice regarding new external lighting provision. More detailed guidance can be provided once the results of the bat surveys are known.

5.38 Different species of bat have been found to react differently to night-time lighting however research has found that generally, all species of bats are sensitive to artificial lighting and that excessive lighting can delay bats from emerging, thus shortening the time available for foraging, as well as causing individuals to move away from suitable foraging grounds or roost sites, to alternative dark areas (Jones, 2000). Bats can also become isolated from their foraging grounds if the linear features they use for commuting are suddenly illuminated, creating a light barrier (Fure, 2006).

5.39 Currently the application site receives limited light spill. Any new lighting associated with the development should seek to minimise light spill in order to avoid any additional levels of illumination post development. This can be achieved by following accepted best practice (Institute of Ecology and Environmental Management 2006, Institute of Lighting Engineers 2009):

- The level of artificial lighting including flood lighting should be kept to a minimum, with light spill limited on all boundary features and newly created linear features;
- recent LED technology should be utilised where possible. LED lights do not emit UV radiation, towards which insects are attracted, drawing them away from bat foraging areas in the surrounding landscape. All lights should be directed at a low angle with minimal light spillage wherever possible; and
- the site boundaries (and any newly created boundaries) should be kept dark at bat emergence (0-1 hour after sunset) and during peak bat activity periods (e.g., 1.5 hours after sunset and 1.5 hours before sunrise). Therefore, where possible, if lighting is required this should be installed with the light directed down onto the driveway/garden/access areas wherever possible and lighting should be controlled through the use of PIR and/or timers.

Bird Boxes

5.40 Additional bird nesting provision could be incorporated into new design proposals. These could comprise external bird boxes installed on the new buildings. There are a range of bird boxes on the market and various types are suitable for the site. Models selected should be suited for use by a range of garden birds. These should be located at a height of at least 3m or directly under the eaves if located on the buildings, ideally with a south-east or south-west facing aspect. A sparrow terrace could also be installed directly under the eaves of one of the new buildings.

5.41 Replacement barn swallow habitat will be difficult to incorporate into the new scheme however if any open garage or porch structures are being proposed as part of the scheme, barn swallow nest bowls could potentially be incorporated into these features. The potential for these to be used along with specific placement of swallow nest bowls should be discussed with the project ecologist as the scheme develops to ensure the correct siting, if these features can be installed, in order to maximise uptake of the nests by this species.

Bat Boxes

5.42 Bat roosting provision should be incorporated into the scheme in order to enhance the site for bats in the long-term. More advice on the specification and number of bat boxes should be provided once the bat activity surveys have been completed.

Other

5.43 It is recommended that an update habitat survey is undertaken if more than 18 months have elapsed between the survey and the point at which any development decisions have been made at the site.

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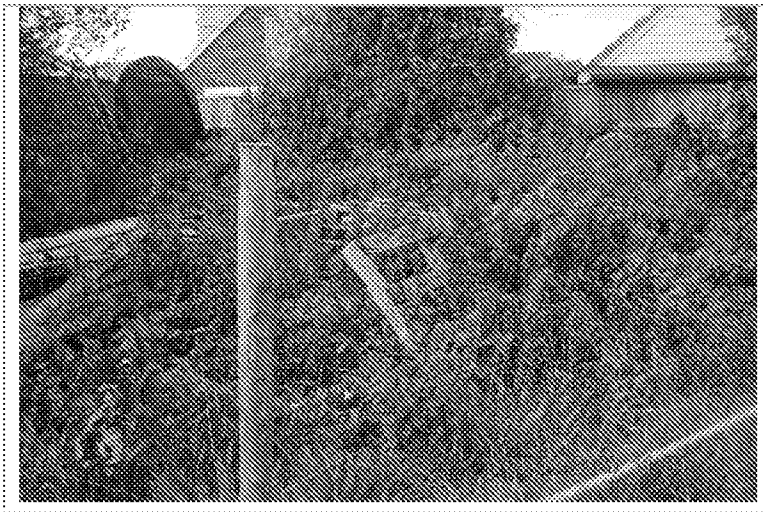
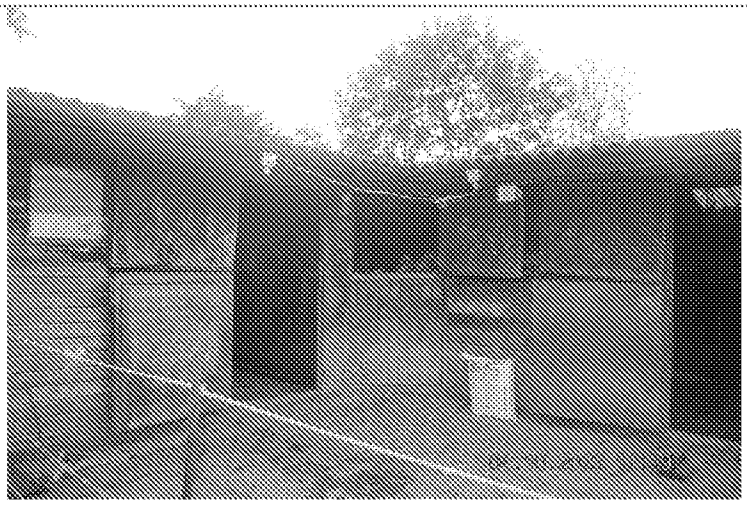
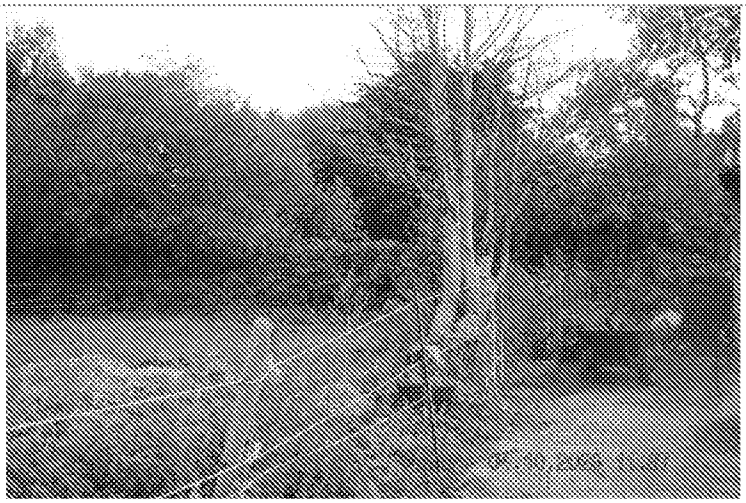
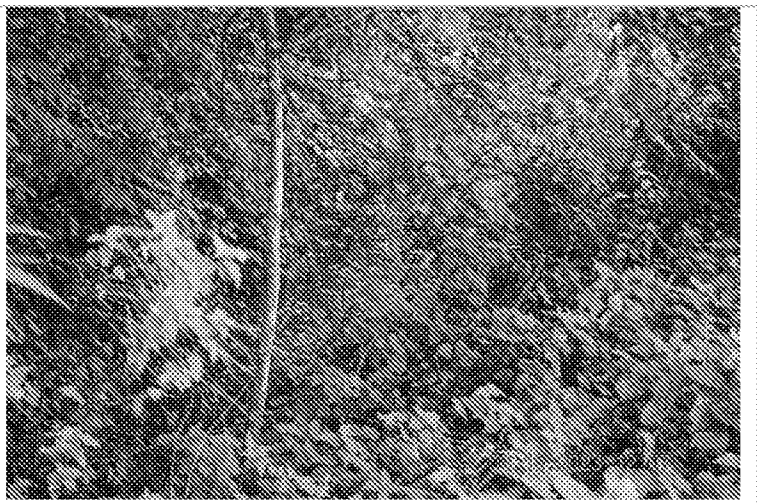
Appendix A
Target Notes and Photographs

Target Note (TN)	Feature	Photograph of Feature
1, 3	**Photograph 1:** A view from the southern site extent looking towards the western site boundary. The site is dominated by horse grazed fields. Areas of scrub along the western boundary provide foraging potential for bats and nesting opportunities for birds.	
2	**Photograph 2:** Looking along the southern boundary towards an area of ruderal vegetation with potential to support reptiles.	
1	**Photograph 3:** The stable unit in the southern site extent. A disused barn swallow nest was present above a light. The building did not provide any potentially suitable bat roosting features.	

Target Note (TN)	Feature	Photograph of Feature
1, 2, 4	**Photograph 4:** A dead tree adjacent to the stable unit. The feature provides opportunities for use by invertebrates including stag beetle. Ruderal and scrub edge habitat provide potential for reptiles with boundary scrub providing opportunities for nesting birds and foraging bats.	
N/A	**Photograph 5:** A view towards the north of the site.	
N/A	**Photograph 6:** A view of the stream along the north-east boundary of the site.	

Appendix B
Habitat Survey Map

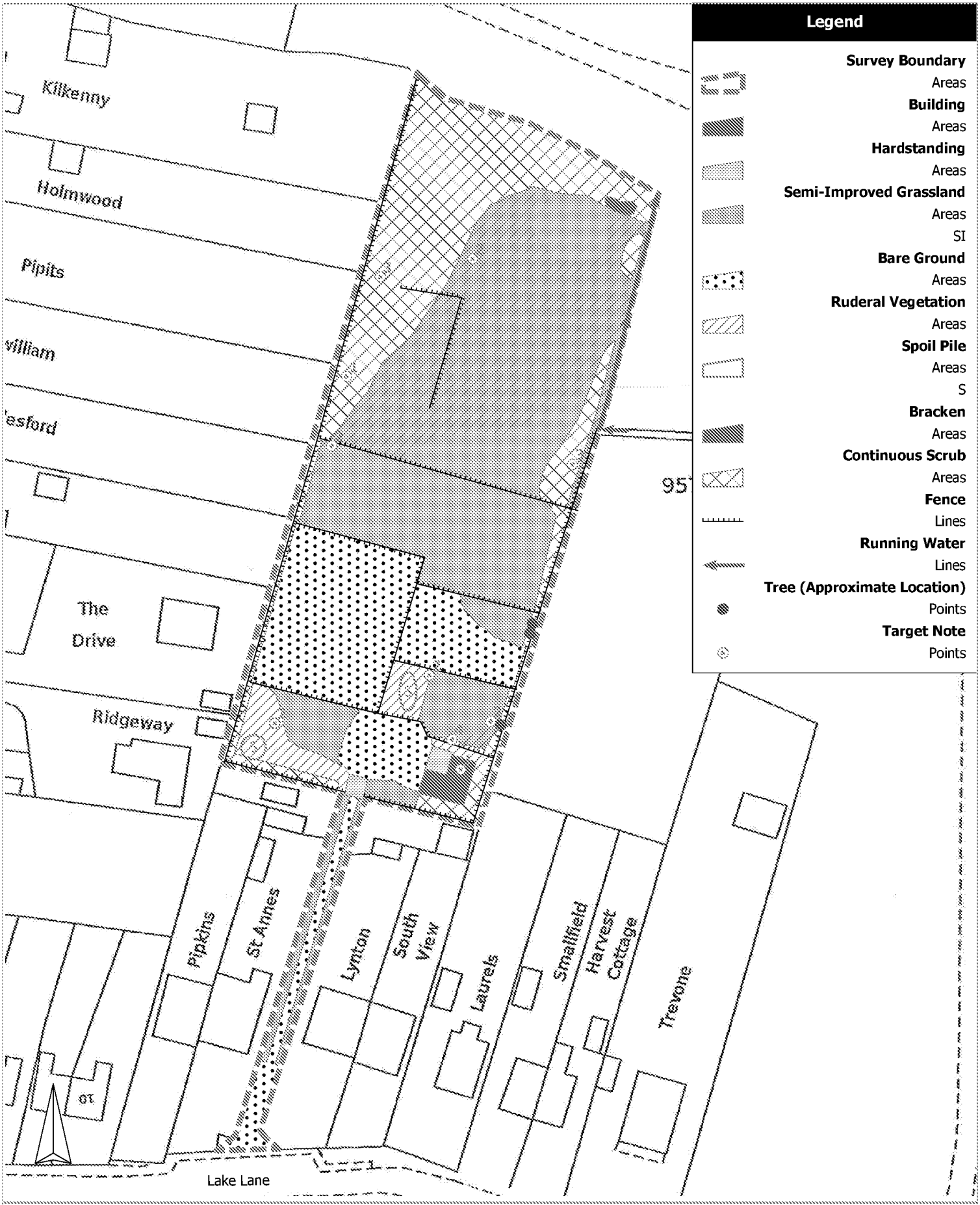


Figure 1: Land Adjacent to Lake Lane

Drawn by: CT
Date: 22/11/2023
Scale: 1:1250

CT Ecology

Appendix C
Legislation

LEGISLATIVE FRAMEWORK

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 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) is to conserve plants and animals which are considered to be rare across Europe.

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
- Wild Mammals (Protection) Act 1996

Badger

[redacted]

[redacted]

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
  (ii) to hibernate or migrate.

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[1] 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

[2] 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.

- 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 Protected Species Mitigation Licence (PSML) 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. 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 Dormouse

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 Protected Species Mitigation Licence (PSML) 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
- 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*).

<u>Water Vole</u>

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.

Otter

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 Protected Species Mitigation Licence (PSML) 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.

Red Squirrel

The red squirrel (*Sciurus vulgaris*) is fully protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). This makes it an offence to:

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

White Clawed Crayfish

The white clawed crayfish (*Austropotamobius pallipes*) receives partial protection under Schedule 5 of the Wildlife & Countryside Act 1981 (as amended). This species is protected under Sections 9(1) and 9(5), making it an offence to:

- intentionally take/capture white-clawed crayfish; and
- sell, offer or expose for sale, have in possession or transport for the purpose of sale, any live or dead white clawed crayfish or part of this species.

A conservation licence for the capture and translocation of crayfish may be issued for the purpose of development activities if it can be demonstrated that the activity has been carefully planned and this species considered. The activity must also demonstrate that it contributes to the conservation of the population.

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 Protected Species Mitigation Licence (PSML) 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 (*Fallopia 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 of habitats and Species Regulations 2017 (as amended) an offshore SPA's are afforded protection under The Offshore Marine Conservation (Natural Habitats, &c.) Regulations 2007 (as amended).
- Special Areas of Conservation (SACs): These areas are designated 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 (2021) replaces the former NPPF and PPS9 documents and emphasises the need for sustainable development. The Framework specifies the need for protection of designated sites and priority habitats and priority species. An emphasis is also made for the need for ecological networks through preservation, restoration and re-creation. The protection and recovery of priority species is also included as a requirement of planning policy. 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.

Regional and Local Planning Policy

The Arun Local Plan 2011-2031 (July 2018) contains the following Nature Conservation Policies that are considered relevant to the site.

Arun Local Plan 2011-2031

- Policy ENV SP1 Natural Environment
- Policy ENV DM3 Biodiversity Opportunity Areas
- Policy ENV DM4 Protection of trees

- Policy ENV DM5 Development and biodiversity

Regional and Local BAPs

Many local authorities in the UK have produced a local Biodiversity Action Plan (LBAP) at the County or District level. The Sussex Biodiversity Action Plan is based on the UK list of Species and Habitats of Principal Importance and contains 1,149 species and 65 habitats.

Appendix D
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.

Key to qualifiers: c=clumped, e=edge only, g=garden origin, p=planted, y = young, s=seedling or sucker, t=tree, h=hedge, w=water. L = locally i.e. LD=locally dominant.

COMMON NAME	SCIENTIFIC NAME	ABUNDANCE	QUALIFIER
Blackthorn	*Prunus spinosa*	O	LD
Bracken	*Pteridium aquilinum*	R	C
Bramble	*Rubus fruticosus agg.*	A	LD
Bristly oxtongue	*Helminthotheca echioides*	O	
Broad-leaved dock	*Rumex obtusifolius*	F	LA
Brome	*Bromus sp.*	O	
Capillary thread-moss	*Bryum capillare*	O	
Chamomile	*Chamaemelum nobile*	R	
Clustered dock	*Rumex conglomeratus*	O	LF
Common fleabane	*Pulicaria dysenterica*	A	LD
Common knapweed	*Centaurea nigra*	O	
Common nettle	*Urtica dioica*	F	LA
Common ragwort	*Senecio jacobaea*	O	
Common sorrel	*Rumex acetosa*	R	
Creeping buttercup	*Ranunculus repens*	F	
Creeping cinquefoil	*Potentilla reptans*	O	
Creeping thistle	*Cirsium arvense*	F	LA
Curled dock	*Rumex crispus*	F	LA

Daisy	*Bellis perennis*	F	
Dandelion	*Taraxacum sp.*	F	
Dock	*Rumex sp.*	F	
Dog-rose	*Rosa canina*	O	LF
Elder	*Sambucus nigra*	O	
Fescues	*Festuca spp.*	A	LA
Fine-leaved water dropwort	*Oenanthe aquatica*	R	W
Germander speedwell	*Veronica chamaedrys*	O	
Greater plantain	*Plantago major*	O	
Hawthorn	*Crataegus monogyna*	O	
Hedge bedstraw	*Galium mollugo*	R	
Hoary willowherb	*Epilobium parviflorum*	O	
Hogweed	*Heracleum sphondylium*	O	
Knotgrass	*Polygonum aviculare*	O	
Mayweed	*Matricaria sp.*	R	
Meadow buttercup	*Ranunculus acris*	F	
Meadow foxtail	*Alopecurus pratensis*	O	C
Meadow thistle	*Cirsium dissectum*	F	
Perennial rye-grass	*Lolium perenne*	A	
Ribwort plantain	*Plantago lanceolata*	O	LF
Rosebay willowherb	*Chamerion angustifolium*	O	
Sheep's-fescue	*Festuca ovina*	A	
Spear thistle	*Cirsium vulgare*	F	
Speedwell	*Veronica sp.*	O	
Thistle	*Cirsium sp.*	F	

White clover	*Trifolium repens*	F	
Willow	*Salix sp.*	O	
Willowherbs	*Epilobium sp.*	F	
Yarrow	*Achillea millefolium*	O	
Yorkshire-fog	*Holcus lanatus*	D	
Zigzag clover	*Trifolium medium*	O	

Appendix E
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.

Butterfly bush (*Buddleja* spp.), (*B. alternifolia*), (*B. globosa*) NN

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

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

Nasturtium (*Tropaeolum majus*) 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