

Angus Energy Ltd.

Preliminary Ecological Appraisal

Lower Stumble Exploration Site, Balcombe

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RSK



RSK GENERAL NOTES

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This report has been prepared by a professional ecologist and reviewed by a principal ecologist. Both are membered of the Chartered Institute of Ecology and Environmental Management (CIEEM). Names have been omitted from this report for confidentiality reasons but can be provided on request.

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Where field investigations have been carried out, these have been restricted to a level of detail required to achieve the stated objectives of the work.

This work has been undertaken in accordance with the quality management system of RSK Environment Ltd.

EXECUTIVE SUMMARY

1. This report presents the findings of a preliminary ecological appraisal (PEA) at the Lower Stumble Exploration Site near Balcombe in West Sussex.
2. The survey area comprises hard-standing, ruderal vegetation, scrub, trees, a hedgerow and woodland (both plantation and ancient). The site was previously surveyed by RSK in 2017.
3. Works will be restricted to an area of hard-standing and an existing access track and adjacent habitat will not be directly affected.
4. Although there are areas of ancient woodland adjacent to the survey area, habitats and plant species within the works footprint were common and widespread and are replaceable.
5. The only protected species which may be affected by the works are reptiles, nesting birds and foraging and commuting bats. Further actions and mitigation for these species is provided.
6. There will be no direct effects on nearby designated and non-designated sites, but indirect effects (such as run-off, light spill and effects to air quality) need to be considered and previous mitigation plans updated.
7. Ashdown Forest Special Area of Conservation (SAC) is within 10 km of the site and a habitat regulations assessment (HRA) screening assessment is accompanying this report to help the competent authority decide whether an appropriate assessment is needed.

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1 INTRODUCTION

1.1 Purpose of this Report

This report presents the results of a preliminary ecology appraisal (PEA) carried out as part of a new planning application for the existing Lower Stumble Exploration Site near Balcombe in West Sussex (*Figure 1*). The survey was undertaken to assess any changes in the ecological value of the site since a previous PEA was carried out by RSK in 2017 and identify its suitability for protected animal species. This will allow identification of ecological constraints that may be associated with the resumption of well testing at the site after worked ceased in autumn 2018.

Planning permission was originally granted in 2014 for flow testing and monitoring of a borehole previously drilled earlier in 2014, this permission expired in May 2017. A new planning application was submitted to West Sussex County Council to extend the life of the site and the previous PEA report (RSK, 2018) was used to support the application. Since this time Angus Energy have taken ownership of the site and wish apply for new planning permission to undertake exploration works on this site.

1.2 Ecological Context

The site lies to the south of Balcombe; a village in West Sussex. It comprises an area of hard-standing (previously used as a drilling platform) with an associated access road (hereon referred to as the “works footprint”). The area immediately surrounding the works footprint comprises planted broadleaved and coniferous trees, scrub, grassland and hedgerows and was surveyed as part of this assessment. There are patches of ancient woodland (which form part of Lower Stumble Wood and Lower Beanham Wood) to the north and south of the survey area, a railway line to the east, and London Road the B0236 to the west.

Although the works footprint solely comprises hard-standing with some encroaching ruderal vegetation, it is surrounded by habitat which is suitable for a number of protected species including bats, birds and Badgers.

2 METHODS

2.1 General

The preliminary ecological appraisal (PEA) was undertaken in line with guidance from the Chartered Institute of Ecology and Environmental Management (2017), which indicates that A PEA normally involves:

- a desk study (gathering information from national websites; local record centres, councils, local wildlife groups, published material, previous reports *etc.*) here called a background data search (BDS); and
- a field survey having a scope that includes some form of habitat mapping, assessment of the possible presence of protected or priority species and the likely importance of habitat features, and notes including mapping of any incidental sightings of invasive non-native plant species and protected or priority mammal species.

The PEA results provide an ecological description of the site and information about species that may occur there. It either allows evaluation of the ecological importance of the site, or - if insufficient to do so - indicates what further surveys are needed.

The phase 1 habitat survey (including habitat assessment for protected species) was carried out by an RSK ecologist on 29 August in suitable weather conditions. This surveyor is experienced in surveys of this type and is a member of Chartered Institute of Ecology and Environmental Management (CIEEM). She holds Natural England survey licences for Great Crested Newt and Hazel Dormice.

2.2 Background Data Search

A search was made in August 2019 for reference materials relating to the ecology of the site, and a list of sources is given in *Table 1*.

Table 1: Data sources

Information Obtained	Available From
Protected and Noteworthy species-records	Sussex Biodiversity Records Centre
Designated site locations and citations	Natural England website
Designated site locations and citations	Joint Nature Conservation Committee (JNCC) website
Designated site locations and citations	Sussex Biodiversity Records Centre
Designations and legal protection of noteworthy species	Joint Nature Conservation Committee (JNCC) website
Details of species and habitats listed on the Sussex Local Biodiversity Action Plan	Local BAP website http://sussexlnp.org.uk/

A search was made for information on statutory designated sites (often internationally and nationally important sites for ecology) and non-statutory designated sites (often important in a local context) within 1 km of the site boundary. A search was also made for records of noteworthy species within 1 km of the site boundary. Species included in the search parameters were:

- European protected species (listed on Schedules 2 and 5 of The Conservation of Habitats and Species Regulations 2017)
- nationally protected species under Schedules 1, 5 and 8 of The Wildlife & Countryside Act 1981 and The Protection of Badgers Act 1992
- species listed as critically endangered, endangered or vulnerable on the IUCN 2001 *Red List*
- species listed on the RSPB *Birds of Conservation Concern 4* as red or amber
- nationally rare or nationally scarce species
- notable invertebrates
- species of principal importance under The Natural Environment and Rural Communities (NERC) Act (2006) and priority species under any relevant local biodiversity action plan.

2.3 Phase 1 Habitat Survey

The habitat survey was based on the phase 1 habitat survey approach (Joint Nature Conservation Committee 2010) as extended for use in environmental impact assessment (Institute of Environmental Assessment 1995). This involves the following elements:

- Habitat mapping using a set of standard colour codes to indicate habitat types on a phase 1 habitat map (*Figure 2*).
- Description of features of possible ecological or nature conservation interest in notes relating to numbered locations on the phase 1 habitat map, called 'target notes'. These are provided in *Appendix A*.

Phase 1 habitat survey methods are described in Joint Nature Conservation Committee (JNCC 2010). Limits to the achievable reliability of the method are discussed in Cherrill & McClean (1999). There are no firm guidelines to specify what extended phase 1 habitat survey involves, but Institute of Environmental Assessment (1995) suggests that it simply involves more extensive and detailed target notes.

Plant nomenclature in this report follows Stace (2010) for native and naturalised species of vascular plant. Plant names in the text are given with scientific names first, followed by the English name in brackets.

2.4 Non-Native Invasive Plant Species

Phase 1 habitat survey does not involve exhaustive surveying for any individual plant species. However, if invasive plant species were seen during the normal course of the survey e.g. *Fallopia japonica* (Japanese Knotweed), *Heracleum mantegazzianum*

(Giant Hogweed), *Impatiens glandulifera* (Himalayan Balsam), they were noted and reported here.

2.5 Habitat Assessment for Protected Species

2.5.1 General

The suitability of the site for the protected animals that are likely to occur in the area was assessed. Taking into account the location and habitats at the site, assessment was carried out for:

- Badgers (*Meles meles*);
- bats;
- birds;
- Great Crested Newts (*Triturus cristatus*) (and other amphibians);
- Reptiles; and
- Hazel Dormice (*Muscardinus avellanarius*)

Further details of the assessment methods are given below.

2.5.2 Badger

An initial assessment was carried out to identify areas that might be used by Badgers for commuting, foraging and sett-building on the site and within 30 m of the site boundary (where access was possible). The site was systematically searched for tracks, latrines and sett entrances.

2.5.3 Bats

Habitats were assessed for their suitability for foraging and commuting bats. Areas of particular interest vary between species, but generally include sheltered areas and habitats with good numbers of insects, such as woodland, scrub, hedges, watercourses, ponds, lakes and species-rich or rough grassland.

2.5.4 Birds

Habitats on the site were assessed for their suitability for foraging and nesting birds. Birds nest in a wide variety of habitats including scrub, woodland, hedges and trees, as well as on buildings or open ground.

2.5.5 Great Crested Newt

Although standing water is essential for their breeding, Great Crested Newts are terrestrial for most of the year, and have been recorded up to 500 m from their breeding ponds. Therefore, the suitability of the site both for terrestrial and breeding Great Crested Newts was assessed. Suitable breeding ponds are well-vegetated, relatively clean and unpolluted, largely free of fish and wildfowl, and likely to retain water throughout most (but not necessarily all) summers. Highly suitable terrestrial habitats include woodland,

scrub and tussocky grassland, though Great Crested Newts can be found in a broad range of sub-optimal habitats as well. Habitat suitability for other amphibians was also assessed.

2.5.6 Reptiles

The site was assessed for reptiles, with particular attention to features that provide suitable basking areas (e.g. south-facing slopes), hibernation sites (e.g. banks, walls, piles of rotting vegetation) and opportunities for foraging (e.g. rough grassland and scrub).

The site was assessed for its suitability for each of the four common reptile species. Specific habitat requirements differ between species. Common Lizards (*Zootoca vivipara*) use a variety of habitats from woodland glades to walls and pastures, although one of their favoured habitats is rough grassland. Slow-worms (*Anguis fragilis*) use similar habitats to Common Lizards, and are often found in rank grassland, gardens and derelict land. Grass Snakes (*Natrix natrix*) have broadly similar requirements to Common Lizards with a greater reliance on ponds and wetlands, where they prey on Common Frogs (*Rana temporaria*). Adders (*Vipera berus*) use a range of fairly open habitats with some cover but are most often found in dry heath (Beebee & Griffiths 2000).

2.5.7 Hazel Dormice

The habitats were assessed for their general suitability for Hazel Dormice. Dormice generally use areas of dense woody vegetation cover and are more likely to be found where there is a wide diversity of woody species contributing to three-dimensional habitat complexity, a number of food sources, plants suitable for nest-building material, and good connectivity to other areas of suitable habitat.

2.6 Preliminary Roost Assessments for Bats

Roosting – trees

An initial inspection was undertaken of all trees found during the PEA for their potential for roosting bats. This involved the inspection of trees from ground-level using binoculars and a torch to identify any potential roosting features (PRFs), which bats could use for roosting and for any evidence of bats such as scratch marks, oil stains and droppings around or below the PRFs.

PRFs that may be used by bats include (amongst others):

- holes (e.g. woodpecker holes);
- cracks and splits (in trunks and limbs);
- cavities (e.g. formed by occluded stems or limbs);
- peeling bark;
- crevices formed by epicormic growth; and
- deadwood.

Trees and PRFs were then categorised in accordance with *Table 2* below.

Table 2. Categorisation of roosting habitats in trees (Collins 2016).

Category	Description
Negligible suitability	Negligible habitat features on site likely to be used by roosting bats.
Low suitability	A tree of sufficient size and age to contain PRFs but with none seen from the ground or features seen with only very limited roosting potential.
Moderate suitability	A tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely for a roost of high conservation status (with respect to roost type only – the assessments in this table are made irrespective of species conservation status, which is established after presence is confirmed).
High suitability	A tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat.
Confirmed roost	Bats or evidence of bats recorded during the initial inspection surveys or during dusk/dawn surveys. A confirmed record (supplied by records centre/local bat group) would also apply.

2.7 Validity of Data

Data collected for submissions to the local planning authority are usually valid up to two years following the field survey. Should construction works not have commenced within two years, then a repeated preliminary ecological appraisal and preliminary roost assessment may be needed.

3 RESULTS

3.1 Background Data Search

3.1.1 Biodiversity Action Plans

Habitats on the site qualify as the priority habitat type 'Hedgerows' under Section 41 of The Natural Environment and Rural Communities (NERC) Act 2006.

Sussex defines biodiversity opportunity area (BOA) to deliver biodiversity action plan (BAP) targets at a landscape scale. There are currently 75 BOA sites in Sussex; the site boundary is not within a BOA.

3.1.2 Designated Sites

Statutory Sites

There are three statutory designated sites within 2 km of the site boundary, comprising two local nature reserves (LNRs) and one area of outstanding natural beauty (AONB). These sites are listed in *Table 3* in order of proximity to the site; short descriptions are given for the sites.

Table 3: Statutory sites within 2 km of the site boundary

Site Name	Designation	Approximate Distance (m)
High Weald	AONB	0
The High Weald AONB covers over 145,000 hectares and is designated for its landscape interest. Habitats of note in the area include ancient woodland, open heaths and steep sided streams. The site is within the High Weald AONB.		
Rowhill Copse	LNR	685
Rowhill Copse LNR is predominately mixed deciduous woodland that is dominated by <i>Castanea sativa</i> (Sweet Chestnut) and <i>Corylus avellana</i> (Hazel). Other habitats in the LNR include heathland, meadows, bog, ponds and streams.		
Ardingly Reservoir	LNR	1,090
Ardingly Reservoir LNR comprises deciduous woodland, <i>Corylus avellana</i> (Hazel) coppice, hay meadows and wetlands. There are also sandstone outcrops that support a rare community of ferns, mosses, liverworts and lichens. The LNR is important for birds; species include Barn Owl, Great Crested Grebe, Kingfisher and Osprey. Dormouse, Glow-worm and various bat species have also been recorded on site.		

SSSI Impact Risk Zones

There are several sites of special scientific interest (SSSIs) in the wider area, including Wakehurst and Chiddingly Woods SSSI and Cow Wood and Harry's Wood SSSI. The site intersects SSSI impact risk zones (IRZs) for these sites. The proposed works are in connection with exploration for and appraisal of oil and gas.

Non-statutory Sites

There are two non-statutory designated sites within 1 km of the site boundary, both are local wildlife sites (LWSs). These sites are listed in *Table 4* in order of proximity to the site; short descriptions are given for the sites.

Table 4: Non-statutory sites within 1 km of the site boundary

Site Name	Designation	Approximate Distance (m)
Rowhill and Station Pastures	LWS	685
Rowhill and Station Pastures LWS comprises two unimproved pastures separated by a wooded stream valley. The pastures are steep and have areas of scrub and a damp flush. The grassland is dominated by <i>Agrostis capillaris</i> (Common Bent), <i>Anthoxanthum odoratum</i> (Sweet Vernal-grass), <i>Centaurea nigra</i> (Common Knapweed), <i>Cynosurus cristatus</i> (Crested Dog's-tail), <i>Festuca rubra</i> (Red Fescue) and <i>Holcus lanatus</i> (Yorkshire-fog). Notable species include <i>Cirsium dissectum</i> (Meadow Thistle), <i>Lotus tenuis</i> (Slender Bird's-foot-trefoil) and <i>Verbascum nigrum</i> (Dark Mullein). The site is important for invertebrates, particularly butterflies. Species include Purple Hairstreak and White Admiral.		
Balcombe Marsh	LWS	835
Balcombe Marsh LWS is a small calcareous fen meadow that has a rich herb flora. Species of note include <i>Anagallis tenella</i> (Bog Pimpernel), <i>Carex pulicaris</i> (Flea Sedge), <i>Epipactis palustris</i> (Marsh Helleborine), <i>Gymnadenia conopsea</i> (Chalk Fragrant-orchid), <i>Hydrocotyle vulgaris</i> (Marsh Pennywort) and <i>Valeriana dioica</i> (Marsh Valerian).		

Other Notable Sites

There are large areas of ancient woodland within 2 km of the site centre point. The closest areas of ancient woodland to the site are Lower Stumble Wood (which borders the survey area to the north) and Lower Beanham Wood (which borders the survey area to the south).

3.1.3 Protected and Noteworthy Species

At least 86 noteworthy species are recorded from places within 1 km of the site boundary. Of these, 5 are amphibians, 56 are birds, 5 are invertebrates, 12 are plants, at least 5 are mammals and 3 are reptiles. Species that are protected by law under Schedules 2 and 5 of The Conservation of Habitats and Species Regulations 2017, Schedules 2, 5 and 8 of The Wildlife and Countryside Act 1981 or The Protection of Badgers Act 1992 and have been recorded in the search area are listed in the table below (excluding species protected only against collection for sale); a full species list is given in *Appendix 2*.

Table 5: Protected species records within 1 km of the site boundary

Latin Name	Common Name	Designation	Most Recent	No of Records	Within 100m	Within 1km
Amphibians						
<i>Triturus cristatus</i>	Great Crested Newt	EPS(Sch2), WCA5	2010	5		☒
Birds						
<i>Alcedo atthis</i>	Kingfisher	WCA1.1	2016	41		☒
<i>Botaurus stellaris</i>	Bittern	WCA1.1	2003	3		P
<i>Cettia cetti</i>	Cetti's Warbler	WCA1.1	2016	1		P
<i>Chlidonias niger</i>	Black Tern	WCA1.1	2004	4		P
<i>Falco subbuteo</i>	Hobby	WCA1.1	2017	9	P	☒
<i>Loxia curvirostra</i>	Common Crossbill	WCA1.1	2003	6		P
<i>Melanitta nigra</i>	Common Scoter	WCA1.1	2003	1		P
<i>Milvus milvus</i>	Red Kite	WCA1.1	2017	11	P	☒
<i>Pandion haliaetus</i>	Osprey	WCA1.1	2005	5		P
<i>Podiceps auritus</i>	Slavonian Grebe	WCA1.1	1993	1		P
<i>Regulus ignicapilla</i>	Firecrest	WCA1.1	2017	1		P
<i>Tyto alba</i>	Barn Owl	WCA1.1	2013	6	P	P
Mammals						
<i>Chiroptera</i>	Bat sp.	EPS(Sch2)	1991	1		P
<i>Muscardinus avellanarius</i>	Hazel Dormouse	EPS(Sch2), WCA5	2017	5		☒
<i>Pipistrellus</i> sp.	a pipistrelle bat	EPS(Sch2), WCA5	2014	1		☒
<i>Pipistrellus pipistrellus</i>	Common Pipistrelle	EPS(Sch2), WCA5	2016	3		☒
<i>Plecotus auritus</i>	Brown Long-eared Bat	EPS(Sch2), WCA5	1999	4		☒
Plants						
<i>Mentha pulegium</i>	Pennyroyal	WCA8	1991	1		P
Reptiles						
<i>Anguis fragilis</i>	Slow-worm	WCA5	2002	3		☒
<i>Natrix helvetica</i>	Grass Snake	WCA5	2002	4		☒
<i>Vipera berus</i>	Adder	WCA5	1990	2		☒

Note - **P** relates to records with 4 figure or tetrad grid references that could potentially be anywhere within a 1 km or 2 km square.

3.2 Phase 1 Habitat Survey

The habitat types within the survey area (defined as the site boundary on *Figure 1*) include the following:

- plantation woodland (broadleaved and coniferous);
- Scrub (dense and scattered);
- rough grassland;
- hedgerows;
- ruderal; and
- hard standing.

Target notes and species lists are provided in *Appendix 1* and *2* respectively. The habitats are described in more detail below and shown on *Figure 2*.

3.2.1 Plantation woodland

3.2.1.1 Coniferous

To the north east of the drilling platform is an area of recently planted *Picea abies* (Norway Spruce). The trees appear to be the same age and are between 1 and 2 m tall.

3.2.1.2 Broadleaved

South and north-east of the drilling platform are two areas of planted broadleaved woodland. To the south east species include examples of *Quercus robur* (Pedunculate Oak), *Fraxinus excelsior* (Ash) and *Corylus avellana* (Hazel). The undergrowth includes scrub and ruderal species such as *Rubus fruticosus agg.* (Bramble) and clematis.

To the south west of the site species include *Tilia x europaea* (Lime), *Salix sp.* (Willow), *Fraxinus excelsior* (Ash) and *Juglans regia* (Walnut).

3.2.2 Scrub

3.2.2.1 Dense

Between the drilling platform and the coniferous plantation woodland is an area of dense scrub primarily composed of *Rubus fruticosus agg.* (Bramble).

3.2.2.2 Scattered

Scattered scrub has colonised some areas and scrub plants such as bramble can be found in the undergrowth of areas of broadleaved woodland.

3.2.3 Ruderal

Tall ruderal can be found along the fence line encompassing the drilling platform. Species include *Arctium sp.* (Burdock), *Urtica dioica* (Common Nettle), *Heracleum sphondylium* (Common Hogweed) and *Malva sylvestris* (Mallow).

3.2.4 Hedgerows

There is a hedgerow along the western edge of the survey area, along the B2036 road. The hedge was closely pruned during 2014 survey, but it was relatively outgrown during the present survey. It was intact and contained species such as *Corylus avellana* (Hazel), *Crataegus monogyna* (Hawthorn), *Fagus sylvatica* (Beech), *Rosa canina* (Dog-rose) and *Rubus fruticosus* agg. (Bramble). Trees were prominent throughout and included *Fraxinus excelsior* (Ash) and *Fagus sylvatica* (Beech).

3.2.5 Rough Grassland

A path of rough grassland with ruderal plants is along the south west boundary of the survey area along London road.

3.2.6 Hardstanding

A large thick plastic sheet covers the majority of the drilling platform on the site, likely to act as a weed suppressing membrane and prevent interference from people, animals or the weather. This sheet was not removed or looked under but it is presumed that nothing is present underneath. Ruderal plants can be found growing along the outer areas of the drilling platform, likely encroaching from ruderal species found outside the fence line. The access track extends from the platform to London road.

3.2.7 Invasive non-native species

No non-native invasive plant species listed under Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) were recorded during the survey.

3.3 Protected Species

3.3.1 Badger

There are no records of Badgers within 1 km of the site. Woodland and dense scrub offer suitable foraging habitat, but no signs of activity or setts were identified during the survey. Although it was not possible to comprehensively search all of the dense scrub, the edges were searched and there were no obvious signs of Badgers entering or leaving.

3.3.2 Bats

Roosting

There are a number of mature trees along the edge of the woodland to the north, east and south of the works footprint. However, none of these will be felled as part of the proposed development and they have not therefore been considered any further. All of the remaining trees have 'negligible potential' for roosting bats as they are too immature to have suitable features.

Foraging and Commuting

Although the works footprint is dominated by hard-standing and has negligible value for foraging and commuting bats, there are a number of records of bats within 1 km and habitat in the immediate vicinity comprises continuous, high quality habitat in the form of

hedgerows, woodland edge and streams. It is also well connected to the wider landscape, including large areas of ancient woodland. Therefore, the survey area is considered to be of high value to foraging and commuting bats.

3.3.3 Birds

Although no active bird nests were observed during the survey, areas of scrub and trees provide suitable habitat for common nesting bird species. The hardstanding works area provides no suitable nesting opportunities.

3.3.4 Great Crested Newts

There are records of Great Crested Newts within 1 km but there are no water-bodies ecologically connected to the site. There is suitable terrestrial habitat within the survey area but given the lack of suitable and accessible breeding ponds it is unlikely that newts will be present.

3.3.5 Reptiles

There are records of the four common reptiles within 1 km of the site and scrub provides some potential for foraging and hibernation. However, the site is isolated from any large patches of rough grassland and does not provide extensive areas of suitable habitat which could support more than a few individuals.

3.3.6 Hazel Dormouse

There are records of Hazel Dormouse within 1 km and the hedgerow and patches of woodland adjacent to the survey area contain some stands of semi-mature *Corylus avellana* (Hazel). However, the structure and species composition would only provide limited foraging habitat for Hazel Dormice. Nevertheless, these habitats are connected to extensive areas of mixed semi-natural and ancient woodland to the north and south which is likely to provide more suitable habitat for Hazel Dormouse. Therefore, it is possible that this species is present within the survey area, but the hardstanding works area does not provide suitable habitat.

4 EVALUATION

4.1 Designated Sites

4.1.1 Statutory Sites

The site lies within the High Weald AONB. However, the AONB is designated for its landscape interest. The proposals will not alter the landscape features of the site or surrounding area therefore there will be no effect on the AONB and this does not need to be considered further.

The works will be restricted to existing areas of hard-standing therefore there will be no direct effects on other nearby designated sites. The effects on air quality will need to be considered however these will be addressed in a separate air quality assessment.

The site lies within 10 km of Ashdown Forest, Special Area of Conservation (SAC) and Special Protection Area (SPA). The Ashdown Forest is a European designated site. It contains one of the largest single continuous blocks of lowland heath in south-east England, with both dry heaths and, in a larger proportion, wet heath. A habitats regulations assessment (HRA) will be required to identify the likelihood of there being any significant, adverse effects of the proposals upon the qualifying features of Ashdown Forest. This is currently being undertaken by RSK and will be submitted as part of the planning application.

4.1.2 Non-Statutory and other notable sites

There are two non-statutory designated sites within 1 km however as the works will be restricted to existing areas of hard-standing there will be no direct effects on these sites. The effects on air quality will need to be considered however these will be addressed in a separate air quality assessment.

Lower Stumble Wood and Lower Beanham Wood lie adjacent to the survey area boundary however neither will be directly affected by the works. There are streams within these woodlands therefore steps should be taken to ensure no contaminated water reaches these water-bodies and that any lighting is directed away from the woodland edges (further measures to minimise light spill onto adjacent habitats are provided in the bat report).

4.2 Habitats

4.2.1 Value of habitats

Areas of planted vegetation have been created to act as a screen to works previously undertaken on the drilling platform. They provide habitat for nesting birds and some potential for reptiles however they contain common plant species and are replaceable.

The only habitats directly affected by the works are hard-standing and ruderal vegetation, which are of negligible value to biodiversity.

4.3 Protected Species

4.3.1 Badgers

No Badger signs or setts were found during the survey and there are no records of Badgers in the vicinity of the site. Badgers regularly move territories, open up old setts or dig new ones. However, the hard-standing that covers the works footprint offers no potential for sett creation. The scrubbed banks to the north and east of the works footprint do provide suitable sett building habitat, however, no setts were recorded during the PEA. Therefore, should any evidence of Badgers within these areas be noted during works an ecologist should be consulted and further action may be required.

4.3.2 Birds

Vegetation clearance is unlikely to be required as part of the proposal however, if any vegetation clearance is required, it should be conducted outside the breeding bird season (March to August inclusive). If this is not possible then a watching brief by an ecologist would be required to ensure that no nesting birds are present, no more than 48 hours prior to vegetation being cleared. If nests were found to be present during this time, work would have to stop until the nestlings had fledged. All active birds' nests, regardless of species, are protected by law. A nest is deemed to be active even if it is in the process of being built and does not yet contain eggs or young. If vegetation clearance is undertaken outside of the nesting season, then nesting birds do not have to be considered.

4.3.3 Bats

Roosting – Trees

Under current proposals, no trees will be directly affected. Mature trees along the edges of adjacent woodland are likely to provide roosting opportunities for bats, however these are over 5m from the works area. If proposals change and these trees are affected, further surveys will be required to ascertain whether bats are roosting in these trees. Further surveys (such as a detailed ground level assessment followed by tree climbing or emergence / dawn surveys) may be required. Emergence / re-entry surveys would be carried out during the active months for bats (between May and August) and are only required if evidence of bats or significant features for roosting are found during the ground level assessment or tree climbing survey.

Foraging and commuting

As a whole, the survey area is considered to have high value for foraging and commuting bats however, as the works will be restricted to the area of hard-standing there will be no direct effects on habitat suitable for foraging and commuting bats.

Although the works area on its own is considered to have low value for foraging and commuting bats, the site will be well lit by artificial lighting therefore, there is potential for indirect effects on adjacent habitat. In previous instances, discussions with the county ecologist agreed a survey scope proportionate to the works and potential effects, involving three surveys visits undertaken seasonally across the bat active

period (one in spring, one in summer and one in autumn). The habitats present do not appear to have changed to a sufficient degree that its suitability would have changed. If no changes to the original scope of works and lighting strategy are proposed, a repeat of the previous survey effort should be sufficient to inform and update a lighting plan, but this would need to be agreed with the local authority.

4.3.4 Common reptiles

The hardstanding platform is mostly covered by plastic sheeting. This represents some very limited hibernation potential for reptiles, as the plastic sheeting will provide weather screening for any cavities in the hardstanding. However, under current proposals Angus Energy intend to remove this sheeting prior to the reptile hibernation season (considered to be November to March inclusive).

The areas of dense scrub on site also provide suitable foraging and hibernation habitats but these are not expected to be affected by the works and no further surveys will be required.

4.3.5 Hazel Dormice

Although there is suitable habitat for Hazel Dormice within the survey area this will not be affected by the works. Indirect impacts such as light-spill should be mitigated (see bat report). The works footprint comprises hard-standing and ruderal vegetation which is unsuitable for Hazel Dormice. Therefore, this species will not be affected, and no further action is necessary.

5 REFERENCES

Chartered Institute of Ecology and Environmental Management (2017), *Guidelines for Preliminary Ecological Appraisal* (Technical Guidance Series). Chartered Institute of Ecology and Environmental Management. www.cieem.net/guidance-on-preliminary-ecological-appraisal-gpea-

Cherrill, A. & McClean, C. (1999), Between-observer variation in the application of a standard method of habitat mapping by environmental consultants in the UK. *Journal of Applied Ecology*, **36**, 989-1000.

Collins, J. (2016), *Bat Surveys for Professional Ecologists: Good Practice Guidelines* (3rd edn). The Bat Conservation Trust, London.

Institute of Environmental Assessment (1995), *Guidelines for Baseline Ecological Assessment*. Spon, London.

Joint Nature Conservation Committee. (2010), *Handbook for Phase 1 Habitat Survey (revised 2010 edition)*. JNCC, Peterborough.

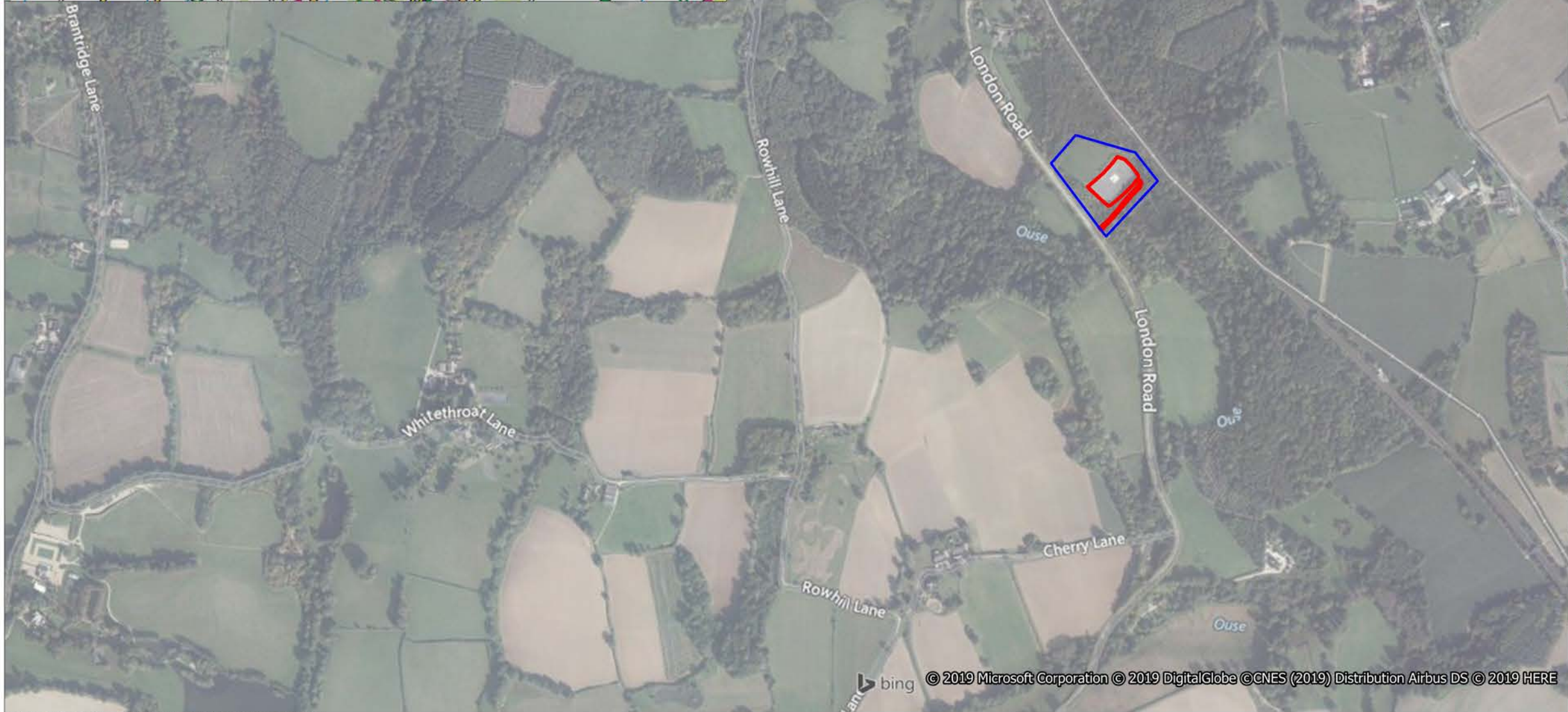
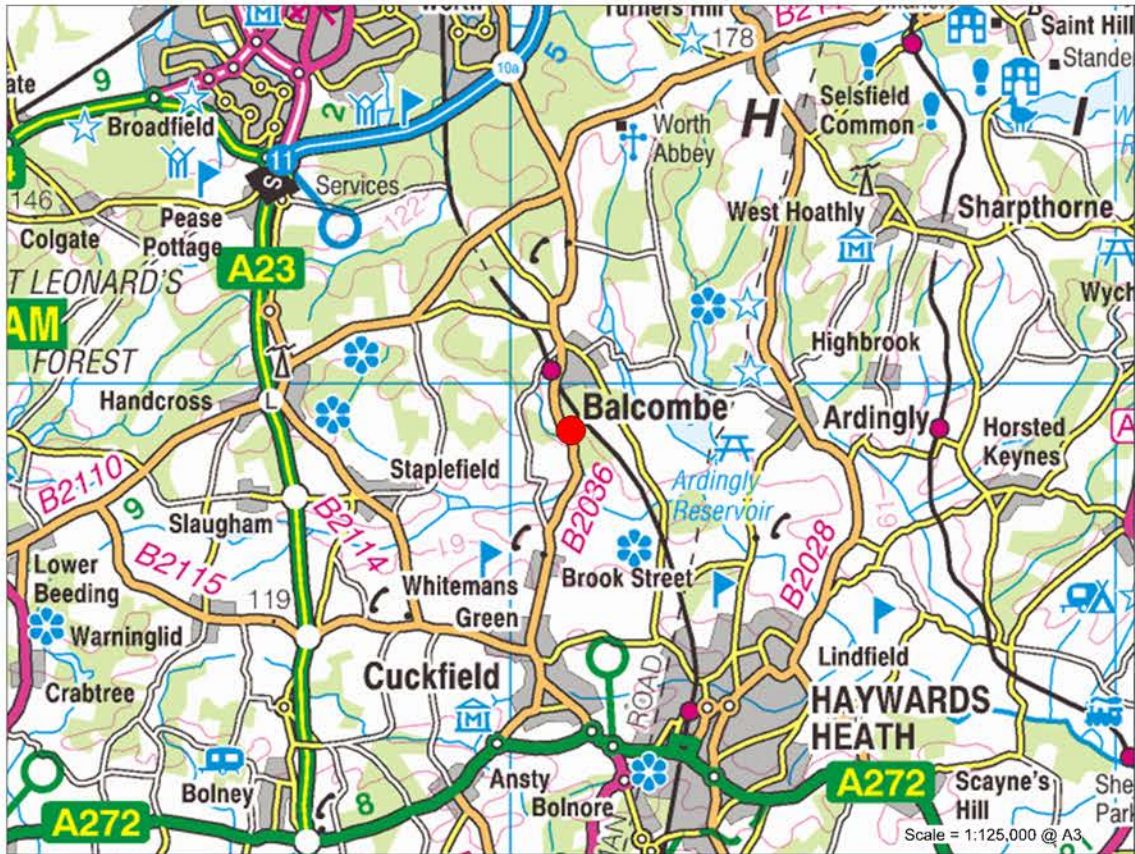
RSK (2017), *Lower Stumble Exploration Site, Balcombe – Preliminary Ecological Appraisal*. RSK Environment Ltd.

Stace CA (2010), *New Flora of the British Isles*, 3rd Edition. Cambridge University Press, Cambridge.

Usher M.B. (1986), *Nature Conservation Evaluation*. Chapman & Hall, London.

6 FIGURES

- Figure 1 Site Location Plan
- Figure 2 Phase 1 Habitat Survey Map
- Figure 3 500 m pond search



Site boundary

Survey Area

00	11.09.19	858544
Rev	Date	Description
Balcombe		

Figure 1

Site Location Plan

0

300

Metres

Scale = 1:10,000 @ A3

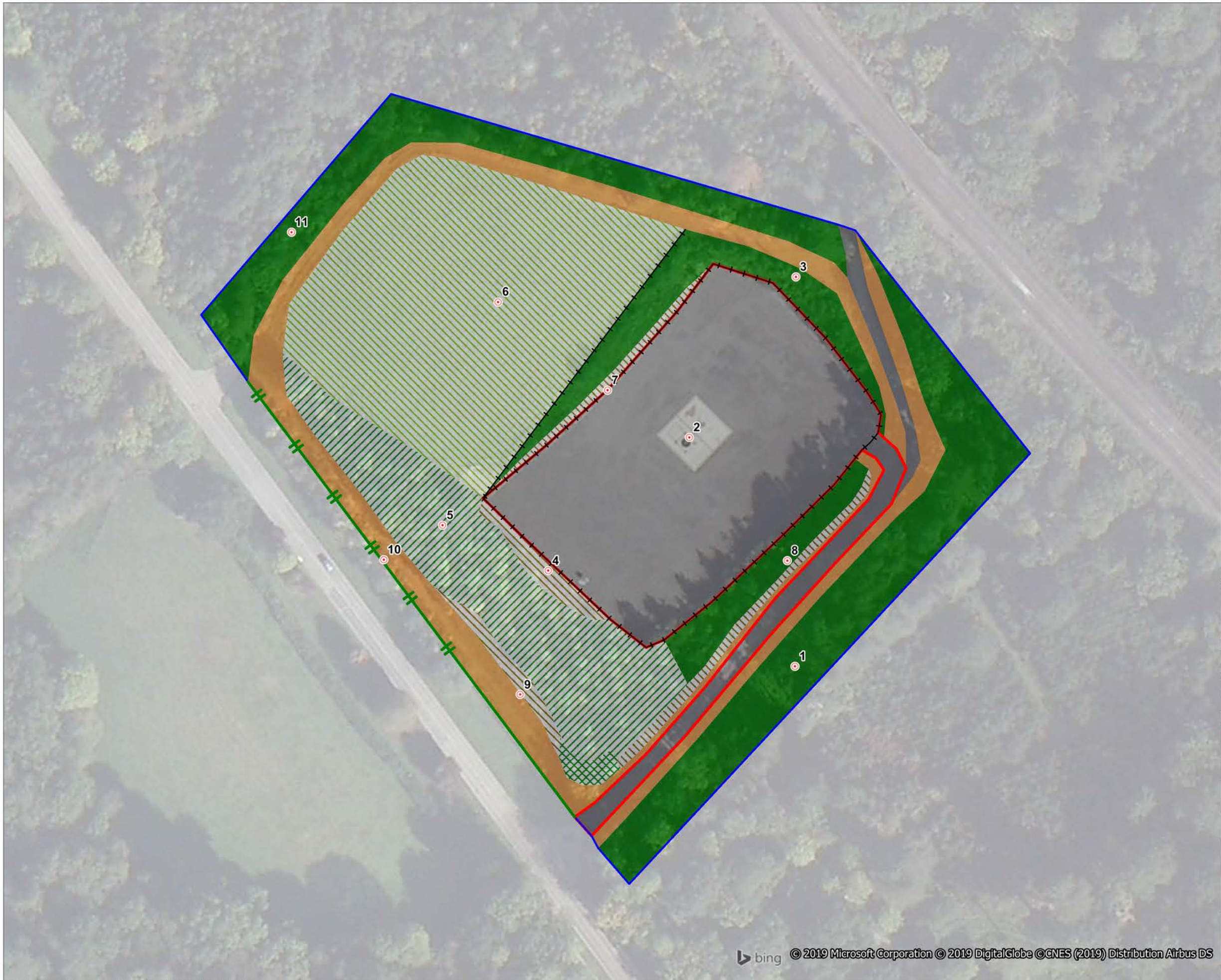
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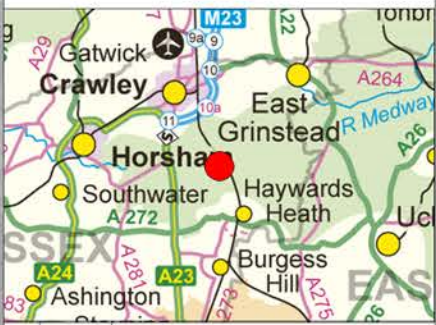
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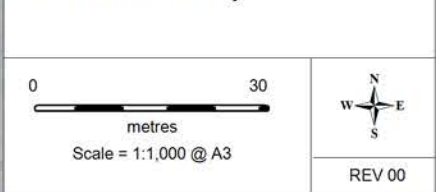


- Site boundary
- Survey area
- Broad-leaved semi-natural woodland
- Broad-leaved plantation woodland
- Coniferous plantation woodland
- Dense / continuous scrub
- Rough grassland
- Tall ruderal
- Hedge
- Hedge with trees
- Fence
- Hardstanding
- Target note



00	11.09.19	858544
Rev	Date	Description
Balcombe		

Figure 2
Phase 1 Habitat Survey





Site boundary

Survey area

500m buffer of site boundary

Pond

Rev	Date	Description
00	11.09.19	858544

Balcombe

Figure 3

Waterbodies within 500m

Scale = 1:5,000 @ A3

REV 00

APPENDIX 1 - TARGET NOTES

Target note 1 - An area of deciduous woodland (known as Lower Beanham Wood). Good structure, possibly suitable for dormice

Target note 2 – Hardcore access track off the B2036 leading to the platform work area surrounded by 7 ft fencing. Most of the middle of the platform is covered by thick plastic sheeting.

Target note 3 – Mature native species woodland planting comprising *Corylus avellane* (Hazel), *Quercus robur* (Pedunculate Oak), *Fraxinus excelsior* (Ash), *Clematis* sp. (Clematis) with an understory of *Rubus fruticosus* agg. (Bramble).

Target note 4 – Open area between the hardcore site and woodland planting comprising tall ruderal species and *Rubus fruticosus* agg. (Bramble).

Target note 5 – Planted *Tilia xeuropaea* (Lime) and *Quercus cerris* (Turkey Oak) trees with a grassland understory. The northern edge was being encroached by adjacent *Crataegus monogyna* (Hawthorn) and *Rubus fruticosus* agg. (Bramble) scrub.

Target note 6 – *Picea abies* (Norway Spruce) plantation.

Target note 7 – Tall ruderals along the fence line including *Arctium* (Burdock), *Heracleum* (Hogweed) and *Urtica dioica* (Common Nettle). This area provides possible habitat suitable for species of common reptiles.

Target note 8 – Dense and scattered scrub along the northern, eastern and southern boundaries of the works footprint. It is dominated by *Rubus fruticosus* agg. (Bramble) with some *Crataegus monogyna* (Hawthorn), *Prunus spinosa* (Blackthorn) and *Rosa canina* (Dog-rose). Scattered trees occur throughout and include *Corylus avellana* (Hazel), *Fraxinus excelsior* (Ash) and *Quercus robur* (Pedunculate Oak).

Target note 9 – A mown track alongside the hedge. Species included *Bellis perennis* (Daisy), *Poa annua* (Annual Meadow-grass), *Rumex acetosa* (Common Sorrel), *Ranunculus repens* (Creeping Buttercup) and *Urtica dioica* (Common Nettle). This area provides possible habitat for reptiles.

Target note 10 – A species-rich intact hedge which runs along the B2036. It appears to be managed but was outgrown at the time of survey. The hedge was c 5 m tall and 2 – 3 m wide with a fence along its eastern side. Species included *Crataegus monogyna* (Hawthorn), *Hedera*

helix (Ivy), *Rosa canina* (Dog-rose) and *Rubus fruticosus* agg. (Bramble) with scattered *Corylus avellana* (Hazel), *Fraxinus excelsior* (Ash) and *Fagus sylvatica* (Beech) trees.

Target Note 11 - Ancient woodland (forming part of Lower Stumble Wood) adjacent to the northern survey area boundary. This area was outside the survey zone however some plant species were noted, including trees such as *Betula pendula* (Silver Birch), *Corylus avellana* (Hazel), *Quercus cerris* (Turkey Oak), *Prunus spinosa* (Blackthorn), *Prunus sp.* (Cherry species) and herbaceous plants such as *Arum maculatum* (Lords-and-Ladies), *Helleborus viridis* (Green Hellebore), *Hyacinthoides non-scripta* (Bluebell), *Mercurialis perennis* (Dog's Mercury), *Rumex obtusifolius* (Broad-leaved Dock) and *Stellaria holostea* (Greater Stitchwort).

APPENDIX 2 - PLANT SPECIES LIST

Table 6: Plant Species List (August 2019).

Plant Species
Woody species
<i>Betula pendula</i> (Silver Birch)
<i>Corylus avellana</i> (Hazel)
<i>Crataegus monogyna</i> (Hawthorn)
<i>Fagus sylvatica</i> (Beech)
<i>Fraxinus excelsior</i> (Ash)
<i>Tilia x europaea</i> (Lime)
<i>Picea abies</i> (Norway Spruce)
<i>Juglans regia</i> (Walnut)
<i>Quercus cerris</i> (Turkey Oak)
<i>Quercus robur</i> (Pedunculate Oak)
<i>Rubus fruticosus</i> agg. (Bramble)
<i>Salix sp.</i> (Willow)
Herbaceous species
<i>Arctium sp.</i> (Burdock)
<i>Dipsacus fullonum</i> (Teasel)
<i>Geranium robertianum</i> (Herb Robert)
<i>Heracleum sphondylium</i> (Common Hogweed)
<i>Malva sylvestris</i> (Mallow)
<i>Oenothera biennis</i> (Evening primrose)
<i>Urtica dioica</i> (Common Nettle)

APPENDIX 3 - LEGISLATION

Bats

All species of British bat are protected by The Wildlife and Countryside Act 1981 (as amended) extended by the Countryside and Rights of Way Act 2000 (the CRow Act). This legislation makes it an offence to:

- intentionally kill, injure or take a bat;
- possess or control a bat;
- intentionally or recklessly damage, destroy or obstruct access to a bat roost; and
- intentionally or recklessly disturb a bat whilst it occupies a bat roost.

Badger

Meles meles (Badger) is protected in Britain under the Protection of Badgers Act 1992 and Schedule 6 of the Wildlife and Countryside Act 1981 (as amended).

The legislation affords protection to Badgers and Badger setts, and makes it a criminal offence to:

- wilfully kill, injure, take, possess or cruelly ill-treat a Badger, or to attempt to do so;
- interfere with a sett by damaging or destroying it;
- to obstruct access to, or any entrance of, a Badger sett; or
- to disturb a Badger when it is occupying a sett.

Birds

Birds General Protection

All species of bird are protected under Section 1 of the Wildlife and Countryside Act 1981 (as amended). The protection was extended by the CRow Act.

The legislation makes it an offence to intentionally:

- kill, injure or take any wild bird;
- take, damage or destroy the nest of any wild bird while that nest is in use or being built; or
- take or destroy an egg of any wild bird.

Birds (Specially Protected Species)

Certain species of bird are listed on Schedule 1 of the Wildlife and Countryside Act 1981 (as amended) and receive protection under Sections 1(4) and 1(5) of the Act. The protection was extended by the CRow Act. The legislation confers special penalties where the above mentioned offences are committed for any such bird and also make it an offence to intentionally or recklessly:

- disturb any such bird, whilst building its nest or it is in or near a nest containing dependant young; or
- disturb the dependant young of such a bird.

Dormouse

The Dormouse is protected by The Wildlife and Countryside Act 1981 (as amended), extended by the Countryside and Rights of Way Act 2000. This legislation makes it an offence to:

- Intentionally kill, injure or take a dormouse;
- Possess or control any live or dead specimen or anything derived from a dormouse (unless it can be shown to have been legally acquired);
- Intentionally or recklessly damage, destroy or obstruct access to any structure or place used for shelter or protection by a dormouse; or
- Intentionally or recklessly disturb a dormouse while it is occupying a structure or place which it uses for that purpose.

The Dormouse is also European Protected Species listed on The Conservation (Natural Habitats, & c.) Regulations 2017 (as amended). This legislation makes it an offence to:

- Deliberately capture or kill a dormouse;
- Deliberately disturb a dormouse;
- Damage or destroy a breeding site or resting place of a dormouse;
- Keep, transport, sell or exchange, or offer for sale or exchange a live or dead dormouse or any part of a dormouse.

Great Crested Newt

Triturus cristatus (Great Crested Newt) is listed on *Schedule 5* of the *Wildlife and Countryside Act 1981* (as amended), and receives full protection under *Section 9*. Great Crested Newts are also European Protected Species listed on The Conservation of Species and Habitats Regulations 2017 (as amended). This legislation makes it an offence to:

- deliberately capture, injure or kill a Great Crested Newt;
- deliberately disturb a Great Crested Newt (in such a way as to be likely to significantly affect, (i) the ability of a significant group of Great Crested Newt to survive, breed or rear/nurture their young; and (ii) the local distribution or abundance of the species concerned);
- deliberately take or destroys the eggs of such an animal;
- damage or destroy a breeding site or resting place of a Great Crested Newt; and
- possess, control, transport, sell, exchange a Great Crested Newt, or offer a Great Crested Newt for sale or exchange.

All resting and breeding places of Great Crested Newts receive legal protection even when Great Crested Newts are not present.

Common Reptiles

Lacerta vivipara (Common Lizard), *Natrix natrix* (Grass Snake), *Anguis fragilis* (Slow-worm), and *Vipera berus* (Adder) are listed under *Schedule 5* of the *Wildlife and Countryside Act 1981* (as amended), in respect of *Section 9(5)* and part of *Section 9(1)*. This protection was extended by the Countryside and Rights of Way Act 2000 (the CRow Act).

- Under the above legislation it is an offence to:
- intentionally or deliberately kill or injure any individual of such a species; or
- sell or attempt to sell any part of the species alive or dead.

APPENDIX 4 - NOTEWORTHY SPECIES RECORDS

Table 6 displays noteworthy species records that are located within 1 km of the site boundary. These species records were obtained from the Sussex Biodiversity Records Centre. The Latin and common names for species are given as well as their level of designation. A glossary defining abbreviations used in the table is given in Table 7, Appendix 5. If a species is not included in the table below it does not necessarily mean the species is absent from the search area, but rather that data-holding organizations do not have records of it in these locations.

Table 7: Noteworthy species records within 1 km of the site boundary

Latin Name	Common Name	Designation
Amphibians		
<i>Bufo bufo</i>	Common Toad	WCA5, S41
<i>Lissotriton helveticus</i>	Palmate Newt	WCA5
<i>Lissotriton vulgaris</i>	Smooth Newt	WCA5
<i>Rana temporaria</i>	Common Frog	WCA5
<i>Triturus cristatus</i>	Great Crested Newt	EPS(Sch2), WCA5, S41
Birds		
<i>Acanthis cabaret</i>	Lesser Redpoll	S41, Red
<i>Actitis hypoleucos</i>	Common Sandpiper	Amber
<i>Alauda arvensis</i>	Skylark	S41, Red
<i>Alcedo atthis</i>	Kingfisher	WCA1.1, Amber
<i>Anas clypeata</i>	Shoveler	Amber
<i>Anas penelope</i>	Wigeon	Amber
<i>Anas platyrhynchos</i>	Mallard	Amber
<i>Anser albifrons</i>	White-fronted Goose	S41, Red
<i>Anthus trivialis</i>	Tree Pipit	S41, Red
<i>Apus apus</i>	Swift	Amber
<i>Aythya fuligula</i>	Tufted Duck	Amber
<i>Botaurus stellaris</i>	Bittern	WCA1.1, S41, Amber
<i>Cettia cetti</i>	Cetti's Warbler	WCA1.1
<i>Chlidonias niger</i>	Black Tern	WCA1.1, Amber
<i>Chroicocephalus ridibundus</i>	Black-headed Gull	Amber
<i>Coccothraustes coccothraustes</i>	Hawfinch	S41, Red
<i>Columba oenas</i>	Stock Dove	Amber
<i>Cuculus canorus</i>	Cuckoo	S41, Red

Latin Name	Common Name	Designation
<i>Cygnus olor</i>	Mute Swan	Amber
<i>Delichon urbicum</i>	House Martin	Amber
<i>Dendrocopos minor</i>	Lesser Spotted Woodpecker	S41, Red
<i>Emberiza citrinella</i>	Yellowhammer	S41, Red
<i>Emberiza schoeniclus</i>	Reed Bunting	S41, Amber
<i>Falco subbuteo</i>	Hobby	WCA1.1
<i>Falco tinnunculus</i>	Kestrel	Amber
<i>Larus canus</i>	Common Gull	Amber
<i>Linaria cannabina</i>	Linnet	S41, Red
<i>Loxia curvirostra</i>	Common Crossbill	WCA1.1
<i>Luscinia megarhynchos</i>	Nightingale	Red
<i>Melanitta nigra</i>	Common Scoter	WCA1.1, S41, Red
<i>Milvus milvus</i>	Red Kite	WCA1.1, Amber
<i>Motacilla cinerea</i>	Grey Wagtail	Red
<i>Muscicapa striata</i>	Spotted Flycatcher	S41, Red
<i>Pandion haliaetus</i>	Osprey	WCA1.1, Amber
<i>Passer domesticus</i>	House Sparrow	S41, Red
<i>Passer montanus</i>	Tree Sparrow	S41, Red
<i>Phoenicurus phoenicurus</i>	Redstart	Amber
<i>Phylloscopus sibilatrix</i>	Wood Warbler	S41, Red
<i>Phylloscopus trochilus</i>	Willow Warbler	Amber
<i>Podiceps auritus</i>	Slavonian Grebe	WCA1.1, Red
<i>Poecile montana</i>	Willow Tit	S41, Red
<i>Poecile palustris</i>	Marsh Tit	S41, Red
<i>Prunella modularis</i>	Dunnock	S41, Amber
<i>Pyrrhula pyrrhula</i>	Bullfinch	S41, Amber
<i>Regulus ignicapilla</i>	Firecrest	WCA1.1, Amber
<i>Scolopax rusticola</i>	Woodcock	Red
<i>Sterna hirundo</i>	Common Tern	Amber
<i>Streptopelia turtur</i>	Turtle Dove	S41, Red
<i>Strix aluco</i>	Tawny Owl	Amber
<i>Sturnus vulgaris</i>	Starling	S41, Red
<i>Sylvia communis</i>	Whitethroat	Amber
<i>Tachybaptus ruficollis</i>	Little Grebe	Amber
<i>Turdus philomelos</i>	Song Thrush	S41, Red
<i>Turdus viscivorus</i>	Mistle Thrush	Red
<i>Tyto alba</i>	Barn Owl	WCA1.1, Amber
<i>Vanellus vanellus</i>	Lapwing	S41, Red

Latin Name	Common Name	Designation
Invertebrates		
<i>Apatura iris</i>	Purple Emperor	WCA5
<i>Coenonympha pamphilus</i>	Small Heath	S41
<i>Erynnis tages</i>	Dingy Skipper	S41, GB RDB(VU)
<i>Limenitis camilla</i>	White Admiral	S41, GB RDB(VU)
<i>Timandra comae</i>	Blood-vein	S41
Mammals		
Chiroptera	Bat sp.	EPS(Sch2)
<i>Erinaceus europaeus</i>	West European Hedgehog	S41
<i>Lepus europaeus</i>	Brown Hare	S41
<i>Muscardinus avellanarius</i>	Hazel Dormouse	EPS(Sch2), WCA5, S41
<i>Pipistrellus</i> sp.	a pipistrelle bat	EPS(Sch2), WCA5
<i>Pipistrellus pipistrellus</i>	Common Pipistrelle	EPS(Sch2), WCA5
<i>Plecotus auritus</i>	Brown Long-eared Bat	EPS(Sch2), WCA5, S41
Plants		
<i>Anthemis cotula</i>	Stinking Chamomile	GB RDB(VU), ENG BSBI RDB(VU), NS
<i>Bromus secalinus</i>	Rye Brome	GB RDB(VU), NS
<i>Calypogeia integristipula</i>	Meylan's Pouchwort	NS
<i>Equisetum pratense</i>	Shady Horsetail	NS
<i>Genista tinctoria</i>	Dyer's Greenweed	ENG BSBI RDB(VU)
<i>Hieracium aggregatum</i>	Hawkweed	NR
<i>Hyacinthoides non-scripta</i>	Bluebell	WCA8
<i>Mentha pulegium</i>	Pennyroyal	WCA8, S41, GB RDB(EN), ENG BSBI RDB(CR), NR
<i>Racomitrium affine</i>	Lesser Fringe-moss	NS
<i>Ranunculus flammula</i>	Lesser Spearwort	ENG BSBI RDB(VU)
<i>Scleranthus annuus</i>	Annual Knawel	S41, GB RDB(EN), ENG BSBI RDB(EN)
<i>Spergula arvensis</i>	Corn Spurrey	GB RDB(VU), ENG BSBI RDB(VU)
Reptiles		
<i>Anguis fragilis</i>	Slow-worm	WCA5, S41
<i>Natrix helvetica</i>	Grass Snake	WCA5, S41
<i>Vipera berus</i>	Adder	WCA5, S41

APPENDIX 5 - ABBREVIATIONS

Table 8: Glossary of abbreviations used in this report

Code	Full Title	Explanation
Amber	Amber list	Amber listed species have a population status in the UK of medium conservation concern.
BA	The Protection of Badgers Act 1992	Legislation making it an offence to kill, injure or take a Badger, or to damage or interfere with a sett unless a licence is obtained from a statutory authority.
BAP	Biodiversity Action Plan	A plan that identifies threats to significantly important species and habitats, and sets out targets and actions to enhance or maintain biodiversity.
DA	The Deer Act 1991	All wild deer with the exception of Muntjac (<i>Muntiacus reevesi</i>) and Chinese Water deer (<i>Hydropotes inermis</i>) are protected by a closed season.
ENG BSBI RDB	A Vascular Plant Red List for England	A list published in 2014 by the Botanical Society of Britain and Ireland of the red list status of plants in England. Measured against standardised IUCN criteria.
ENG BSBI RDB(CR)	Critically Endangered	A BSBI Red List designation for species at an extremely high risk of extinction.
ENG BSBI RDB(EN)	Endangered	A BSBI Red List designation for species at a very high risk of extinction.
ENG BSBI RDB(VU)	Vulnerable	A BSBI Red List designation for species at high risk of extinction.
EPS (Sch 2)	European Protected Species (Schedule 2)	European protected species (listed on Schedules 2 of The Conservation of Habitats and Species Regulations 2017)
EPS (Sch 5)	European Protected Species (Schedule 5)	European protected species (listed on Schedules 5 of The Conservation of Habitats and Species Regulations 2017)
GB RDB	Red Data Book Species	Species identified in one of the UK Red Data 2001.
GB RDB(CR)	Critically Endangered	An IUCN Red List designation for species at an extremely high risk of extinction.
GB RDB(EN)	Endangered	An IUCN Red List designation for species at a very high risk of extinction.
GB RDB(VU)	Vulnerable	An IUCN Red List designation for species at high risk of extinction.

Code	Full Title	Explanation
HAP	Habitat Action Plan	A plan that identifies threats to a priority habitat and sets out targets and actions to enhance or maintain that habitat.
IUCN	International Union for Conservation of Nature and Natural Resources (also known as The World Conservation Union)	A worldwide partnership and conservation network to influence, encourage and assist societies throughout the world to conserve the integrity and diversity of nature and to ensure that any use of natural resources is equitable and ecologically sustainable.
LBAP	Local Biodiversity Action Plan	A plan that identifies threats to locally important species and habitats, and sets out targets and actions in Species Action Plans and Habitat Action Plans to enhance or maintain biodiversity at the county or regional level.
LHAP	Local Habitat Action Plan	A plan that identifies threats to a locally important priority habitat and sets out targets and actions to enhance or maintain that habitat.
LSAP	Local Species Action Plan	A plan that identifies threats to locally important species, and sets out targets and actions to prevent losing that species from the local area.
Notable	Scarce and threatened invertebrates	Invertebrate species which are estimated to occur within the range of 16 to 100 10km squares but subdivision into Notable A and Notable B categories is not possible as there is insufficient information available).
Notable:A	Scarce and threatened invertebrates	Taxa which do not fall within Red Data Book categories but which are none-the-less uncommon in Great Britain and thought to occur in 30 or fewer 10km squares of the National Grid or, for less well-recorded groups, within seven or fewer vice-counties.
Notable: B	Scarce and threatened invertebrates	Taxa which do not fall within Red Data Book categories but which are none-the-less uncommon in Great Britain and thought to occur in between 31 and 100 10km squares of the National Grid or, for less-well recorded groups between eight and twenty vice-counties.
NN	Nationally Notable	Designation for invertebrate taxa that are thought to be notably important in the UK.
NR	Nationally Rare	Species in 15 or fewer hectads in Great Britain.
NS	National Scarce	Species in 16-100 hectads in Great Britain.
OSPAR	OSPAR	Species listed on The Convention for the Protection of the Marine Environment of the North-East Atlantic

Code	Full Title	Explanation
Red	Red List	Red listed species have a population status in the UK with high conservation concern.
SAP	Species Action Plan	A plan that identifies threats to significantly important species, and sets out targets and actions to prevent losing that species to extinction.
S41	Species of Principal Importance	Species of Principal Importance in England under The Natural Environment and Rural Communities (NERC) Act (2006)
UKBAP	UK Biodiversity Action Plan	A plan that identifies threats to locally important species and habitats, and sets out targets and actions in Species Action Plans and Habitat Action Plans to enhance or maintain biodiversity in the UK.
WCA	<i>The Wildlife and Countryside Act 1981</i> (as amended)	Containing 4 Parts and 17 Schedules, the Act covers protection of wildlife (birds, and some animals and plants), the countryside, National Parks, and the designation of protected areas, and public rights of way. All wild plants in Britain are protected from intentional uprooting by an unauthorized person, but land owners, land occupiers, persons authorized by either of these or persons authorized in writing by the Local Authority for the area are exempt. Protection for some species may be limited to certain Sections of the Act (e.g. S13(2)).
WCA1	Schedule 1 of <i>The Wildlife and Countryside Act 1981</i> (as amended)	<p>This Schedule lists birds protected by special penalties at all times, but virtually all wild birds have some protection in law.</p> <p>Acts which are prohibited for all wild birds (except derogated 'pest' species) include intentional killing, injuring or taking; taking, damaging or destroying nests in use or being built; taking or destroying eggs; possessing or having control of (with certain exceptions but including live for dead birds, parts or derivative); setting or permitting certain traps, weapons, decoys or poisons. Selling, offering or exposing for sale, possessing or transporting for sale any live wild bird, egg or part of an egg or advertising any of these for sale, or dead wild bird including parts or derivatives are also prohibited. Many birds must be formally registered and ringed if kept in captivity.</p> <p>Schedule I WCA birds are additionally protected from intentional or reckless disturbance while building a nest, or when such a bird is in, on or near a nest containing eggs or young, or intentional or reckless disturbance of dependent young.</p>

Code	Full Title	Explanation
WCA5	Schedule 5 of <i>The Wildlife and Countryside Act 1981</i> (as amended)	Schedule 5 animals are protected from intentional killing, injuring or taking; possessing (including parts or derivatives); intentional or reckless damage, destruction or obstruction of any structure or place used for shelter or protection; selling, offering or exposing for sale, possessing or transporting for the purpose of sale (alive or dead, including parts or derivatives). Protection of some species is limited to certain Sections of the Act (e.g. S9(1), S9(4a), S9(4b), S9(5)).
WCA8	Schedule 8 of <i>The Wildlife and Countryside Act 1981</i> (as amended)	Plants and fungi protected from intentional picking, uprooting, destroying, trading (including parts or derivatives), etc.