

Park Downs

Site Management Plan

2024-2033

Appendices



SWT Ecology Services was commissioned by the Banstead Commons Conservators to prepare ten-year management plans for Banstead Commons. This project was kindly sponsored by the Reigate and Banstead Community Infrastructure Levy Fund.

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The contents of this report were correct at the time of the site visit. The report is provided for the sole use of the named client and is confidential.

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Appendix 1: Site background

Climate

The climate is typical of central southern England, moist and temperate with mild winters. Prevailing winds are from the south-west and in most years rainfall ranges between 550 millimetres and 650 millimetres. Normal average temperatures are 17°C in July and 5°C in January. Sunshine levels are amongst the highest in Britain, while the number of snow days is comparatively low.

It should be noted that recent analyses of climate trends by the Met Office indicated the following changes in climate in south-east England (Jenkins, 2009):

- Warming of the global climate system is unequivocal, with global average temperatures having risen by nearly 0.8 °C since the late 19th century and rising at about 0.2 °C/decade over the past 25 years
- Annual mean precipitation over England and Wales has not changed significantly since records began in 1766. Seasonal rainfall is highly variable but appears to have decreased in summer and increased in winter, although with little change in the latter over the last 50 years. All regions of the UK have experienced an increase over the past 45 years in the contribution to winter rainfall from heavy precipitation events; in summer all regions except NE England and N Scotland show decreases
- Sea-surface temperatures around the UK coast have risen over the past three decades by about 0.7 °C
- Sea level around the UK rose by about 1mm/yr in the 20th century, corrected for land movement. The rate for the 1990s and 2000s has been higher than this

Topography

The north boundary of the site starts at 150 m above sea level and slopes to the south, with the lowest point in the southeast corner of the site at 100 m above sea level.

Hydrology

As the site sits on the white chalk subgroup, it is considered a highly productive aquifer. Principal aquifer in UK up to 450 m thick and yielding 50 to 100 L/s from large diameter boreholes and up to 300 L/s from edited systems. Hard to very hard, good quality water.

History / Archaeology

The previous work plan is from 2006 and the most recent monitoring report is from 2019. The Conservators took custody of the land in 1893 and have been appointed in their current form since the twentieth century.

Aerial mapping from Google Earth goes back to 1945. This shows that previously, the whole site was grassland. Since then, areas of the site have become wooded.

Banstead Commons Conservators

Banstead Commons Conservators were set up as a result of the Metropolitan Commons (Banstead) Supplemental Act of 1893 and related to four areas of common land: Banstead Heath, Banstead Downs, Park Downs and Burgh Heath. The Act conferred a statutory duty upon the Conservators to ensure safe and free public access to the four commons and to protect them from damage and trespass. Further details of the Banstead Commons Conservators and their activities can be found at www.bansteadcommons.org.uk

Appendix 2: Park Downs HLS agreement mapping and management prescriptions

**HK15
PART 3**

HLS - Management of environmental features

General conditions on all HLS agreement land

On your HLS agreement land you must follow the general management conditions set out below, unless specifically stated otherwise in a subsequent section of this agreement. HLS agreement land is all land on which Higher Level Stewardship management prescriptions apply, including items within a Capital Works Plan

- Do not apply lime.
- On the conventional land that you manage: do not apply pesticides, except for the control of spear thistle, creeping thistle, curled dock, broad-leaved dock, common ragwort, nettles or other undesirable species named in your agreement.
Herbicides may only be applied to these species by weedwiper or by spot treatment.
- Do not allow your agreement land to be levelled, infilled, used for the storage or dumping of materials or used by motor vehicles or machinery (except where necessary for the management of the land), if this is likely to cause long-term damage from rutting or compaction of the soil, or otherwise damage areas being managed under the scheme.
- Do not light fires (including burning brash or cuttings) where they could cause damage to features of archaeological or historic interest, or within ten metres of tree canopies or on any areas managed for their wildlife habitat interest. (This does not restrict your ability to manage heathland vegetation by controlled burning in compliance with the Heather and Grass Burning Regulations 1986 and accompanying Code.)
- Do not allow your agreement land to be used for organised games or sports, rallies, camping or caravanning, shows or sales where this is likely to damage areas being managed for their wildlife habitat interest or features of archaeological or historic interest; where this is likely to cause excessive or unreasonable disturbance to wildlife being encouraged under your agreement; or where this would cause unreasonable restriction to Public Rights of Way or "access land" as designated under the Countryside and Rights of Way Act 2000.
- Do not carry out or permit metal detecting or archaeological fieldwork on any of the archaeological sites on your holding identified in your Farm Environment Plan, unless agreed with your Natural England adviser in writing. In some cases a derogation will also be required.

HC16 - Restoration of successional areas and scrub

Land parcels and associated features managed under this option:

RLR Field Number: TQ26587357

Features: G02 Semi-improved grassland, T08 Native semi-natural woodland

RLR Field Number: TQ27580848

Features: G02 Semi-improved grassland, T08 Native semi-natural woodland

General description of the management required:

The aim of this option is to maintain habitat mosaics at the field and landscape scale for specific BAP species and to protect soils and watercourses. It is also suitable adjacent to woodland to enhance or maintain the quality of the woodland edge environment and to maintain scrub on limestone pavement. This option is not appropriate on archaeological sites, or where scrub will be detrimental to the landscape. The option will require some form of regular management of vegetation, such as extensive grazing, on part or all of the site to maintain suitable conditions for species and to prevent the development of woodland. The option may require the exclusion of livestock in some or all years.

Indicators of Success

- The following desirable species - a variety of shrubs, providing nectar and berries should be present.
- Cover of shrub species Juniper / Box / Hawthorn / Blackthorn / Hazel, Field maple should be between 20% and 60% of the area. The vegetation within 2m of the edge of the scrub should be taller than 30cm.
- Shrub species should have a diverse age and height structure. No more than 50% of the scrub area should be mature, or over mature.
- Tree species Ash, Field maple or Yew should be present at irregular spacings, with an overall canopy of between 5 - 10% of the area.
- Grasses and wild flowers including those typical of chalk grassland should be present at the edges of the area.
- By year 2, the following undesirable species Ragwort, Creeping Thistle, other invasive species known on the site should be no more than occasional.
- All SSSI land should be in favourable or recovering condition.

Management Prescriptions; the dos and don'ts of management

The following rules apply across the whole area being managed under this option.

- Supplementary feeding is not permitted.
- Control all non-native conifers, Poplar, Sycamore.
- Unless otherwise agreed with your Natural England adviser, all mature or over- mature standing trees and all standing and fallen deadwood must be retained, unless it is a genuine safety hazard. Tree surgery must be limited to that required for the safety of people and livestock.
- There must be no ploughing or other cultivation such as reseeding, rolling or chain harrowing.
- There must be no new drainage or modification/improvement to existing drainage systems. Existing drains can be maintained.
- In years 1 to 5, follow a programme (agreed in writing with your NE adviser) of rotational scrub management. Never manage more than 1/4 of the site in any one year and never completely eradicate scrub from the site.

HK7 - Restoration of species-rich, semi-natural grassland

Land parcels and associated features managed under this option:

RLR Field Number: TQ246 19306

Features: G02 Semi-improved grassland

RLR Field Number: TQ25602084

Features: G02 Semi-improved grassland

RLR Field Number: TQ25616616

Features: G04 Lowland calcareous grassland - BAP habitat, SI01 Uncommon Invertebrates

RLR Field Number: TQ26587357

Features: G04 Lowland calcareous grassland - BAP habitat, SI01 Uncommon Invertebrates

RLR Field Number: TQ27580848

Features: G02 Semi-improved grassland

General description of the management required:

This option is targeted at grasslands that are potentially rich in plant and associated animal life. They are often on difficult ground and may have suffered from management neglect or they may have been selected for agricultural improvement. The botanical diversity of such grassland may be enhanced by simply amending existing management practices. However, on many sites pro-active restoration management will be required involving introduction of seeds and creation of gaps for their establishment. Substantial changes of livestock type, timing of grazing or control of dominant species may also be required. The option can also contribute to protecting valued landscapes and archaeology, and the promotion of good soil conditions.

Indicators of Success

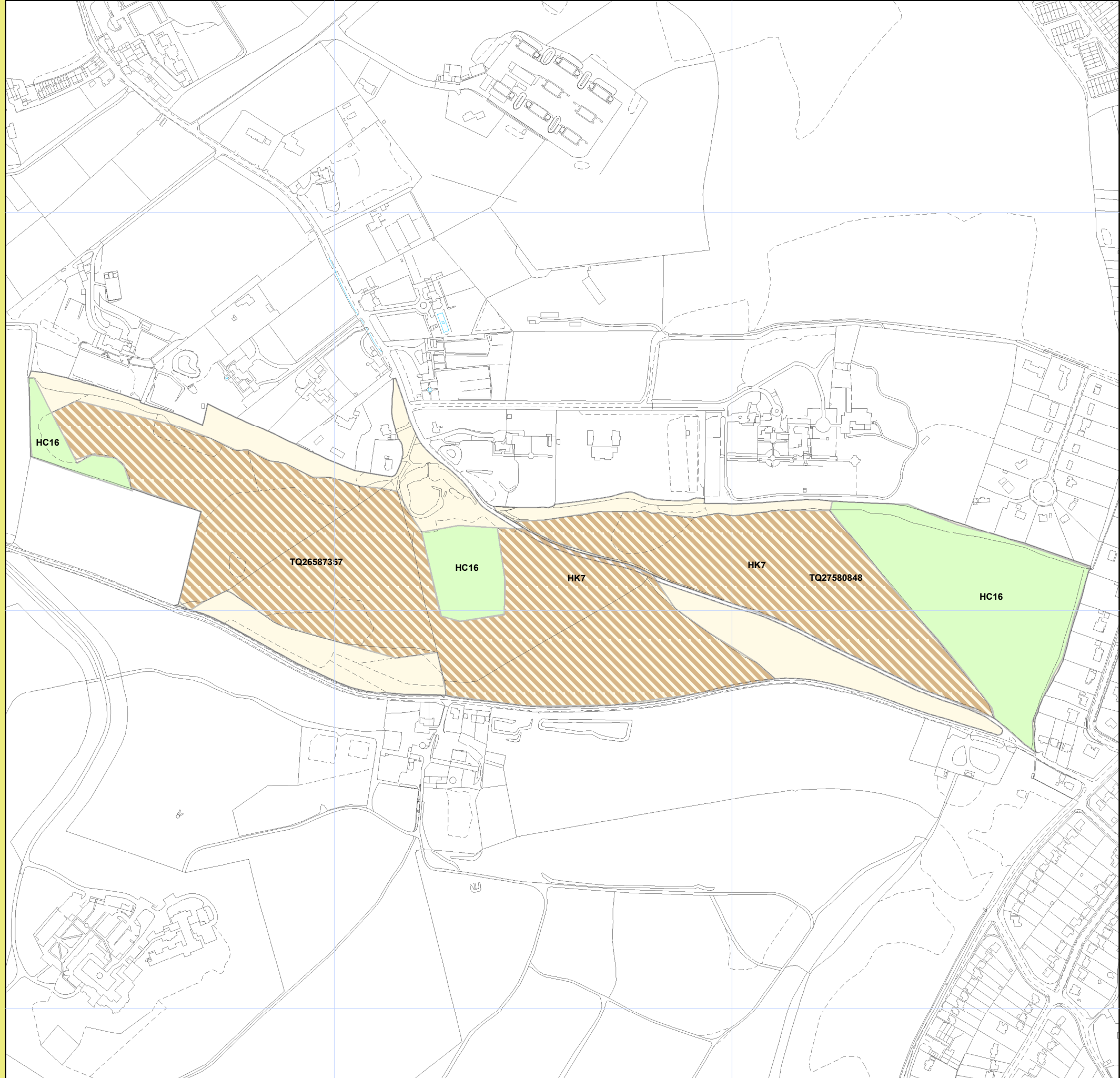
- The extent of the habitats of interest within the grassland and successional areas of scrub as identified in the Farm Environment Plan and on the SSSI citation should be maintained or increased.
- The Soil Phosphate Index should be 0 or 1 where practicable.
- By year 2, at least 2 high-value indicator species such as autumn gentian, bird's-foot trefoil, harebell, hoary plantain, agrimony, lady's bedstraw, mouse-ear hawkweed, marjoram, small scabious, squinancywort, bastard toadflax, clustered bellflower, wild thyme, kidney vetch, horseshoe vetch, meadow oat-grass, quaking grass, upright brome, yellow oat-grass as for BAP grassland habitat lowland calcareous grassland should be frequent and 2 occasional in the sward.
- By year 6, at least 4 high value indicator species for the BAP habitat feature lowland calcareous grassland should be frequent in the sward.
- In all years, populations of nationally rare, nationally scarce, locally significant species should be maintained — for example early gentian, round-headed rampion, bee orchids.
- All SSI land should be in favourable or recovering condition.
- By year 4 cover of wildflowers in the sward (excluding undesirable species but including rushes and sedges), should be between 20% and 60%. At least 30% of wild flowers should be flowering during May-July.

- By year 2, cover of bare ground should be between 1% and 5%, distributed throughout the field in hoof prints or other small patches.

Management Prescriptions; the dos and don'ts of management

The following rules apply across the whole area being managed under this option.

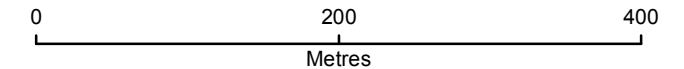
- From year 1, manage the sward by grazing and/or cutting to achieve a sward height of between 2cm and 10cm in November — any cuttings should be removed from site.
- There must be no application of nutrients such as fertilisers, organic manures or waste materials including sewage sludge.
- Supplementary feeding is not permitted.
- Control undesirable species such as Creeping Thistle, Spear Thistle, Common Ragwort, Common Nettle so that their cover is less than 2% of the area. Agree all methods of control with your Natural England adviser.
- Do not install new drainage or modify existing drainage systems unless agreed with your Natural England adviser.
- Ploughing, sub-surface cultivation and reseedling are not permitted.
- Field operations and stocking must not damage the soil structure or cause heavy poaching. Particular care when the land is waterlogged.
- In year 1 to 5, follow a programme (agreed in writing with your NE adviser) of rotational scrub management. Never manage more than 1/4 of the site in any one year and never completely eradicate scrub from the site.
- In year 1 to 3, follow a programme (agreed in writing with your NE adviser) of rotational Bracken management through cutting or bruising of dense Bracken stands.



HIGHER LEVEL STEWARDSHIP OPTIONS MAP

Options	Assigned colour	Applicants colour match
HB		
HC/OHC		
HC/OHC		
HC/UHC/UOHC		
HD/OHD/UHD/UOHD		
HD/OHD		
HE/OHE		
HF/OHF		
HG/OHG		
HJ/OHJ		
HJ/OHJ/UHJ/UOHJ		
HK/OHK		
HL/OHL/UHL/UOHL		
HO		
HP		
HQ		
GF 4		
PC		
	SX12345678	RLR field number
		Holding parcels

You must write the specific option codes you have selected in black on the map, e.g. HD2, OHF4, HK12, HP3, UHD13, UOHL21. Options with a 'U' prefix have certain restrictions, refer to handbook.



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Appendix 3: Methodology

Desk study

The desk study included a search of information already available for the site including past management plans, agri-environment scheme agreements, statutory and non-statutory site information, past surveys and monitoring for the site.

In addition, a data search undertaken by the Surrey Biological Information Centre on behalf of SWT Ecology Services, which was received on 05/01/2023. The desk study included a search of records of protected species and those of conservation concern within 1 km of the survey area, and of statutory and non-statutory designated sites within 2 km of the survey area.

An assessment of the likelihood of species being present within the survey area was made by comparing their habitat requirements with habitats recorded in the survey area. Species that were unlikely to occur were scoped out of the assessment.

Waterbodies within 250m of the survey area boundary were identified using aerial photography and publicly available mapping.

Publicly available information on (DEFRA, n.d.) was also consulted.

Habitat survey

Habitats in the survey area were mapped using the UK habitat classification survey methodology (Butcher, P, R, Norton, & Treweek, 2020).

UK Habitat Classification survey is a comprehensive system for classifying and mapping habitats within the UK. The aim of the survey is to identify and map habitats using aerial imagery and ground-truthing the information in a consistent and unified way such that this can be used for ecological impact assessment and habitat metrics. The whole survey area was walked by an experienced ecologist and habitats identified, classified and mapped. Each habitat is coded in line with the survey methodology, using secondary codes to define specific features, such as management measures, land use and other specific features. Where these secondary codes are used in the report, the definitions are also provided.

Within each habitat type a record of the vascular plant species was made and an assessment of their abundance recorded. Abundances of each vascular plant species within each habitat type are based on the DAFOR scale, presented below.

- D – Dominant
- A – Abundant
- F – Frequent
- O – Occasional
- R – Rare

Nomenclature of vascular plants followed (Stace, 2019). Common names are presented in the text, with scientific names detailed in Appendix 4.

Fauna species mentioned in this report will be referred to by their common name. Scientific names for these species are detailed in Appendix 5.

The survey included an assessment of the habitats present to determine their suitability for protected species and species of conservation concern. A record was made of any signs of protected species, or species of conservation concern, such as runs, droppings and/or foraging remains.

A record was also made of any fauna that was incidentally recorded.

The presence, location and distribution of any non-native invasive species was noted.

Notable observations were recorded during the survey as target notes.

The date and weather conditions are detailed in Table 1. The survey was undertaken by Harriet Baber BSc (Hons) - Senior Ecologist.

Table 1: Survey dates and weather conditions

Date of survey	Survey time	Temp °C	Cloud (%)	Rain	Wind ¹
12.06.23	09:25	19	30%	No rain	1 - Light air

BNG condition assessment

BNG assessment requires information on the condition of the habitat. This was undertaken on 12/06/2023 by Harriet Baber BSc (Hons) - Senior Ecologist, who has the relevant skills and knowledge to assess condition for the habitats encountered. The report review process includes an assessment by a more senior ecologist to ensure that the condition assessment has been undertaken in line with best practice.

The condition assessment was undertaken in line with the methods set out in (Panks, et al., Biodiversity Metric 3.1: Auditing and Accounting for Biodiversity: Technical Supplement, 2022b). Habitat condition assessment forms are presented in Appendix 6. Each habitat compartment is assigned a condition in line with guidance, and are assigned as good, fairly good, moderate, fairly poor and poor. For some habitats, the condition has been pre-determined, such as rhododendron and Bramble scrub.

For ease of reference, habitat compartments in Figure 1 have been numbered as below.

- Lowland calcareous grassland = 1.1-1.6
- Woodland = 2.1-2.5
- Mixed scrub = 3.1

Note that this BNG condition assessment is separate and different from the condition assessment undertaken by Natural England as part of the assessment of condition of SSSIs. The NE assessment uses different, more detailed criteria although there is some overlap.

Biodiversity net gain assessment

Biodiversity net gain is calculated and interpreted following eight principles and rules, as defined in (Panks, et al., Biodiversity Metric 3.1: Auditing and Accounting for Biodiversity - User Guide, 2022). This is further supported by (CIEEM, CIRIA, IEMA, 2019) and (BSI, 2021) that detail, among other things, how to implement biodiversity net gain good practice principles within each stage of a development project's life cycle.

¹ Beaufort scale

Baseline biodiversity units

Calculating baseline biodiversity units requires information on a habitat's area, distinctiveness, condition, and strategic significance. The habitat areas and habitat condition are based on the habitat survey methods detailed above.

Distinctiveness refers to the relative scarcity of the habitat and its importance for nature conservation. The distinctiveness categories are pre-determined by the metric.

Strategic significance is assessed against information in the local plan or policies for that habitat and its location. This is considered separately for each habitat type.

The data were input into the biodiversity net gain metric (Natural England, 2021), accessed on 28/06/2023. The completed metric accompanies this report.

Biodiversity gains available

The available gains were calculated by assuming that all habitats will be managed to reach a target habitat condition of good. This information was input into the biodiversity net gain metric to determine the number of available biodiversity units.

Limitations

Ecological surveys

Habitat surveys can be undertaken at any time of year, with the optimal season being between March and September, when most plant species are visible. Where feasible, all efforts were made to schedule the habitat survey in optimal weather conditions and time of year. Nevertheless, field surveys usually fail to record all species present for various reasons, including the seasonal absence of some species, and short survey duration. Rare or cryptic species are often missed in short surveys.

Habitat condition assessments should be undertaken at the optimal time of year for the habitat, which for this site was in June which is considered to be optimal.

Based on the above, a full appraisal of the plant species and habitats present could be undertaken at the time of the survey.

As the primary purpose of the investigation was to assess the habitats present and their suitability to support protected species and species of conservation concern, the desk study, combined with the field survey, were sufficient to complete this aspect of the assessment.

Biodiversity net gain assessment

BNG uses habitats as a proxy for biodiversity and is a simplification of the real world. Ecological function must also be considered to manage this limitation and this is detailed throughout relevant sections of the report and the avoid, minimise, restore and compensate principles must be applied throughout all stages of the development for habitats and species alike.

The BNG values presented would only be achievable following the creation and implementation of a bespoke Habitat Management Plan, which must cover a time period specific to the time to target condition stated by the metric (up to 30 years).

Appendix 4: Vascular plant species recorded on the site

Table 1: vascular plant species recorded on 12/06/2023

Scientific name	Common name	Habitat/s	Abundance in habitat type
<i>Acer platanoides</i>	Norway Maple	W1f,H3h	O,O
<i>Acer pseudoplatanus</i>	Sycamore	W1f,W1f,G2a, H3h	F,F,O,F
<i>Achillea millefolium</i>	Yarrow	G2a	O
<i>Aegopodium podagraria</i>	Ground Elder	W1f	R
<i>Aesculus hippocastanum</i>	Horse-chestnut	W1f	O
<i>Agrimonia eupatoria</i>	Agrimony	W1f,G2a,W1f, G2a	R,O,R,R
<i>Agrostis gigantea</i>	Black Bent	W1f	F
<i>Agrostis stolonifera</i>	Creeping Bent	G2a	F
<i>Alliaria petiolata</i>	Garlic Mustard	W1f,W1F	O,O
<i>Anacamptis pyramidalis</i>	Pyramidal Orchid	G2a,G2a	O, O
<i>Anthoxanthum odoratum</i>	Sweet Vernal Grass	G2a	F
<i>Anthriscus sylvestris</i>	Cow Parsley	W1f	R
<i>Aquilegia vulgaris</i>	Columbine	G2a	R
<i>Arctium minus</i>	Lesser Burdock	W1f	R
<i>Argentina anserina</i>	Silverweed	G2a	R
<i>Arrhenatherum elatius</i>	False Oat-grass	W1f,G2a,G2a, G2a, G2a	F,F,F,F, F
<i>Bellis perennis</i>	Daisy	G2a	O
<i>Berberis vulgaris</i>	Barberry	W1f	R
<i>Betula pendula</i>	Silver Birch	W1f,G2a,W1f, G2a,H3h	O,R,F,R,A
<i>Brachypodium sylvaticum</i>	False Brome	W1f	O
<i>Briza media</i>	Quaking Grass	G2a	R
<i>Plantago major</i>	Greater Plantain	G2a	R
<i>Bromus erectus</i>	Upright Brome	G2a,G2a,G2a	O,A, F
<i>Bromus steriis</i>	Barren Brome	W1f	O

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Scientific name	Common name	Habitat/s	Abundance in habitat type
<i>Bryonia dioica</i>	White Bryony	G2a	R
<i>Buddleja davidii</i>	Butterfly-bush	H3h	R
<i>Calystegia sepium</i>	Hedge Bindweed	W1f	O
<i>Capsella bursa-pastoris</i>	Shepherd's-purse	G2a	R
<i>Carex divulsa</i>	Grey Sedge	W1f,W1f	O,R
<i>Carex flacca</i>	Glaucous Sedge	G2a,G2a,G2a	O,O,R
<i>Carex pendula</i>	Pendulous Sedge	W1f	O
<i>Carex sylvatica</i>	Wood-sedge	W1f	R
<i>Centaurea nigra</i>	Common Knapweed	W1f, G2a,G2a, G2a, G2a	O,F,F,R, O
<i>Cerastium glomeratum</i>	Sticky Mouse-ear	G2a,G2a	O,F
<i>Chamaenerion angustifolium</i>	Rosebay Willowherb	G2a	O
<i>Cirsium arvense</i>	Creeping Thistle	G2a	O
<i>Cirsium vulgare</i>	Spear Thistle	G2a,G2a,G2a	O,O,F
<i>Clematis vitalba</i>	Traveler's-joy	W1f,G2a,G2a, H3h, W1g7	R,O,R,O,O
<i>Convolvulus arvensis</i>	Field Bindweed	G2a	R
<i>Cornus sanguinea</i>	Dogwood	W1f,G2a,W1f, G2a,G2a,H3h	F,O,O,R,A,F
<i>Corylus avellana</i>	Hazel	W1f,W1f,	F,F
<i>Crataegus monogyna</i>	Hawthorn	W1f,W1f,G2a, H3h	F,A,O,A
<i>Dactylis glomerata</i>	Cock's-foot	W1f,G2a,G2a, G2a, G2a	F,A,A,O,O
<i>Discorea communis</i>	Black Bryony	W1f	R
<i>Dryopteris affinis</i>	Scaly Male Fern	W1f,W1f	R,R
<i>Epilobium hirsutum</i>	Greater Willowherb	W1f	R
<i>Epilobium parviflorum</i>	Hoary Willowherb	W1f	O
<i>Euonymus europaea</i>	Spindle	W1f,W1f,H3h	O,O,F
<i>Eupatorium cannabinum</i>	Hemp Agrimony	H3h	F
<i>Euphrasia officinalis</i>	Common Eyebright	G2a	R

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Scientific name	Common name	Habitat/s	Abundance in habitat type
<i>Euphrasia sp.</i>	Eyebright	G2a	R
<i>Fagus sylvatica</i>	Beech	W1f,W1f	F,O
<i>Festuca ovina</i>	Sheep's Fescue	G2a,G2a,G2a	A,F,F
<i>Festuca rubra</i>	Red Fescue	G2a	O
<i>Filipendula vulgaris</i>	Dropwort	G2a,G2a,G2a	F,A,R
<i>Fragaria vesca</i>	Wild Strawberry	G2a,G2a	O,R
<i>Fraxinus excelsior</i>	Ash	W1f, G2a,W1f	O,R,F
<i>Galium aparine</i>	Cleavers	W1f, G2a,W1f	O,R,F
<i>Galium mollugo</i>	Hedge Bedstraw	W1f, G2a,G2a,G2a, G2a	R,F,F,F, F
<i>Galium verum</i>	Lady's Bedstraw	G2a,G2a	O,R
<i>Geranium dissectum</i>	Cut-leaved Crane's-bill	G2a	R
<i>Geranium robertianum</i>	Herb-Robert	W1f	O
<i>Geum urbanum</i>	Wood Avens	G2a,W1f	O,O
<i>Glechoma hederacea</i>	Ground Ivy	W1f	R
<i>Hedera helix</i>	Common Ivy	W1f,W1f	A,A
<i>Helianthemum nummularium</i>	Common Rock-rose	G2a	A
<i>Helminthotheca echioides</i>	Bristly Ox-tongue	W1f	R
<i>Heracleum sphondylium</i>	Hogweed	W1f,W1f, G2a	R,O, R
<i>Holcus lanatus</i>	Yorkshire-fog	W1f,G2a,G2a, G2a,G2a	F,A,A,O,O
<i>Hordeum brachyantherum</i>	Meadow Barley	G2a	R
<i>Hyacinthoides x massartiana</i>	Hybrid Bluebell	W1f	R
<i>Hypericum androsaemum</i>	Tutsan	G2a	R
<i>Hypericum hirsutum</i>	Hairy St John's-wort	G2a,G2a, G2a	R,R, O
<i>Hypericum perforatum</i>	Perforate St John's-wort	W1f,G2a,G2a ,G2a,G2a	R,O,R,R, R

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Scientific name	Common name	Habitat/s	Abundance in habitat type
<i>Hypochaeris radicata</i>	Cat's-ear	W1f,G2a	R,O
<i>Ilex aquifolium</i>	Holly	W1f	O
<i>Jacobaea erucifolia</i>	Hoary Ragwort	G2a,G2a	R,R
<i>Jacobaea vulgaris</i>	Common Ragwort	W1f,G2a	R,R
<i>Lamiastrum galeobdolon subsp. argentatum</i>	Variegated Yellow Archangel	W1f	O
<i>Lapsana communis</i>	Nipplewort	G2a,W1f	O,R
<i>Lathyrus pratensis</i>	Meadow Vetchling	G2a	R
<i>Leucanthemum vulgare</i>	Ox-eye Daisy	G2a, G2a	R, R
<i>Ligustrum ovalifolium</i>	Wild Privet	W1f,W1f	O,O
<i>Linum catharticum</i>	Fairy Flax	G2a	R
<i>Lolium perenne</i>	Perennial Rye-grass	G2a	F
<i>Lonicera periclymenum</i>	Honeysuckle	W1f,W1f	O,O
<i>Lotus corniculatus</i>	Common Bird's-foot Trefoil	G2a,G2a, G2a	O,A,O
<i>Luzula campestris</i>	Field Wood-rush	G2a	R
<i>Medicago lupulina</i>	Black Medick	G2a	O
<i>Melica uniflora</i>	Wood Melick	W1f	R
<i>Myosotis sp</i>	Forget-me-not	W1f,W1f, G2a	R,R,R
<i>Odontites vernus</i>	Red Bartsia	G2a	O
<i>Origanum vulgare</i>	Wild Marjoram	G2a,G2a,G2a, G2a	F,A,R,F
<i>Papaver rhoeas</i>	Field Poppy	G2a	O
<i>Pastinaca sativa</i>	Wild Parsnip	W1f,G2a,W1f, G2a,G2a	F,F,O,F,R
<i>Pentaglottis sempervirens</i>	Green Alkanet	G2a	R
<i>Pilosella officinarum</i>	Mouse-ear Hawkweed	G2a,G2a	R,R
<i>Plantago lanceolata</i>	Ribwort Plantain	W1f,G2a,G2a,G2a	O,F,A,O
<i>Poa trivialis</i>	Rough Meadow-grass	G2a,G2a	O,O
<i>Polygala vulgaris</i>	Common Milkwort	G2a	R

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Scientific name	Common name	Habitat/s	Abundance in habitat type
<i>Potentilla reptans</i>	Creeping Cinquefoil	G2a	O
<i>Primula vulgaris</i>	Primrose	G2a	R
<i>Prunus avium</i>	Wild Cherry	H3h	R
<i>Prunus cerasifera</i>	Cherry Plum	W1f,W1F	R,R
<i>Prunus spinosa</i>	Blackthorn	W1f,W1f,H3h	F,O,O
<i>Quercus robur</i>	Pedunculate Oak	W1f,G2a,W1f, H3h	A,O,A,F
<i>Ranunculus acris</i>	Meadow Buttercup	W1f,G2a,G2a	O,F,F
<i>Ranunculus repens</i>	Creeping Buttercup	G2a,G2a	O,O
<i>Reseda lutea</i>	Wild Mignonette	G2a	R
<i>Rhinanthus angustifolius</i>	Greater Yellow-rattle	G2a, G2a,G2a,G2a	A,F,O, O
<i>Ribes rubrum</i>	Red Currant	W1f	R
<i>Rosa arvensis</i>	Field Rose	W1f, G2a,W1f	O,R,R
<i>Rosa canina</i>	Dogrose	G2a	R
<i>Rosa sp</i>	Rose	G2a,H3h	R,F
<i>Rubus fruticosus agg.</i>	Bramble	W1f,G2a,W1f, G2a,H3h	F,O,A,O,A
<i>Rubus idaeus</i>	Raspberry	W1f,W1f	R,R
<i>Rumex acetosa</i>	Common Sorrel	G2a,G2a,G2a	O,F,O
<i>Rumex crispus</i>	Curled Dock	G2a, W1f,	R,R
<i>Rumex sanguineus</i>	Wood Dock	W1f	R
<i>Salix caprea</i>	Goat Willow	G2a	O
<i>Sambucus nigra</i>	Elder	W1f,G2a,W1f	O,O,F
<i>Sanguisorba officinalis</i>	Salad Burnet	G2a,G2a,G2a	O,F,O
<i>Scorzoneroide autumnalis</i>	Autumn Hawkbit	G2a,G2a, G2a	O,R,A
<i>Scrophularia nodosa</i>	Common Figwort	W1f	R
<i>Silene vulgaris</i>	Bladder Champion	W1f,W1f,G2a	R,O,R
<i>Solanum dulcamara</i>	Bittersweet	W1f	R
<i>Sonchus asper</i>	Prickly Sow Thistle	W1f	R
<i>Sorbus aria agg</i>	Whitebeam	W1f,W1f	R,R

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Scientific name	Common name	Habitat/s	Abundance in habitat type
<i>Sorbus aucuparia</i>	Rowan	W1f	R
<i>Stachys sylvatica</i>	Hedge Woundwort	W1f, W1f	R,O
<i>Stellaria graminea</i>	Lesser Stitchwort	G2a	R
<i>Stellaria media</i>	Common Chickweed	G2a	O
<i>Symphytum x uplandicum</i>	Russian Comfrey	W1f, G2a,G2a	O,R,O
<i>Taraxacum officinale</i> agg.	Dandelion	W1f,G2a,W1f	R,O,R
<i>Taxus baccata</i>	Yew	W1f, W1g7	O,D
<i>Thymus polytrichus</i>	Wild Thyme	G2a	R
<i>Tragopogon pratensis</i>	Goat's-beard	G2a,G2a, G2a	O,O, R
<i>Trifolium campestre</i>	Hop Trefoil	G2a	O
<i>Trifolium pratense</i>	Red Clover	W1f,G2a,G2a	R,O,O
<i>Trifolium repens</i>	White Clover	G2a,G2a	F, R
<i>Urtica dioica</i>	Common Nettle	W1f,G2a,W1f	R,O F
<i>Veronica chamaedrys</i>	Germander Speedwell	W1f,G2a,G2a	R,O,O
<i>Veronica officinalis</i>	Heath Speedwell	G2a,G2a	O,A
<i>Viburnum lantana</i>	Wayfaring Tree	W1f,G2a,H3h,	O,R,R
<i>Viburnum opulus</i>	Guelder-rose	W1f	R
<i>Vicia sativa</i>	Common Vetch	G2a,G2a, G2a	R,R,R
<i>Viola raviniana</i>	Common Dog-violet	W1f	R

Table 2: Combined vascular plant records for SWT and SBS highlighting designations of notable species

Scientific name	Common name	Status	Other Notations	GB Notable Plant Register 2020	Surrey Plant Register
<i>Acer campestre</i>	Field Maple	0	AWI AX	0	0
<i>Acer platanoides</i>	Norway Maple	0	0	0	0
<i>Acer pseudoplatanus</i>	Sycamore	0	0	0	0
<i>Achillea millefolium</i>	Yarrow	0	0	0	0
<i>Aconitum napellus</i>	Monk's-hood	0	0	0	0

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Scientific name	Common name	Status	Other Notations	GB Notable Plant Register 2020	Surrey Plant Register
<i>Aegopodium podagraria</i>	Ground Elder	0	0	0	0
<i>Aesculus hippocastanum</i>	Horse-chestnut	0	0	0	0
<i>Agrimonia eupatoria</i>	Agrimony	0	0	0	0
<i>Agrostis gigantea</i>	Black Bent	0	0	0	0
<i>Agrostis stolonifera</i>	Creeping Bent	0	0	0	0
<i>Ajuga reptans</i>	Bugle	0	0	0	0
<i>Alliaria petiolata</i>	Garlic Mustard	0	0	0	0
<i>Anacamptis pyramidalis</i>	Pyramidal Orchid	0	GCI AX	0	0
<i>Anisantha sterilis</i>	Barren Brome	0	0	0	0
<i>Anthoxanthum odoratum</i>	Sweet Vernal-grass	0	GCI AX	0	0
<i>Anthriscus sylvestris</i>	Cow Parsley	0	0	0	0
<i>Aquilegia vulgaris</i>	Columbine	0	AWI AX	0	VC17 Scarce
<i>Arctium minus</i>	Lesser Burdock	0	0	0	0
<i>Arenaria leptoclados</i>	Lesser Thyme-leaved Sandwort	0	AX	0	0
<i>Arenaria serpyllifolia</i>	Thyme-leaved Sandwort	0	GCI AX	0	0
<i>Arrhenatherum elatius</i>	False Oat-Grass	0	0	0	0
<i>Arum maculatum</i>	Lords-and-Ladies	0	0	0	0
<i>Asparagus officinalis</i>	Garden Asparagus	0	0	0	0
<i>Asperula cynanchica</i>	Squinancywort	0	GCI AX	0	0
<i>Aster lanceolatus</i>	Narrow-leaved Michaelmas-daisy	0	0	0	0
<i>Aster novi-belgii</i>	Confused Michaelmas-daisy	0	0	0	0
<i>Aster x salignus</i>	Michaelmas Daisy	0	0	0	0
<i>Aucuba japonica</i>	Spotted-laurel	0	0	0	0
<i>Avenula pubescens</i>	Downy Oat-grass	0	GCI AX	0	0
<i>Bellis perennis</i>	Daisy	0	0	0	0

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Scientific name	Common name	Status	Other Notations	GB Notable Plant Register 2020	Surrey Plant Register
<i>Berberis thunbergii</i>	Thunberg's Barberry	0	0	0	0
<i>Berberis vulgaris</i>	Barberry	0	AX	0	VC17 Scarce
<i>Betula pendula</i>	Silver Birch	0	0	0	0
<i>Blackstonia perfoliata</i>	Yellow-wort	0	GCI AX	0	0
<i>Brachypodium sylvaticum</i>	False Brome	0	0	0	0
<i>Briza media</i>	Quaking-grass	0	GCI AX	0	0
<i>Bromopsis erecta</i>	Upright Brome	0	GCI AX	0	0
<i>Bromopsis ramosa</i>	Hairy-brome	0	AWI AX	0	0
<i>Bromus commutatus</i>	Meadow Brome	0	GCI AX	0	0
<i>Bromus hordeaceus</i>	Soft-brome	0	0	0	0
<i>Bryonia dioica</i>	White Bryony	0	0	0	0
<i>Buddleja davidii</i>	Butterfly-bush	LISI	0	0	0
<i>Buddleja globosa</i>	Orange-ball-tree	0	0	0	0
<i>Calystegia sepium</i>	Hedge Bindweed	0	0	0	0
<i>Campanula persicifolia</i>	Peach-leaved Bellflower	0	0	0	0
<i>Campanula rotundifolia</i>	Harebell	0	GCI AX	0	0
<i>Campanula trachelium</i>	Nettle-leaved Bellflower	0	AWI	0	0
<i>Capsella bursa-pastoris</i>	Shepherd's-purse	0	0	0	0
<i>Cardamine hirsuta</i>	Hairy Bitter-cress	0	0	0	0
<i>Carduus crispus</i>	Wetted Thistle	0	0	0	0
<i>Carex caryophyllea</i>	Spring-sedge	0	GCI AX	0	0
<i>Carex divulsa</i> subsp. <i>divulsa</i>	Grey Sedge	0	0	0	0
<i>Carex flacca</i>	Glaucous Sedge	0	GCI AX	0	0
<i>Carex pendula</i>	Pendulous Sedge	0	AWI AX	0	0
<i>Carex spicata</i>	Spiked Sedge	0	GCI AX	0	0
<i>Carex sylvatica</i>	Wood-sedge	0	AWI AX	0	0
<i>Catapodium rigidum</i>	Fern-grass	0	GCI AX	0	0
<i>Centaurea debeauxii</i>	Chalk Knapweed	0	0	0	0
<i>Centaurea nigra</i>	Common Knapweed	0	0	0	0
<i>Centaureum erythraea</i>	Common Centaury	0	GCI AX	0	0
<i>Cerastium fontanum</i>	Common Mouse-ear	0	0	0	0
<i>Cerastium glomeratum</i>	Sticky Mouse-ear	0	0	0	0
<i>Chamaenerion angustifolium</i>	Rosebay Willowherb	0	0	0	0
<i>Circaea lutetiana</i>	Enchanter's-nightshade	0	0	0	0
<i>Cirsium acaule</i>	Dwarf Thistle	0	GCI AX	0	0

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<i>Cirsium arvense</i>	Creeping Thistle	0	0	0	0
<i>Cirsium palustre</i>	Marsh Thistle	0	AX	0	0
<i>Cirsium vulgare</i>	Spear Thistle	0	0	0	0
<i>Clematis vitalba</i>	Traveller's-joy	0	0	0	0
<i>Clinopodium vulgare</i>	Wild Basil	0	GCI AX	0	0
<i>Convolvulus arvensis</i>	Field Bindweed	0	0	0	0
<i>Cornus sanguinea</i>	Dogwood	0	0	0	0
<i>Corylus avellana</i>	Hazel	0	0	0	0
<i>Cotoneaster atropurpureus</i>	Purple-flowered Cotoneaster	0	0	0	0
<i>Cotoneaster congestus</i>	Congested Cotoneaster	0	0	0	0
<i>Cotoneaster horizontalis</i>	Wall Cotoneaster	Sch9	0	0	0
<i>Cotoneaster rehderi</i>	Bullate Cotoneaster	0	0	0	0
<i>Cotoneaster salicifolius</i>	Willow-leaved Cotoneaster	0	0	0	0
<i>Cotoneaster simonsii</i>	Himalayan Cotoneaster	Sch9	0	0	0
<i>Cotoneaster</i> sp.	<i>Cotoneaster</i> sp.	0	0	0	0
<i>Cotoneaster sternianus</i>	Stern's Cotoneaster	0	0	0	0
<i>Cotoneaster x watereri</i>	Waterer's Cotoneaster	0	0	0	0
<i>Crataegus monogyna</i>	Hawthorn	0	0	0	0
<i>Crepis biennis</i>	Rough Hawk's-beard	0	GCI AX	0	VC17 Scarce
<i>Crepis capillaris</i>	Smooth Hawk's-beard	0	0	0	0
<i>Cruciata laevipes</i>	Crosswort	0	AX	0	0
<i>Cuscuta epithymum</i>	Dodder	0	GCI AX	0	0
<i>Dactylis glomerata</i>	Cock's-foot	0	0	0	0
<i>Dactylorhiza fuchsii</i>	Common Spotted-orchid	0	GCI AX	0	0
<i>Dactylorhiza praetermissa</i>	Southern Marsh-orchid	0	GCI AX	0	0
<i>Daphne laureola</i>	Spurge-laurel	0	AWI AX	0	0
<i>Daucus carota</i> ssp. <i>carota</i>	Carrot	0	AX	0	0
<i>Diplotaxis muralis</i>	Annual Wall-rocket	0	0	0	0
<i>Dipsacus fullonum</i>	Wild Teasel	0	0	0	0
<i>Dryopteris affinis</i>	Scaly Male-fern	0	AWI AX	0	0
<i>Dryopteris dilatata</i>	Broad Buckler-fern	0	0	0	0
<i>Dryopteris filix-mas</i>	Male Fern	0	0	0	0
<i>Epilobium hirsutum</i>	Great Willowherb	0	0	0	0

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<i>Epilobium montanum</i>	Broad-leaved Willowherb	0	0	0	0
<i>Epilobium parviflorum</i>	Hoary Willowherb	0	0	0	0
<i>Ervum tetraspermum</i>	Smooth Tare	0	0	0	0
<i>Euonymus europaeus</i>	Spindle	0	AX	0	0
<i>Eupatorium cannabinum</i>	Hemp-agrimony	0	0	0	0
<i>Euphorbia amygdaloides</i>	Wood Spurge	0	AWI AX	0	0
<i>Euphrasia</i> agg.	Eyebright	0	AX	0	0
<i>Euphrasia nemorosa</i>	Common Eyebright	0	GCI AX	0	0
<i>Fagus sylvatica</i>	Beech	0	0	0	0
<i>Festuca ovina</i> agg.	Sheep's Fescue	0	GCI	0	0
<i>Festuca rubra</i> agg.	Red Fescue	0	0	0	0
<i>Ficaria verna</i>	Lesser Celandine	0	0	0	0
<i>Filipendula vulgaris</i>	Dropwort	0	GCI AX	0	0
<i>Fragaria vesca</i>	Wild Strawberry	0	GCI AX	0	0
<i>Fraxinus excelsior</i>	Ash	0	0	0	0
<i>Fuchsia magellanica</i>	Fuchsia	0	0	0	0
<i>Galanthus</i> sp.	Snowdrop sp.	0	0	0	0
<i>Galium album</i>	Hedge Bedstraw	0	0	0	0
<i>Galium aparine</i>	Cleavers	0	0	0	0
<i>Galium verum</i>	Lady's Bedstraw	0	GCI AX	0	0
<i>Gentianella amarella</i>	Autumn Gentian	0	GCI AX	0	VC17 Local
<i>Geranium columbinum</i>	Long-stalked Crane's-bill	0	GCI AX	0	VC17 Local & Declining
<i>Geranium dissectum</i>	Cut-leaved Crane's-bill	0	0	0	0
<i>Geranium pratense</i>	Meadow Crane's-bill	0	GCI AX	0	VC17 Scarce
<i>Geranium robertianum</i>	Herb-Robert	0	0	0	0
<i>Geum urbanum</i>	Wood Avens	0	0	0	0
<i>Glechoma hederacea</i>	Ground-ivy	0	0	0	0
<i>Hedera helix</i>	Ivy	0	0	0	0
<i>Helianthemum nummularium</i>	Common Rock-rose	0	GCI AX	0	0
<i>Helleborus foetidus</i>	Stinking Hellebore	0	AX	0	VC17 Rare
<i>Helminthotheca echioides</i>	Bristly Oxtongue	0	0	0	0
<i>Heracleum sphondylium</i>	Hogweed	0	0	0	0
<i>Hippocrepis comosa</i>	Horseshoe Vetch	0	GCI AX	0	0
<i>Holcus lanatus</i>	Yorkshire-fog	0	0	0	0
<i>Hordeum secalinum</i>	Meadow Barley	0	GCI AX	0	0
<i>Hyacinthoides non-scripta</i>	Bluebell	Sch8	AWI AX	0	0

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<i>Hyacinthoides x massartiana</i>	Hybrid Bluebell	LISI	0	0	0
<i>Hypericum androsaemum</i>	Tutsan	0	AWI AX	0	0
<i>Hypericum hirsutum</i>	Hairy St John's-wort	0	AX	0	0
<i>Hypericum perforatum</i>	Perforate St John's-wort	0	0	0	0
<i>Hypochaeris radicata</i>	Cat's-ear	0	AX	0	0
<i>Hypopitys monotropa</i>	Yellow Bird's-nest	0	AX	0	VC17 Scarce
<i>Ilex aquifolium</i>	Holly	0	AWI AX	0	0
<i>Ilex x altaclerensis</i>	Highclere Holly	LISI	0	0	0
<i>Inula conyza</i>	Ploughman's-spikenard	0	GCI AX	0	0
<i>Iris foetidissima</i>	Stinking Iris	0	AWI AX	0	0
<i>Jacobaea erucifolia</i>	Hoary Ragwort	0	AX	0	0
<i>Jacobaea vulgaris</i>	Common Ragwort	0	0	0	0
<i>Juglans regia</i>	Walnut	0	0	0	0
<i>Juniperus communis</i>	Juniper	0	AX	0	VC17 Declining
<i>Kickxia elatine</i>	Sharp-leaved Fluellen	0	0	0	0
<i>Knautia arvensis</i>	Field Scabious	0	GCI AX	0	0
<i>Lamium album</i>	White Dead-nettle	0	0	0	0
<i>Lamiastrum galeobdolon</i> spp. <i>argentatum</i>	Variegated Yellow Archangel	Sch9	0	0	0
<i>Lapsana communis</i>	Nipplewort	0	0	0	0
<i>Lathyrus latifolius</i>	Broad-leaved Everlasting-pea	0	0	0	0
<i>Lathyrus nissolia</i>	Grass Vetchling	0	GCI AX	0	0
<i>Lathyrus pratensis</i>	Meadow Vetchling	0	GCI AX	0	0
<i>Leontodon hispidus</i>	Rough Hawkbit	0	GCI AX	0	0
<i>Leucanthemum vulgare</i>	Oxeye Daisy	0	GCI	0	0
<i>Leucanthemum x superbum</i>	Shasta Daisy	0	0	0	0
<i>Leycesteria formosa</i>	Himalayan Honeysuckle	0	0	0	0
<i>Ligustrum vulgare</i>	Wild Privet	0	0	0	0
<i>Linaria repens</i>	Pale Toadflax	0	AX	0	VC17 Rare
<i>Linaria vulgaris</i>	Common Toadflax	0	GCI	0	0
<i>Linum catharticum</i>	Fairy Flax	0	GCI AX	0	0
<i>Lolium perenne</i>	Perennial Rye-grass	0	0	0	0
<i>Lonicera periclymenum</i>	Honeysuckle	0	0	0	0

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<i>Lotus corniculatus</i>	Common Bird's-foot-trefoil	0	GCI	0	0
<i>Luzula campestris</i>	Field Wood-rush	0	AX	0	0
<i>Malus domestica</i>	Apple	0	0	0	0
<i>Malva moschata</i>	Musk-mallow	0	0	0	0
<i>Medicago lupulina</i>	Black Medick	0	0	0	0
<i>Melica uniflora</i>	Wood Melick	0	AWI AX	0	0
<i>Mentha arvensis</i>	Corn Mint	0	AX	0	0
<i>Mercurialis perennis</i>	Dog's Mercury	0	0	0	0
<i>Myosotis arvensis</i>	Field Forget-me-not	0	0	0	0
<i>Myosotis sp.</i>	Forget-me-not sp.	0	0	0	0
<i>Neottia ovata</i>	Common Twayblade	0	GCI AX	0	0
<i>Odontites vernus</i>	Red Bartsia	0	GCI	0	0
<i>Ononis repens</i>	Common Restharrow	0	GCI AX	0	0
<i>Ophrys apifera</i>	Bee Orchid	0	GCI AX	0	0
<i>Orchis anthropophora</i>	Man Orchid	0	GCI AX	scarce	VC17 Declining
<i>Origanum vulgare</i>	Wild Marjoram	0	GCI AX	0	0
<i>Paeonia mascula</i>	Peony	0	0	0	0
<i>Papaver rhoeas</i>	Common Poppy	0	0	0	0
<i>Pastinaca sativa</i>	Wild Parsnip	0	GCI	0	0
<i>Pentaglottis sempervirens</i>	Green Alkanet	LISI	0	0	0
<i>Phalaris arundinacea</i>	Reed Canary-grass	0	0	0	0
<i>Phyteuma orbiculare</i>	Round-headed Rampion	0	GCI AX	scarce	VC17 Scarce
<i>Picris hieracioides</i>	Hawkweed Oxtongue	0	GCI AX	0	0
<i>Pilosella aurantiaca</i>	Fox-and-cubs	0	0	0	0
<i>Pilosella officinarum</i>	Mouse-ear-hawkweed	0	GCI AX	0	0
<i>Pimpinella saxifraga</i>	Burnet-saxifrage	0	GCI AX	0	0
<i>Plantago lanceolata</i>	Ribwort Plantain	0	0	0	0
<i>Plantago major</i>	Greater Plantain	0	0	0	0
<i>Plantago media</i>	Hoary Plantain	0	GCI AX	0	0
<i>Platanthera chlorantha</i>	Greater Butterfly-orchid	0	AWI AX	0	VC17 Local & Declining
<i>Poa nemoralis</i>	Wood Meadow-grass	0	AWI AX	0	0
<i>Poa pratensis</i>	Smooth Meadow-grass	0	GCI AX	0	0
<i>Poa trivialis</i>	Rough Meadow-grass	0	0	0	0
<i>Polygala calcarea</i>	Chalk Milkwort	0	GCI AX	0	0
<i>Polygala vulgaris</i>	Common Milkwort	0	GCI AX	0	0

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Scientific name	Common name	Status	Other Notations	GB Notable Plant Register 2020	Surrey Plant Register
<i>Polystichum setiferum</i>	Soft Shield-fern	0	AWI AX	0	0
<i>Potentilla anglica</i>	Trailing Tormentil	0	AX	0	VC17 Local
<i>Potentilla anserina</i>	Silverweed	0	0	0	0
<i>Potentilla reptans</i>	Creeping Cinquefoil	0	0	0	0
<i>Potentilla sterilis</i>	Barren Strawberry	0	AWI GCI AX	0	0
<i>Primula veris</i>	Cowslip	0	GCI AX	0	0
<i>Primula vulgaris</i>	Primrose	0	AWI GCI AX	0	0
<i>Prunella vulgaris</i>	Selfheal	0	0	0	0
<i>Prunus × fruticans</i>	Hybrid Plum	0	0	0	0
<i>Prunus avium</i>	Wild Cherry	0	AWI AX	0	0
<i>Prunus cerasifera</i>	Cherry Plum	0	0	0	0
<i>Prunus laurocerasus</i>	Cherry Laurel	LISI	0	0	0
<i>Prunus spinosa</i>	Blackthorn	0	0	0	0
<i>Pulicaria dysenterica</i>	Common Fleabane	0	0	0	0
<i>Pulmonaria officinalis</i>	Lungwort	0	0	0	0
<i>Pyrus communis</i>	Pear	0	0	0	0
<i>Quercus robur</i>	Pedunculate Oak	0	0	0	0
<i>Ranunculus acris</i>	Meadow Buttercup	0	0	0	0
<i>Ranunculus bulbosus</i>	Bulbous Buttercup	0	GCI AX	0	0
<i>Ranunculus repens</i>	Creeping Buttercup	0	0	0	0
<i>Reseda lutea</i>	Wild Mignonette	0	GCI	0	0
<i>Reynoutria japonica</i>	Japanese Knotweed	Sch9	0	0	0
<i>Rhamnus cathartica</i>	Buckthorn	0	AX	0	0
<i>Rhinanthus angustifolius</i>	Greater Yellow-rattle	Sch8	GCI AX	0	VC17 Scarce
<i>Ribes rubrum</i>	Red Currant	0	AWI AX	0	0
<i>Ribes uva-crispa</i>	Gooseberry	0	0	0	0
<i>Rosa arvensis</i>	Field-rose	0	AWI AX	0	0
<i>Rosa canina</i>	Dog-rose	0	0	0	0
<i>Rosa micrantha</i>	Small-flowered Sweet-briar	0	AX	0	0
<i>Rosa sp.</i>	Rose sp.	0	0	0	0
<i>Rubus fruticosus agg.</i>	Bramble	0	0	0	0
<i>Rubus idaeus</i>	Raspberry	0	0	0	0
<i>Rubus phoenicolasius</i>	Japanese Wineberry	0	0	0	0
<i>Rumex acetosa</i>	Common Sorrel	0	GCI AX	0	0
<i>Rumex crispus</i>	Curled Dock	0	0	0	0
<i>Rumex obtusifolius</i>	Broad-leaved Dock	0	0	0	0

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Scientific name	Common name	Status	Other Notations	GB Notable Plant Register 2020	Surrey Plant Register
<i>Rumex sanguineus</i>	Wood Dock	0	0	0	0
<i>Sagina nodosa</i>	Knotted Pearlwort	0	GCI AX	0	VC17 Rare
<i>Salix caprea</i>	Goat Willow	0	0	0	0
<i>Sambucus nigra</i>	Elder	0	0	0	0
<i>Sanguisorba minor</i> spp. minor	Salad Burnet	0	GCI AX	0	0
<i>Sanicula europaea</i>	Sanicle	0	AWI AX	0	0
<i>Scabiosa columbaria</i>	Small Scabious	0	GCI AX	0	0
<i>Schedonorus giganteus</i>	Giant Fescue	0	AWI AX	0	0
<i>Scorzoneroideis autumnalis</i>	Autumn Hawkbit	0	0	0	0
<i>Scrophularia nodosa</i>	Common Figwort	0	0	0	0
<i>Senecio x albescens</i>	Hybrid Ragwort	0	0	0	0
<i>Silene dioica</i>	Red Campion	0	0	0	0
<i>Silene latifolia</i>	White Campion	0	0	0	0
<i>Silene vulgaris</i>	Bladder Campion	0	0	0	0
<i>Silene x hampeana</i>	Pink Campion	0	0	0	0
<i>Sison amomum</i>	Stone Parsley	0	0	0	0
<i>Soidago juncea</i>	Early Goldenrod	0	0	0	0
<i>Solanum dulcamara</i>	Bittersweet	0	0	0	0
<i>Solidago canadensis</i>	Canadian Goldenrod	0	0	0	0
<i>Sonchus arvensis</i>	Perennial Sow-thistle	0	0	0	0
<i>Sonchus asper</i>	Prickly Sow-thistle	0	0	0	0
<i>Sorbus aria</i>	Whitebeam	0	AX	0	0
<i>Sorbus aucuparia</i>	Rowan	0	0	0	0
<i>Sorbus latifolia</i>	Broad-leaved Whitebeam	0	0	0	0
<i>Sorbus x tomentella</i>	Hybrid Sorbus	0	0	0	0
<i>Stachys sylvatica</i>	Hedge Woundwort	0	0	0	0
<i>Stellaria graminea</i>	Lesser Stitchwort	0	GCI AX	0	0
<i>Stellaria holostea</i>	Greater Stitchwort	0	0	0	0
<i>Stellaria media</i>	Common Chickweed	0	0	0	0
<i>Symphytum grandiflorum</i>	Creeping Comfrey	0	0	0	0
<i>Symphytum 'Hidcote Blue'</i>	Hidcote Comfrey	0	0	0	0
<i>Symphytum x uplandicum</i>	Russian Comfrey	0	0	0	0
<i>Symphytum x uplandicum</i>	Russian Comfrey	0	0	0	0
<i>Tamus communis</i>	Black Bryony	0	AWI AX	0	0
<i>Taraxacum agg.</i>	Dandelion	0	0	0	0
<i>Taxus baccata</i>	Yew	0	0	0	0
<i>Thymus drucei</i>	Wild Thyme	0	GCI AX	0	0

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Scientific name	Common name	Status	Other Notations	GB Notable Plant Register 2020	Surrey Plant Register
<i>Tilia x europaea</i>	Lime	0	0	0	0
<i>Torilis japonica</i>	Upright Hedge-parsley	0	0	0	0
<i>Tragopogon pratensis</i>	Goat's-beard	0	GCI	0	0
<i>Trifolium campestre</i>	Hop Trefoil	0	GCI	0	0
<i>Trifolium dubium</i>	Lesser Trefoil	0	0	0	0
<i>Trifolium pratense</i>	Red Clover	0	0	0	0
<i>Trifolium repens</i>	White Clover	0	0	0	0
<i>Ulmus glabra</i>	Wych Elm	0	AX	0	0
<i>Urtica dioica</i>	Common Nettle	0	0	0	0
<i>Valeriana officinalis</i>	Common Valerian	0	GCI AX	0	0
<i>Verbascum thapsus</i>	Great Mullein	0	GCI	0	0
<i>Verbena officinalis</i>	Vervain	0	GCI	0	0
<i>Veronica chamaedrys</i>	Germander Speedwell	0	0	0	0
<i>Veronica filiformis</i>	Slender Speedwell	0	0	0	0
<i>Veronica officinalis</i>	Heath Speedwell	0	GCI AX	0	0
<i>Viburnum lantana</i>	Wayfaring-tree	0	AX	0	0
<i>Viburnum opulus</i>	Guelder-rose	0	AWI AX	0	0
<i>Vicia sativa</i>	Common Vetch	0	0	0	0
<i>Vicia sepium</i>	Bush Vetch	0	AWI AX	0	0
<i>Vinca minor</i>	Lesser Periwinkle	0	0	0	0
<i>Viola hirta</i>	Hairy Violet	0	AX	0	0
<i>Viola odorata</i>	Sweet Violet	0	0	0	0
<i>Viola riviniana</i>	Common Dog-violet	0	0	0	0

Appendix 5: Scientific names of fauna species referred to in the report

Amphibians

- *Bufo bufo* – Common Toad
- *Lissotriton vulgaris* - Smooth Newt
- *Rana temporaria* - Common Frog
- *Triturus cristatus* – Great Crested Newt

Bats

- *Pipistrellus pipistrellus* - Common Pipistrelle
- *Plecotus auritus* – Brown Long-eared

Birds

- *Troglodytes troglodytes* - Wren
- *Columba palumbus* - Woodpigeon
- *Milvus milvus* - Red Kite
- *Tyto alba* - Barn Owl
- *Falco tinnunculus* - Kestrel
- *Curruca communis* - Whitethroat
- *Alauda arvensis* – Skylark
- *Cuculus canorus* – Cuckoo
- *Passer montanus* – Tree Sparrow
- *Sturnus vulgaris* – Starling
- *Turdus philomelos* – Song Thrush

Mammals (except bats)

- *Erinaceus europaeus* – West European Hedgehog
- *Meles meles* – Eurasian Badger
- *Micromys minutus* – Harvest Mouse
- *Muscardinus avellanarius* – Hazel Dormouse
- *Mustela erminea* - Stoat
- *Mustela putorius* - Polecat
- *Sorex minutus* - Pigmy Shrew

Reptiles

- *Anguis fragilis* – Slow-worm
- *Natrix helvetica* – Grass Snake
- *Vipera berus* – Adder
- *Zootoca vivipara* – Common Lizard

Invertebrates

- *Cupido minimus* - Small Blue
- *Helix pomatia* - Roman Snail

- *Hesperia comma* - Silver-spotted Skipper
- *Lucanus cervus* - Stag Beetle
- *Polyommatus coridon* - Chalk-hill Blue
- *Satyrrium w-album* - White-letter Hairstreak
- *Thecla betulae* - Brown Hairstreak

Appendix 6: Habitat condition forms

Habitat	Compartment number	Condition	Justification (Parks, et al., Biodiversity Metric 3.0: Auditing and Accounting for Biodiversity: Technical Supplement , 2021b)
<p>Habitat Code: G2a - Lowland calcareous grassland</p> <p>Additional Codes: 11 - Scattered trees, 13 - Scattered dwarf shrubs</p>	1.1	Good	<ol style="list-style-type: none"> 1. The grassland is a good representation of the habitat type it has been identified as, based on its UKHab description - the appearance and composition of the vegetation closely matches the characteristics of the specific grassland habitat type. Indicator species listed by UKHab for the specific grassland habitat type are consistently present - Pass 2. Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20 per cent is more than 7 cm) creating microclimates which provide opportunities for insects, birds and small mammals to live and breed. – Pass 3. Cover of bare ground between 1% and 5%, including localised areas, for example, rabbit warrens. – Pass 4. Cover of Bracken less than 20% and cover of scrub (including Bramble) less than 5%.– Pass 5. Combined cover of species indicative of sub-optimal condition and physical damage (such as excessive poaching, damage from machinery use or storage, damaging levels of access, or any other damaging management activities) accounts for less than 5% of total area. If any invasive non-native plant species (as listed on Schedule 9 of WCA4) are present, this criterion is automatically failed. - Pass 6. There are 10 or more vascular plant species per m2 present, including forbs that are characteristic of the habitat type. – Pass
<p>Habitat Code: G2a - Lowland calcareous grassland</p> <p>Additional Codes: 10 - Scattered scrub</p>	1.3	Poor	<ol style="list-style-type: none"> 1. The grassland is a good representation of the habitat type it has been identified as, based on its UKHab description - the appearance and composition of the vegetation closely matches the characteristics of the specific grassland habitat type. Indicator species listed by UKHab for the specific grassland habitat type are consistently present - Fail 2. Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20 per cent is more than 7 cm) creating microclimates which provide opportunities for insects, birds and small mammals to live and breed. – Fail

Habitat	Compartment number	Condition	Justification (Panks, et al., Biodiversity Metric 3.0: Auditing and Accounting for Biodiversity: Technical Supplement , 2021b)
			<ol style="list-style-type: none"> 3. Cover of bare ground between 1% and 5%, including localised areas, for example, rabbit warrens. – Pass 4. Cover of Bracken less than 20% and cover of scrub (including Bramble) less than 5%.– Fail 5. Combined cover of species indicative of sub-optimal condition and physical damage (such as excessive poaching, damage from machinery use or storage, damaging levels of access, or any other damaging management activities) accounts for less than 5% of total area. If any invasive non-native plant species (as listed on Schedule 9 of WCA4) are present, this criterion is automatically failed. - Pass 6. There are 10 or more vascular plant species per m2 present, including forbs that are characteristic of the habitat type. – Pass
<p>Habitat Code: g2a - Lowland calcareous grassland</p>	<p>1.6</p>	<p>Good</p>	<ol style="list-style-type: none"> 1. The grassland is a good representation of the habitat type it has been identified as, based on its UKHab description - the appearance and composition of the vegetation closely matches the characteristics of the specific grassland habitat type. Indicator species listed by UKHab for the specific grassland habitat type are consistently present - Pass 2. Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20 per cent is more than 7 cm) creating microclimates which provide opportunities for insects, birds and small mammals to live and breed. – Pass 3. Cover of bare ground between 1% and 5%, including localised areas, for example, rabbit warrens. – Pass 4. Cover of Bracken less than 20% and cover of scrub (including Bramble) less than 5%.– Pass 5. Combined cover of species indicative of sub-optimal condition and physical damage (such as excessive poaching, damage from machinery use or storage, damaging levels of access, or any other damaging management activities) accounts for less than 5% of total area. If any invasive non-native plant species (as listed on Schedule 9 of WCA4) are present, this criterion is automatically failed. - Pass

Habitat	Compartment number	Condition	Justification (Panks, et al., Biodiversity Metric 3.0: Auditing and Accounting for Biodiversity: Technical Supplement , 2021b)
			6. There are 10 or more vascular plant species per m2 present, including forbs that are characteristic of the habitat type. – Pass
Habitat Code: W1f - Lowland mixed deciduous woodland	2.1	Moderate	<ol style="list-style-type: none"> 1. Good (3) - Three age classes present 2. Good (3) - No significant browsing damage evident in woodland(2). 3. Poor (1) - Rhododendron or Laurel present, or other invasive species > 10% cover. 4. Good (3) - Five or more native tree or shrub species found across woodland parcel. 5. Good (3) - > 80% of canopy trees and >80% of understory shrubs are native. 6. Good (3) - 10 – 20% of woodland has areas of temporary open space, unless woodland is <10ha in which case lower threshold of 10% does not apply. 7. Good (3) - All three classes present in woodland; trees 4-7cm dbh, saplings and seedlings or advanced coppice regrowth. 8. Moderate (2) - 11% to 25% mortality and/or crown dieback or low risk pest or disease present. 9. Moderate (2) - Recognisable NVC plant community present. 10. Good (3) - Three or more storeys across all survey plots or a complex woodland. 11. Poor (1) - No veteran trees present in woodland. 12. Moderate (2) - Between 25% and 50% of all survey plots within the woodland parcel have deadwood, such as standing deadwood, large dead branches and or stems, stubs and stumps, or an abundance of small cavities. 13. Good (3) - No nutrient enrichment or damaged ground evident.
Habitat Code: W1f - Lowland mixed deciduous woodland	2.2, 2.3 and 2.4	Moderate	<ol style="list-style-type: none"> 1. Moderate (2) - Two age classes present 2. Good (3) - No significant browsing damage evident in woodland(2). 3. Moderate (2) - Rhododendron or Laurel not present, other invasive species < 10% cover. 4. Good (3) - Five or more native tree or shrub species found across woodland parcel. 5. Good (3) - > 80% of canopy trees and >80% of understory shrubs are native. 6. Good (3) - 10 – 20% of woodland has areas of temporary open space, unless woodland is <10ha in which case lower threshold of 10% does not apply. 7. Moderate (2) - One or two classes only present in woodland.

Habitat	Compartment number	Condition	Justification (Panks, et al., Biodiversity Metric 3.0: Auditing and Accounting for Biodiversity: Technical Supplement , 2021b)
			<ul style="list-style-type: none"> 8. Moderate (2) - 11% to 25% mortality and/or crown dieback or low risk pest or disease present. 9. Poor (1) - No recognisable NVC community. 10. Moderate (2) - Two storeys across all survey plots. 11. Poor (1) - No veteran trees present in woodland. 12. Between 25% and 50% of all survey plots within the woodland parcel have deadwood, such as standing deadwood, large dead branches and or stems, stubs and stumps, or an abundance of small cavities. 13. Good (3) - No nutrient enrichment or damaged ground evident.
<p>Habitat Code: w1g7 - other woodland; broadleaved</p>	<p>2.5</p>	<p>Moderate</p>	<ul style="list-style-type: none"> 1. Moderate (2) - Two age classes present 2. Good (3) - No significant browsing damage evident in woodland(2). 3. Good (3) – No invasive species present in woodland 4. Poor (1) – Two or less native tree or shrub species across woodland parcel 5. Good (3) - > 80% of canopy trees and >80% of understory shrubs are native. 6. Good (3) - 10 – 20% of woodland has areas of temporary open space, unless woodland is <10ha in which case lower threshold of 10% does not apply. 7. Moderate (2) - One or two classes only present in woodland. 8. Good (3) – Tree mortality less than 10%, no pests or diseases and no crown dieback 9. Poor (1) - No recognisable NVC community. 10. Poor (1) – One or less storey across all survey plots 11. Poor (1) - No veteran trees present in woodland. 12. Poor (1) - Less than 25% of all survey plots within the woodland parcel have deadwood, such as standing deadwood, large dead branches and or stems, stubs and stumps, or an abundance of small cavities. 13. Good (3) - No nutrient enrichment or damaged ground evident.
<p>Habitat Code: H3h - Mixed scrub</p>	<p>3.1</p>	<p>Good</p>	<ul style="list-style-type: none"> 1. The scrub is a good representation of the habitat type it has been identified as, based on its UKHab description (where in its natural range). The appearance and composition of the vegetation closely matches the characteristics of the specific scrub type. At least 80% of scrub is native, and there are at least three native woody

Habitat	Compartment number	Condition	Justification (Panks, et al., Biodiversity Metric 3.0: Auditing and Accounting for Biodiversity: Technical Supplement , 2021b)
			<p>species1, with no single species comprising more than 75% of the cover (except Hazel, Common Juniper, Sea Buckthorn or Box, which can be up to 100% cover). - Pass</p> <p>2. Seedlings, saplings, young shrubs and mature (or ancient or veteran) shrubs are all present. - Pass</p> <p>3. There is an absence of invasive non-native plant species3 (as listed on Schedule 9 of WCA4) and species indicative of sub-optimal condition5 make up less than 5% of ground cover. - Pass</p> <p>4. The scrub has a well-developed edge with scattered scrub and tall grassland and or forbs present between the scrub and adjacent habitat. - Pass</p> <p>5. There are clearings, glades or rides present within the scrub, providing sheltered edges. - Pass</p>
<p>Habitat Code: G2a - Lowland calcareous grassland</p>	<p>1.2, 1.4, 1.5</p>	<p>Good</p>	<p>1. The grassland is a good representation of the habitat type it has been identified as, based on its UKHab description - the appearance and composition of the vegetation closely matches the characteristics of the specific grassland habitat type. Indicator species listed by UKHab for the specific grassland habitat type are consistently present - Pass</p> <p>2. Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20 per cent is more than 7 cm) creating microclimates which provide opportunities for insects, birds and small mammals to live and breed. – Pass</p> <p>3. Cover of bare ground between 1% and 5%, including localised areas, for example, rabbit warrens. – Pass</p> <p>4. Cover of Bracken less than 20% and cover of scrub (including Bramble) less than 5%.– Pass</p> <p>5. Combined cover of species indicative of sub-optimal condition and physical damage (such as excessive poaching, damage from machinery use or storage, damaging levels of access, or any other damaging management activities) accounts for less than 5% of total area. If any invasive non-native plant species (as listed on Schedule 9 of WCA4) are present, this criterion is automatically failed. - Pass</p>

Habitat	Compartment number	Condition	Justification (Parks, et al., Biodiversity Metric 3.0: Auditing and Accounting for Biodiversity: Technical Supplement , 2021b)
			6. There are 10 or more vascular plant species per m2 present, including forbs that are characteristic of the habitat type. – Pass

Appendix 7: Relevant legislation

Legislation

Metropolitan Commons 1866 and Metropolitan Commons (Banstead) Supplementary Act 1893

This Act covers the four commons; Banstead Downs, Banstead Heath, Burgh Heath and Park Downs. It gives power to the Banstead Commons Conservators to frame byelaws for the commons. The Board of Conservators was set up in 1893. There are eight members on the board, two appointed by the 'owners of the soil', which today is Reigate and Banstead Borough Council, and six elected by 'the vestry of the Parish of Banstead' which today is Reigate and Banstead Borough Council. Conservators serve a term of three years.

The election of new Conservators is managed by Reigate and Banstead Borough Council Democratic Services. The process commences in December and elections take place at the March Executive Meeting each year.

Conservation of Habitats and Species Regulations 2017 (as amended)

Provides for the protection of Natura 2000 sites (SACs, SPAs and Ramsar sites), European Protected Species and habitats. European Protected Species are protected from:

- Deliberate capture, injury or killing
- Deliberate disturbance of a European Protected Species, such that it impairs their ability to breed, reproduce or rear their young, hibernate or migrate or significantly affect their local distribution or abundance
- Deliberately take or destroy effect
- Damage or destroy a breeding site or resting place.
- Keep, transport, sell or exchange any live, dead or part of a European Protected Species

European Protected Species include, but are not limited to:

- Great Crested Newt
- All bat species
- Hazel Dormouse

Wildlife and Countryside Act 1981 (as amended)

Key piece of legislation consolidating existing wildlife legislation to incorporate the requirements of the Bern Convention and Birds Directive. It includes additional protection measures for species listed under the Conservation of Habitats and Species Regulations 2017 (as amended) and includes a list of species protected under the Act. It also provides for the designation and protection of Sites of Special Scientific Interest (SSSI).

Development which would adversely affect a SSSI is not acceptable except only in special cases, where the importance of a development outweighs the impact on the SSSI when planning conditions or obligations would be used to mitigate the impact. Developments likely to impact on a SSSI will likely require an Environmental Impact Assessment (EIA).

Further information on specific legislation relating to species protected under the Wildlife and Countryside Act 1981 (as amended) is detailed below, under Protection of Protected Species and Habitats.

Environment Act (2021)

The Environment Act (2021) makes a provision for biodiversity net gain to be a condition of planning permission in England. Planning applications will need to demonstrate a 10% biodiversity net gain can be met.

Countryside and Rights of Way Act 2000

Amends and strengthens the Wildlife and Countryside Act 1981 (as amended). It also details habitats and species for which conservation measures should be promoted.

Natural Environment and Rural Communities Act 2006

Section 40 of the Act places a duty on local planning authorities to conserve and enhance biodiversity in England whilst carrying out their normal functions. Section 41 comprises a list of Habitats of Principal Importance (HPIs) and Species of Principal Importance (SPIs) which should be considered.

The LPA will need to have particular regard to any relevant local nature recovery strategies, and any relevant species conservation strategy or protected site strategy prepared by Natural England.

Hedgerows Regulations 1997

Under these regulations it is an offence to intentionally remove, or cause or permit another person to remove, a hedgerow. Important hedgerows are defined in Section 4 of the Regulations. This includes hedgerows that have existed for over 30 years or satisfies at least one criterion listed in Part II of Schedule 1.

Wild Mammals (Protection) Act 1996

Under this act wild mammals are protected from the intentional unnecessary suffering by crushing and asphyxiation.

Biodiversity Opportunity Areas (BOAs)

In order to assist in delivering the government's Biodiversity 2020 strategy, the Surrey Nature Partnership has identified seven BOAs where improved habitat management, habitat restoration and recreation of HPIs is the key focus to enhancing the connectivity of habitats for SPIs to deliver biodiversity objectives at a landscape scale. The location of these is presented in the South East Biodiversity Strategy's website. The project promotes a collaborative approach across a number of regional and local organisations.

Management of sites within or adjacent to BOAs should be designed in consideration of the BOA objectives, which are provided at:

- <https://surreynaturepartnership.org.uk/our-work/>

Protection of protected species and habitats

Amphibians

Reptiles

Adder, Grass Snake, Common Lizard and Slow-worm are all protected from killing and injury under the Wildlife and Countryside Act 1981 (as amended). All UK reptile species are SPIs.

Birds

All wild birds are protected under the Wildlife and Countryside Act 1981 (as amended). This includes damage and destruction of their nests whilst in use, or construction. Species listed

under Schedule 1 of the Act, such as Barn Owl, are afforded protection from disturbance during the nesting season. 50 bird species are listed as SPIs.

Badger

Badger is protected under the Protection of Badgers Act 1992. Under this legislation it is an offence to kill or injure a badger; to damage, destroy or block access to a badger sett; or to disturb badger in its sett. The Act also states the conditions for the Protection of Badgers licence requirements.

Bats

All bat species are protected under the Conservation of Habitats and Species Regulations 2017 (as amended), as detailed above. Bats are further protected under the Wildlife and Countryside Act 1981 (as amended), making it an offence to:

- Deliberately or recklessly damage or destroy any structure or place which bat(s) use for shelter or protection
- Disturb bat(s) while occupying a structure or place which it uses for shelter or protection
- Obstruct access to any structure or place which they use for shelter or protection

Furthermore, seven bat species are SPIs, covered under Section 41 of the NERC Act 2006. These include western Barbastelle, Bechstein's, Noctule, Soprano Pipistrelle, Brown Long-eared, Lesser Horseshoe and Greater Horseshoe.

Hazel Dormouse

Hazel Dormouse is protected under the Conservation of Habitats and Species Regulations 2017 (as amended). It is afforded additional protection under the Wildlife and Countryside Act 1981 (as amended), including obstruction to a place of shelter or rest.

Hazel Dormouse is also a SPI.

Hedgerow

Under the Hedgerows Regulations 1997 it is against the law to remove or destroy certain hedgerows without permission from the LPA, which are also the enforcement body for offences created by the Regulations. LPA permission is normally required before removing hedges that are at least 20 m in length, more than 30 years old and contain certain plant species. The authority will assess the importance of the hedgerow using criteria set out in the regulations. The regulations **do not** apply to hedgerows within the curtilage of, or marking a boundary of the curtilage of, a dwelling house.

Hedgerow is a HPI.

Other mammals

West European Hedgehog, Harvest Mouse and Polecat are all SPIs.

Invertebrates

Fifty-six terrestrial and freshwater invertebrate species are listed under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended).

A total of 398 invertebrates are Species of Principal Importance.

Non-native invasive plant species

Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) is a list of non-native plant species for which Section 14 of the Act applies. It is an offence to plant, or otherwise cause to grow in the wild any plant which is included in Part 2 of Schedule 9 of the act.

Habitats of Principal Importance

Section 41 of the NERC Act 2006 details 56 HPs, of which the following could be present in south-east England: Lowland calcareous grassland, Lowland dry acid grassland, Lowland meadows, Lowland Heathland, Open Mosaic Habitats on Previously Developed Land, Lowland fens, Lowland raised bog, Reedbeds, Lowland beech and yew woodland, Lowland mixed deciduous woodland and Wet woodland.

Impacts to HPI are of material planning consideration.

Appendix 8: Protected species and species of conservation concern desk study results (SBIC, 2023)

Records from site

Scientific name	Common Name	Habitat Regulations ²³	WCA ⁴	SPI ⁵	RDL/ Nationally Rare/ Scarce ⁶	BoCC ⁷	Ax	AWI	GI	Relevant HPI
Invertebrates										
<i>Lucanus cervus</i>	Stag Beetle		Sch 5 Section 9.5a	✓	✓					Various, Wood pasture & parkland
<i>Erynnis tages</i>	Dingy Skipper			✓	✓					Calcareous grassland, Mixed deciduous woodland
<i>Pyrgus malvae</i>	Grizzled Skipper			✓	✓					Calcareous grassland, Mixed deciduous woodland
<i>Coenonympha pamphilus</i>	Small Heath			✓	✓					Heathland, Acid Grassland, Calcareous grassland
<i>Satyrrium w-album</i>	White-letter Hairstreak		Sch 5 Section 9.5a	✓	✓					Mixed deciduous woodland, Hedgerows
<i>Thecla betulae</i>	Brown Hairstreak		Sch 5 Section 9.5a	✓	✓					Hedgerows, Mixed deciduous woodland
<i>Ecliptopera silaceata</i>	Small Phoenix			✓						Mixed deciduous woodland
<i>Tyria jacobaeae</i>	Cinnabar			✓						
<i>Acronicta rumicis</i>	Knot Grass			✓						Various
<i>Tholera decimalis</i>	Feathered Gothic			✓						Various
<i>Eugnorisma glareosa</i>	Autumnal Rustic			✓						Various
<i>Cupido minimus</i>	Small Blue		Sch 5 Section 9.5a	✓	✓					Calcareous grassland
<i>Helix (Helix) pomatia</i>	Roman Snail		Sch 5 Section 9.1(kill/injuring/taking), 9.2, 9.5a		✓					Calcareous grassland
<i>Marpissa muscosa</i>	Fencepost Jumping Spider				✓					Various
<i>Hippodamia variegata</i>	Adonis' Ladybird				✓					
<i>Variimorda villosa</i>	A tumbling beetle				✓					Mixed deciduous woodland, Wood pasture & parkland
<i>Poecilium alni</i>	A longhorn beetle				✓					
<i>Chrysolina sturmi</i>	A leaf beetle				✓					Various
<i>Cryptocephalus hypochaeridis</i>	A pot beetle				✓					Calcareous grassland
<i>Longitarsus anchusae</i>	A leaf beetle				✓					Calcareous grassland
<i>Callicera aurata</i>	Green Callicera				✓					Wood pasture & parkland
<i>Osmia bicolor</i>	Red-tailed Mason Bee				✓					Calcareous grassland
<i>Hesperia comma</i>	Silver-spotted Skipper		Sch 5 Section 9.5a		✓					Calcareous grassland
<i>Polyommatus coridon</i>	Chalk Hill Blue		Sch 5 Section 9.5a		✓					
<i>Gomphocerippus rufus</i>	Rufous Grasshopper				✓					Calcareous grassland
Birds										
<i>Troglodytes troglodytes</i>	Wren					Amber				
<i>Columba palumbus</i>	Wood Pigeon					Amber				
<i>Turdus philomelos</i>	Song Thrush					Amber				Various
Plants										
<i>Hyacinthoides non-scripta</i>	Bluebell		Sch 8				✓	✓		

² Conservation of Habitats and Species Regulations 2017

³ Sch = Schedule

⁴ Wildlife and Countryside Act 1981, as amended

⁵ Species of Principle Importance

⁶ Species listed on the IUCN Red data list

⁷ Birds of Conservation Concern

Scientific name	Common Name	Habitat Regulations ²³	WCA ⁴	SPI ⁵	RDL/Nationally Rare/Scarce ⁶	BoCC ⁷	Ax	AWI	GI	Relevant HPI
<i>Sanicula europaea</i>	Sanicle				✓		✓	✓		
<i>Cruciata laevipes</i>	Crosswort				✓		✓			
<i>Oxalis acetosella</i>	Wood-sorrel				✓		✓	✓		
<i>Fragaria vesca</i>	Wild Strawberry				✓		✓		✓	
<i>Potentilla erecta</i>	Tormentil				✓		✓		✓	
<i>Rubus britannicus</i>	A Bramble				✓					
<i>Orchis anthropophora</i>	Man Orchid			✓	✓		✓		✓	
<i>Euphrasia pseudokernerii</i>	Chalk Eyebright			✓	✓		✓		✓	
<i>Juniperus communis</i>	Juniper			✓	✓		✓			
<i>Rhinanthus angustifolius</i>	Greater Yellow-rattle		Sch 8		✓		✓		✓	
<i>Platanthera chlorantha</i>	Greater Butterfly-orchid				✓		✓	✓		
<i>Campanula rotundifolia</i>	Harebell				✓		✓		✓	
<i>Phyteuma orbiculare</i>	Round-headed Rampion				✓		✓		✓	
<i>Sagina nodosa</i>	Knotted Pearlwort				✓		✓		✓	
<i>Knautia arvensis</i>	Field Scabious				✓		✓		✓	
<i>Gentianella amarella</i>	Autumn Gentian				✓		✓		✓	
<i>Mentha arvensis</i>	Corn Mint				✓		✓			
<i>Euphrasia nemorosa</i>	Common Eyebright				✓		✓		✓	
<i>Plantago media</i>	Hoary Plantain				✓		✓		✓	
<i>Veronica officinalis</i>	Heath Speedwell				✓		✓		✓	
<i>Helianthemum nummularium</i>	Common Rock-rose				✓		✓		✓	
<i>Briza media</i>	Quaking-grass				✓		✓		✓	
<i>Helleborus foetidus</i>	Stinking Hellebore				✓		✓			
Invasive non-native										
<i>Reynoutria japonica</i>	Japanese Knotweed		Sch 9 Part 2							
<i>Rhododendron ponticum</i>	Rhododendron		Sch 9 Part 2 (England & Wales only)							
<i>Parthenocissus quinquefolia</i>	Virginia Creeper		Sch 9 Part 2 (England & Wales only)							
<i>Sciurus carolinensis</i>	Eastern Grey Squirrel		Sch 9 Part 1							Broadleaved woodland; Urban and gardens; Coniferous woodland

Additional records from within 1 km of site

Scientific name	Common Name	Habitat Regulations	WCA	SPI	RDL/Nationally Rare/Scarce	BoCC	Ax	AWI	GI	Relevant HPI
Invertebrates										
<i>Limenitis camilla</i>	White Admiral			✓	✓					Mixed deciduous woodland
<i>Thecla betulae</i>	Brown Hairstreak		Sch 5 Section 9.5a	✓	✓					Hedgerows, Mixed deciduous woodland
<i>Erynnis tages</i>	Dingy Skipper			✓	✓					Calcareous grassland, Mixed deciduous woodland
<i>Pyrgus malvae</i>	Grizzled Skipper			✓	✓					Calcareous grassland, Mixed deciduous woodland
<i>Coenonympha pamphilus</i>	Small Heath			✓	✓					Heathland, Acid Grassland, Calcareous grassland

Scientific name	Common Name	Habitat Regulations	WCA	S PI	RDL/ Nation ally Rare/ Scarce	Bo CC	A x	A WI	G I	Relevant HPI
<i>Tyria jacobaeae</i>	Cinnabar			✓						
<i>Lucanus cervus</i>	Stag Beetle		Sch 5 Section 9.5a	✓	✓					Various, Wood pasture & parkland
<i>Satyrrium w-album</i>	White-letter Hairstreak		Sch 5 Section 9.5a	✓	✓					Mixed deciduous woodland, Hedgerows
<i>Cupido minimus</i>	Small Blue		Sch 5 Section 9.5a	✓	✓					Calcareous grassland
<i>Ennomos fuscantaria</i>	Dusky Thorn			✓						Mixed deciduous woodland
<i>Melanthia procellata</i>	Pretty Chalk Carpet			✓						Calcareous grassland
<i>Tholera decimalis</i>	Feathered Gothic			✓						Various
<i>Atethmia centrigo</i>	Centre-barred Sallow			✓						Various
<i>Helix (Helix) pomatia</i>	Roman Snail		Sch 5 Section 9.1(kill/injuring/taking), 9.2, 9.5a		✓					Calcareous grassland
<i>Lasioglossum malachurum</i>	Sharp-collared Furrow Bee				✓					Various
<i>Mordellistena neuwaldeggiana</i>	A tumbling beetle				✓					Mixed deciduous woodland, Wood pasture & parkland
<i>Corticeus bicolor</i>	A darkling beetle				✓					Hedgerows
<i>Platyrhinus resinosus</i>	Cramp-ball Fungus Weevil				✓					
<i>Taphrorychus bicolor</i>	A true weevil				✓					
<i>Lasius brunneus</i>	Brown Tree Ant				✓					Wood pasture & parkland
<i>Apatura iris</i>	Purple Emperor		Sch 5 Section 9.5a		✓					Mixed deciduous woodland
<i>Polyommatus coridon</i>	Chalk Hill Blue		Sch 5 Section 9.5a		✓					
<i>Gomphocerippus rufus</i>	Rufous Grasshopper				✓					Calcareous grassland
<i>Henia vesuviana</i>	A centipede				✓					
<i>Lithobius (Lithobius) muticus</i>	A centipede				✓					
<i>Opilo mollis</i>	A checkered beetle				✓					Various
<i>Nephus quadrimaculatus</i>	A ladybird				✓					
<i>Hesperia comma</i>	Silver-spotted Skipper		Sch 5 Section 9.5a		✓					Calcareous grassland
<i>Platynaspis luteorubra</i>	A ladybird				✓					
<i>Cryptocephalus hypochaeridis</i>	A pot beetle				✓					Calcareous grassland
<i>Podagrica fuscicornis</i>	A leaf beetle				✓					Calcareous grassland
<i>Mitoplinthus caliginosus</i>	Hop Root Weevil				✓					
<i>Asiraca clavicornis</i>	A planthopper				✓					
<i>Hippodamia variegata</i>	Adonis' Ladybird				✓					
<i>Rhopalus (Rhopalus) parumpunctatus</i>	A scentless plant bug				✓					Heathland, Acid grassland
Amphibians										
<i>Bufo bufo</i>	Common Toad		Sch 5 Section 9.5a	✓	✓					Various wetlands
<i>Rana temporaria</i>	Common Frog		Sch 5 Section 9.5a							
<i>Lissotriton vulgaris</i>	Smooth Newt		Sch 5 Section 9.5a							
Reptiles										

Scientific name	Common Name	Habitat Regulations	WCA	S PI	RDL/ Nation ally Rare/ Scarce	Bo CC	A x	A WI	G I	Relevant HPI
<i>Anguis fragilis</i>	Slow-worm		Sch 5 Section 9.1(kill/injuring), 9.5a	✓						Various
<i>Zootoca vivipara</i>	Common Lizard		Sch 5 Section 9.1(kill/injuring), 9.5a	✓						Various
Birds										
<i>Emberiza citrinella</i>	Yellowhammer			✓		Red				Hedgerows, Arable field margins, Heathland
<i>Vanellus vanellus</i>	Northern Lapwing			✓	✓	Red				Floodplain grazing marsh, Standing water, Arable field margins
<i>Streptopelia turtur</i>	Turtle Dove			✓	✓	Red				Wood-pasture & parkland, Hedgerows
<i>Cuculus canorus</i>	Common Cuckoo			✓	✓	Red				Various
<i>Alauda arvensis</i>	Skylark			✓		Red				Calcareous & Acid grassland, Arable field margins
<i>Acanthis cabaret</i>	Lesser Redpoll			✓		Red				Woodland
<i>Coccothraustes coccothraustes</i>	Hawfinch			✓	✓	Red				Mixed deciduous/Beech & yew woodland
<i>Locustella naevia</i>	Grasshopper Warbler			✓		Red				
<i>Anthus trivialis</i>	Tree Pipit			✓		Red				Heathland
<i>Muscicapa striata</i>	Spotted Flycatcher			✓		Red				Wood-pasture & parkland, Mixed deciduous woodland
<i>Passer domesticus</i>	House Sparrow			✓		Red				Urban, Hedgerows
<i>Passer montanus</i>	Tree Sparrow			✓	✓	Red				
<i>Phylloscopus sibilatrix</i>	Wood Warbler			✓	✓	Red				Mixed deciduous/Beech & yew woodland
<i>Turdus torquatus</i>	Ring Ouzel			✓	✓	Red				
<i>Milvus milvus</i>	Red Kite		Sch 1 Part 1							Mixed deciduous woodland
<i>Tyto alba</i>	Barn Owl		Sch 1 Part 1							Various
<i>Prunella modularis</i>	Dunnock					Amb er				Various
<i>Troglodytes troglodytes</i>	Wren					Amb er				
<i>Circus aeruginosus</i>	Marsh Harrier		Sch 1 Part 1		✓	Amb er				
<i>Circus pygargus</i>	Montagu's Harrier		Sch 1 Part 1		✓	Red				Various
<i>Pandion haliaetus</i>	Osprey		Sch 1 Part 1		✓	Amb er				
<i>Limosa lapponica</i>	Bar-tailed Godwit					Amb er				
<i>Falco peregrinus</i>	Peregrine Falcon		Sch 1 Part 1							
<i>Falco subbuteo</i>	Hobby		Sch 1 Part 1							Heathland, Mixed deciduous woodland
<i>Falco tinnunculus</i>	Common Kestrel				✓	Amb er				Various
<i>Acanthis flammea</i>	Redpoll				✓	Red				Woodland
<i>Chloris chloris</i>	Greenfinch				✓	Red				
<i>Fringilla montifringilla</i>	Brambling		Sch 1 Part 1							
<i>Linaria cannabina</i>	Linnet				✓	Red				Heathland, Hedgerows, Arable field margins
<i>Loxia curvirostra</i>	Common Crossbill		Sch 1 Part 1							Heathland
<i>Delichon urbicum</i>	House Martin				✓	Red				Urban, Standing water

Banstead Commons Conservators

Scientific name	Common Name	Habitat Regulations	WCA	S PI	RDL/ Nationally Rare/ Scarce	Bo CC	A x	A WI	G I	Relevant HPI
<i>Anthus pratensis</i>	Meadow Pipit					Amb er				Heathland, Acid grassland, Meadows
<i>Motacilla cinerea</i>	Grey Wagtail				✓	Amb er				Rivers, Standing water
<i>Motacilla flava</i>	Yellow Wagtail				✓	Red				
<i>Oenanthe oenanthe</i>	Northern Wheatear					Amb er				
<i>Phoenicurus phoenicurus</i>	Common Redstart					Amb er				
<i>Saxicola rubetra</i>	Whinchat				✓	Red				
<i>Poecile palustris</i>	Marsh Tit				✓	Red				Mixed deciduous woodland
<i>Regulus ignicapilla</i>	Firecrest		Sch 1 Part 1							Mixed deciduous/Beech & yew woodland
<i>Turdus iliacus</i>	Redwing		Sch 1 Part 1		✓	Amb er				Various
<i>Turdus pilaris</i>	Fieldfare		Sch 1 Part 1		✓	Red				Various
<i>Dryobates minor</i>	Lesser Spotted Woodpecker				✓	Red				Mixed deciduous/Wet woodland, Wood-pasture & parkland
<i>Strix aluco</i>	Tawny Owl				✓	Amb er				Mixed deciduous woodland, Wood-pasture & parkland
<i>Accipiter nisus</i>	Eurasian Sparrowhawk				✓	Amb er				
<i>Turdus philomelos</i>	Song Thrush					Amb er				Various
<i>Anas platyrhynchos</i>	Mallard				✓	Amb er				
<i>Anser anser</i>	Greylag Goose		Sch 1 Part 2			Amb er				Various wetlands
<i>Apus apus</i>	Common Swift				✓	Red				Urban
<i>Chroicocephalus ridibundus</i>	Black-headed Gull				✓	Amb er				
<i>Larus argentatus</i>	Herring Gull				✓	Red				Various
<i>Larus canus</i>	Common Gull					Amb er				Standing water, Rivers
<i>Larus fuscus</i>	Lesser Black-backed Gull					Amb er				
<i>Larus glaucoides</i>	Iceland Gull				✓	Amb er				
<i>Larus marinus</i>	Great Black-backed Bull				✓	Amb er				Standing water, Rivers
<i>Gallinago gallinago</i>	Common Snipe				✓	Amb er				
<i>Scolopax rusticola</i>	Woodcock				✓	Red				Mixed deciduous/Wet woodland
<i>Ardea cinerea</i>	Grey Heron				✓					
<i>Columba oenas</i>	Stock Dove					Amb er				
<i>Columba palumbus</i>	Wood Pigeon					Amb er				

Scientific name	Common Name	Habitat Regulations	WCA	S PI	RDL/ Nationally Rare/ Scarce	Bo CC	A x	A WI	G I	Relevant HPI
<i>Streptopelia decaocto</i>	Collared Dove				✓					
<i>Acrocephalus schoenobaenus</i>	Sedge Warbler					Amb er				
<i>Corvus frugilegus</i>	Rook				✓	Amb er				
<i>Pyrrhula pyrrhula</i>	Bullfinch					Amb er				
<i>Ficedula hypoleuca</i>	Pied Flycatcher				✓	Amb er				
<i>Phylloscopus trochilus</i>	Willow Warbler					Amb er				Heathland, Wet woodland
<i>Sturnus vulgaris</i>	Common Starling				✓	Red				Urban
<i>Curruca communis</i>	Common Whitethroat					Amb er				
<i>Turdus viscivorus</i>	Mistle Thrush				✓	Red				Mixed deciduous woodland, Wood-pasture & parkland
<i>Phalacrocorax carbo</i>	Great Cormorant				✓					
Mammals										
<i>Erinaceus europaeus</i>	West European Hedgehog			✓	✓					Urban and gardens; Improved grassland; Arable and horticulture; Broadleaved woodland; Coniferous woodland; Unimproved grassland
<i>Plecotus auritus</i>	Brown Long-eared Bat	Sch 2	Sch 5 Section 9.4b-c, 9.5a	✓						Various
<i>Chiroptera</i>	A bat	Sch 2	Sch 5 Part 9.4b, 9.4c, 9.5, Sch 6							
<i>Mustela erminea</i>	Stoat		Sch 6ZA							
<i>Pipistrellus pipistrellus</i>	Common Pipistrelle	Sch 2	Sch 5 Section 9.4b-c, 9.5a							
<i>Sorex minutus</i>	Eurasian Pygmy Shrew		Sch 6							Unimproved grassland; Improved grassland; Bog; Broadleaved woodland; Urban and gardens; Dwarf shrub heath; Fen, marsh and swamp; Hedgerows
Plants										
<i>Cephalanthera damasonium</i>	White Helleborine			✓	✓		✓			
<i>Ophrys insectifera</i>	Fly Orchid			✓	✓		✓			
<i>Ajuga chamaepitys</i>	Ground-pine		Sch 8	✓	✓		✓		✓	
<i>Euphrasia pseudokernerii</i>	Chalk Eyebright			✓	✓		✓		✓	
<i>Orchis anthropophora</i>	Man Orchid			✓	✓		✓		✓	
<i>Hyacinthoides non-scripta</i>	Bluebell		Sch 8				✓	✓		
<i>Teucrium botrys</i>	Cut-leaved Germander		Sch 8				✓			
<i>Rhinanthus angustifolius</i>	Greater Yellow-rattle		Sch 8		✓		✓		✓	
<i>Sanicula europaea</i>	Sanicle				✓		✓	✓		
<i>Cichorium intybus</i>	Chicory				✓		✓		✓	
<i>Buxus sempervirens</i>	Box				✓		✓			
<i>Knautia arvensis</i>	Field Scabious				✓		✓		✓	
<i>Geranium sylvaticum</i>	Wood Crane's-bill				✓					
<i>Oxalis acetosella</i>	Wood-sorrel				✓		✓	✓		
<i>Ranunculus flammula</i>	Lesser Spearwort				✓		✓			

Scientific name	Common Name	Habitat Regulations	WCA	S PI	RDL/ Nation ally Rare/ Scarce	Bo CC	A x	A WI	G I	Relevant HPI
<i>Fragaria vesca</i>	Wild Strawberry				✓		✓		✓	
<i>Carlina vulgaris</i>	Carlina Thistle				✓		✓		✓	
<i>Phyteuma orbiculare</i>	Round-headed Rampion				✓		✓		✓	
<i>Gentianella amarella</i>	Autumn Gentian				✓		✓		✓	
<i>Cruciata laevipes</i>	Crosswort				✓		✓			
<i>Euphrasia nemorosa</i>	Common Eyebright				✓		✓		✓	
<i>Veronica officinalis</i>	Heath Speedwell				✓		✓		✓	
<i>Helianthemum nummularium</i>	Common Rock-rose				✓		✓		✓	
<i>Vulpia unilateralis</i>	Mat-grass Fescue				✓		✓			
<i>Helleborus foetidus</i>	Stinking Hellebore				✓		✓			
<i>Potentilla erecta</i>	Tormentil				✓		✓		✓	
<i>Thesium humifusum</i>	Bastard-toadflax				✓		✓		✓	
<i>Cuscuta epithymum</i>	Dodder				✓		✓		✓	
<i>Allium ampeloprasum</i>	Wild Leek				✓					
<i>Myriophyllum verticillatum</i>	Whorled Water-milfoil				✓		✓			
<i>Solidago virgaurea</i>	Goldenrod				✓		✓	✓	✓	
<i>Succisa pratensis</i>	Devil's-bit Scabious				✓		✓		✓	
<i>Plantago media</i>	Hoary Plantain				✓		✓		✓	
<i>Euphorbia exigua</i>	Dwarf Spurge				✓		✓			
<i>Briza media</i>	Quaking-grass				✓		✓		✓	
<i>Bromus secalinus</i>	Rye Brome				✓		✓			
Invasive non-native										
<i>Reynoutria japonica</i>	Japanese Knotweed		Sch 9 Part 2							
<i>Rhododendron ponticum</i>	Rhododendron		Sch 9 Part 2 (England & Wales only)							
<i>Allium triquetrum</i>	Three-cornered Garlic		Sch 9 Part 2 (England & Wales only)							
<i>Lamiastrum galeobdolon subsp. argentatum</i>	Variegated Yellow Archangel		Sch 9 Part 2 (England & Wales only)							
<i>Alopochen aegyptiaca</i>	Egyptian Goose		Sch 9 Part 1							
<i>Branta canadensis</i>	Canada Goose		Sch 9 Part 1							
<i>Psittacula krameri</i>	Ring-necked Parakeet		Sch 9 Part 1							
<i>Sciurus carolinensis</i>	Eastern Grey Squirrel		Sch 9 Part 1							Broadleaved woodland; Urban and gardens; Coniferous woodland
<i>Impatiens glandulifera</i>	Himalayan Balsam		Sch 9 Part 2 (England & Wales only)							
<i>Cotoneaster horizontalis</i>	Wall Cotoneaster		Sch 9 Part 2 (England & Wales only)							
<i>Parthenocissus quinquefolia</i>	Virginia Creeper		Sch 9 Part 2 (England & Wales only)							

Scientific name	Common Name	Habitat Regulations	WCA	S PI	RDL/ Nationally Rare/ Scarce	Bo CC	A x	A WI	G I	Relevant HPI
<i>Elodea canadensis</i>	Canadian Waterweed		Sch 9 Part 2 (England & Wales only)							
<i>Allium paradoxum</i>	Few-flowered Leek		Sch 9 Part 2							

Appendix 9: European protected species checklist

[EPS checklist V3 \(publishing.service.gov.uk\)](https://publishing.service.gov.uk)

European Protected Species and woodland operations. (V4)			
Complete all sections of the Checklist			
Checklist		Details	
<p>1 Are you within, or close to, the known mapped range of any of the protected species OTHER THAN BATS which are potentially everywhere? Tick any that apply. See distribution maps in the Good Practice Guidance for each species -</p> <p><input type="checkbox"/> Dormice <input type="checkbox"/> Otters <input type="checkbox"/> Great crested newts <input type="checkbox"/> Sand lizards <input type="checkbox"/> Smooth snakes</p>	<p>YES</p> <p>NO</p>	<p>Name of Wood:</p> <p>Grid Reference:</p> <p>Area: (ha)</p> <p>Date of Assessment:</p> <p>Name of Assessor:</p>	
	<p>2 Does your wood contain any of the following habitats? Tick any that apply.</p> <p><input type="checkbox"/> Old trees with holes and crevices which might be used bats <input type="checkbox"/> Species rich scrub/coppice, early growth stage plantations and forest interfaces <input type="checkbox"/> Rivers on which otters might be found <input type="checkbox"/> Ponds which might be occupied by great crested newts <input type="checkbox"/> Open areas on healthy soils</p>	<p>YES</p> <p>NO</p>	
		<p>3 Have any of the protected species been recorded in this wood or on adjoining sites? Tick any that apply. Indicate which sources of information you have checked:</p> <p><input type="checkbox"/> National Biodiversity Network (www.nbn.org.uk) <input type="checkbox"/> Local Biological Records Centre <input type="checkbox"/> Local Wildlife Trust <input type="checkbox"/> Other Specify Other:</p>	<p>YES</p> <p>NO</p>
	<p>4 Have your inspections or any expert surveys found any of the following signs or evidence? Tick any that apply.</p> <p><input type="checkbox"/> Signs (e.g. otter spraint, nuts gnawed by dormice, leaves folded by newts) <input type="checkbox"/> Sightings (or echo-location) <input type="checkbox"/> Potential breeding or roosting sites (e.g. veteran trees, old trees with crevices, riverside hollow trees, ponds, timber stacks, large fallen deadwood) <input type="checkbox"/> Confirmed breeding or roosting sites (i.e. evidence of sites actually being used) Details:</p>		<p>YES</p> <p>NO</p>
<p>CHECK POINT</p> <p>If you have answered NO to ALL of the above then only bats need to be considered in your operations.</p> <p>If you have answered YES to any of the above then the species concerned must be considered as well as bats.</p>		Notes	
<p>5 Do the operations comply with Good Practice for bats and any other species found (or likely to be found in your wood) or can the operations be modified to do so? Details: Use reverse of form to expand as required:</p>	<p>YES</p> <p>NO</p>	<p>A licence is not required but continue to sections 6 and 7 below</p> <p>You will need to obtain a licence BEFORE carrying out the work (see EPS Licence Application Forms and Notes)</p>	
	<p>6 Whether or not a licence is required... Has the information been communicated to operators (including the location of breeding sites and sensitive areas)? Tick any that apply.</p> <p><input type="checkbox"/> Included in documentation (e.g. contract, letter of instruction, site assessment or other management plan) <input type="checkbox"/> Shown to operators and/or their supervisor <input type="checkbox"/> Marked with paint or hazard tape <input type="checkbox"/> Shown on the site plan Other means:</p>	<p>YES</p> <p>NO</p>	<p>You may commit an offence if you do not tell your operators about the protected species in your wood.</p>
<p>7 Have arrangements for supervision been made to ensure Good Practice guidance is complied with during the operations? Details:</p>		<p>YES</p> <p>NO</p>	<p>You may commit an offence if you do not take steps to ensure that your operators comply with the Good Practice guidance.</p>

Appendix 10: Basic biosecurity protocols

Basic biosecurity advice for site visits

You should consider biosecurity at the earliest stage when planning any field work, from surveying an area to removing non-native species. Some biosecurity measures can be as simple and as quick as making sure your equipment (including any sampling or survey equipment), footwear, PPE, and vehicle is clean.

1. If practical do not take vehicles onto premises, keep to established tracks and park vehicles on hard standing.
2. Arrive at the site with clean equipment, footwear and vehicle.
3. Ensure equipment and footwear is clean (visually from soil and debris) before leaving the site.
4. Ensure vehicle is kept clean - in particular, remove any accumulated mud before leaving the site.
5. Make use of facilities provided on the site to clean footwear/equipment.
6. Keep access to a minimum.
7. Where possible avoid areas of livestock or known disease.

Plan visits so that the highest risk site is visited last (NNESS: GB Non-native Species Secretariat, 2023).

Appendix 11: Bat box information pack



Bat Box Information Pack

Bats are amazing animals that are important to ecosystems in the UK and worldwide. We have 18 species of bat in the UK, all of which are protected under European law. Bat populations in the UK have declined dramatically over the past century due to persecution and habitat loss. However, some UK bat species have recently shown some signs of increasing so there is hope.

Bat boxes are artificial roosts designed to provide bats with alternative resting places or to encourage bats into areas where there are few existing suitable roost sites. There are various designs of bat box; wooden boxes that you can make yourself, ready-assembled external boxes for buildings and trees, and even integrated bat boxes that can be built into walls.

Providing bat boxes can increase opportunities for roosting bats but it can take a while for bat boxes to be used regularly, particularly where a number of suitable alternative roost sites exist. Bat boxes can have an important additional function in encouraging interest and educating members of the public about bat conservation. The correct design and placement of boxes will help increase the likelihood of their uptake by bats.



© Andrew Dumbleton

Bat roost preferences

Bat boxes are now available from many outlets, and in a range of shapes and sizes, so some knowledge of what bat species are in your local area and their preferences will help you choose the best possible box. Some species such as horseshoe bats and grey long-eared bats do not use bat boxes.

Microclimate within a new roost is a very important factor in terms of increasing the chance of successful uptake by bats. In general, they prefer warm spaces in the summer for rearing young and cooler spaces in the winter for hibernation. The box should be draught proof and made from a thermally stable material such as untreated wood, ecostyrocete, woodcrete, brick or stone. If possible, it's better to provide several internal chambers so that the bats can move around.



©Hugh Clark

Orientation and location

Structures for summer roosting should be positioned where they are sheltered from the wind but unshaded for most of the day. Summer maternity roosts (in the northern hemisphere) should be on a south-easterly to south-westerly aspect. It is always best to provide a number of different options for bats so that they can choose the most appropriate temperature based on their needs. This can be achieved by grouping a number of bat boxes each with a different aspect; two or three boxes is preferable to one, although a single box still has a chance of being used depending on the bat species that use the local area. Three boxes can be arranged around the trunk of larger trees – see below for details about putting up bat boxes.



© Fern Alder

Bat boxes are more likely to succeed in areas where there is a good mixture of foraging habitat, including trees, and a source of water (most maternity roosts are located within a short distance of permanent fresh water such as a stream, pond, river or lake). Bat boxes in areas with few other roosting opportunities are also likely to be more successful.

Bat boxes should also be located close to unlit linear features, such as lines of trees or hedgerows. Bat species use these features for navigation between their roosting sites and feeding grounds and to avoid flying in open and exposed areas. Ensure the bats approach to the box is not impeded, for example by branches – clear away underneath the box so the bats can land easily before crawling up into the box.

Size of the bat box

The most frequently used bat boxes are small and only suitable for crevice-dwelling bat species.

Access

Crevice dwelling bats crawl into their roosts via small gaps around 15-20mm high. Roughened vertical surfaces or landing areas allow better access (by landing and crawling), although horizontal landing perches should be avoided as these are not necessary, may even deter bats and encourage birds to nest within the bat box.

Other considerations

Bats are nocturnal and adapted to low light conditions. Artificial light sources should not be directed onto bat boxes or flight paths as most bat species find artificial lighting very disturbing.



© John Altringham

If possible, make or purchase bat boxes with an entrance slit along the bottom so that accumulated bat waste can drop out of the box or be pushed out as bats emerge. This will also help stop birds nesting in the box and blocking the entrance, which can happen with bat boxes that have entrance holes in the middle.

Boxes that may accumulate bat droppings will also need to be cleaned regularly by a licensed bat worker. It is important to remember that bat boxes must not be opened by anyone except a licensed bat worker (see ‘monitoring bat boxes’ below for more details on licences). In addition, nesting birds must not be disturbed so leave the area immediately upon finding an active nest in a box, and there is the potential for dormice to be found in some woodland boxes, in which case the box must only be checked by a licensed ecologist

Types of bat boxes

Bat boxes come in many forms depending on their materials, function and location. Simple bat boxes are available commercially or can even be home-made. Bat boxes can be divided into the following categories: self-made external bat boxes, ready-made external bat boxes, integrated bat boxes and free standing bat boxes. Advanced forms of artificial roost creation include bat houses, bat barns and internal bat lofts (if you are interested in these please refer to the websites and publications listed at the end of this document).

Self-made external bat boxes

Self-made wooden bat boxes are usually located on trees or the outside walls of buildings. These boxes are usually cubic or rectangular, with a grooved ‘bat ladder’ and a narrow entrance slit at the bottom. These will last for approximately ten years and can either be bought in kit form, or you can make your own from scratch (there are instructions for the ‘The Kent bat box’ pictured below in the Appendix at the end of this document – these boxes are also available commercially).

They come in a variety of shapes but key requirements are:



- The wood should be rough sawn for grip and untreated.
- Bats do not like draughts; the entrance slit should be no more than 15-20mm wide and there should be no gaps where the sides and top join - the box should be well put together.
- A box that cannot be opened is best - it will lessen the chances of the bats being harmed through becoming trapped under the opened lid, or disturbed by people opening the top.
- To increase longevity of the box, use screws rather than nails.
- Any screws, hardware or staples used must be exterior grade (galvanized, coated, stainless, etc).

Ready-made external bat boxes

There are a number of ready made external bat boxes suitable for buildings and trees that can be purchased. These boxes can be made from wood, however there are an increasing number of more durable options, such as ecostyrocete (pictured right). These types of boxes can come in a range of finishes to blend into the buildings façade or indeed to highlight their presence!



Integrated bat boxes



Integral or integrated bat boxes can be built into the walls or masonry of houses and other buildings. The boxes can be embedded such that they do not impair the air-tightness of the building. Many designs are available including some that have bespoke coverings that can match the building façade and / or highlight the boxes presence (see boxes left and below from [Habibat](#)). The same principles for size, location and access apply.



Ready-made free standing boxes

American style bat houses (larger, multi-chambered boxes) have been successfully used for bat conservation in North America and elsewhere. These large multi-chambered boxes are increasingly being used in the UK for sites where there are few suitable features (such as trees or buildings) for boxes to be attached to, as they can be put up on poles:

<http://www.batcon.org/files/RocketBoxPlans.pdf>

Commercial designs are now available, such as the 'rocket box' from Habibat (pictured right).



Habibat

Habibat is a partnership between the Bat Conservation Trust, Ecosurv, their partnership bat box companies and Habibats customers. Their aim is to provide bat boxes that work for bats and buildings. A portion of the profits from each Habibat partner company bat box sold is reinvested into the Habibat scheme to improve accommodation for bats in the long run with an aim to implement monitoring and research. The scheme aims to improve knowledge of integrated bat box use and design, and give customers guidance on installation.



If you would like further information on the products and partnership companies, visit the Habibat website: www.habibat.co.uk.

Putting up bat boxes

Most bat species will use higher positioned boxes (around 4m up); assess the risk of working at height when undertaking the installation, then place the box as high as it is safe to do so. This will also help protect bats from vandalism and falling prey to cats. If working in the public realm, try to locate boxes so they are not above public walkways.

Ensure the boxes are appropriately fitted, to avoid the risk of them falling off. The boxes should be checked at least annually and after high winds to ensure they are still securely in place.



© Sue Burchett

On buildings

Place the boxes high up by the eaves on a building, which can also help shelter the box from the weather. As detailed above, the aspect of the box should capture sun for part of the day if the intention is to attract maternity colonies.

Gazebos, garden walls and sheds have been suggested as sites for bat boxes. However, the main danger is that the boxes are not high enough above the ground, the structures may not be robust enough to support the box in high winds and the boxes are too visible to predators or vandals.

On trees

Consideration should be given to tree growth and boxes may need rehangng over time, regularly check boxes to assess this. Use headless or domed nails not fully hammered home to allow the tree growth, again regular checks will ensure that this allowance can be made while still being securely fitted. Iron nails can be used on trees with no commercial value. Copper nails can be used on conifers, but aluminium alloy nails are less likely to damage saws and chipping machinery.

Monitoring bat boxes

Making and putting up bat boxes is a great conservation action but what is even more useful is to know whether they are being used, when and by which species.

How long before bats will use the box?

Sometimes it can take several years for bats to find a new box. Be patient! Slow (or no) uptake may be due to the availability of other roosts locally. Sometimes, however, bats move in within months or even weeks!



© Daniel Fellman

How will I know if the box has been successful?

To check if the box is being used, look out for droppings and urine-staining on the vertical 'bat ladder' below the box and listen for 'chattering' during the day, especially during the summer months. You can also watch the box for an hour either side of sunset to observe any bats leaving to feed, or around dawn to see any bats returning to their roost. Bats may be observed by looking up into the box from below, however no light should be used as this may disturb any bats that are present.

Licensing and the law

You can undertake the non-invasive checks above without needing a licence. However, if the box needs to be opened to check it then there must be a suitably licensed bat worker present. Anyone wishing to undertake bat box checks should obtain training in bat handling and identification before applying for a licence. You can find out more about licensing and bats on the Bat Conservation Trust website at: www.bats.org.uk/pages/licensing.html



©Liz Greenwood

All bats and their roosts are protected by law and it is an offence to deliberately disturb, handle or kill bats. The relevant legislation in England & Wales is the Wildlife and Countryside Act 1981 and Conservation of Habitats & Species Regulations 2010 (as amended). In Scotland it is the Conservation (Natural Habitats, etc.) Regulations 1994 and in Northern Ireland the Conservation (Natural Habitats, etc.) Regulations (Northern Ireland) 1995.

A bed without breakfast?

Bats often use features such as hedgerows, tree lines and watercourses as commuting pathways between roosts and foraging areas. This type of habitat also provides shelter, allowing insects to gather and therefore supports foraging bats. The highest densities of bats occur where insects are most plentiful.

Make sure you maintain or create good foraging habitats for bats by planting a wide range of plants such as flowers that vary not only in colour and fragrance, but also in shape. See BCT's 'Encouraging Bats' leaflet for more information (www.bats.org.uk/publications).



Other useful websites

Bat Conservation Trust

www.bats.org.uk

The Bat Conservation Trust (BCT) is working towards a world where bats and people thrive in harmony, to ensure they are around for future generations to enjoy. BCT is the only organisation solely devoted to bat conservation in the UK.

Bat Conservation International

www.batcon.org

Bat Conservation International's mission is to conserve the world's bats and their ecosystems to ensure a healthy planet. Based in Austin, Texas, BCI is devoted to conservation, education and research initiatives involving bats and the ecosystems they serve.

Roost

roost.bats.org.uk

Roost is a resource developed by the Bat Conservation Trust (BCT) to aid in the gathering of information on bat roost mitigation, compensation and enhancement techniques. The aim is for this site to provide accessible information to support everyone involved in bat conservation and development.

Vincent Wildlife Trust

www.vwt.org.uk

The Vincent Wildlife Trust (VWT) is an independent charitable body founded by Vincent Weir in 1975 and has been supporting wildlife conservation ever since. They conserve a range of endangered mammals through management of their own reserves, undertake pioneering research and provide expert advice to others through practical demonstration.

Publications

Gunnell, K., Murphy, B. and Williams, C. (2013) Designing for biodiversity: a technical guide for new and existing buildings (2nd ed.)

Gunnell, K., Grant, G. and Williams C. (2012) Landscape and urban design for bats and biodiversity

Mitchell-Jones, A.J (2004) Bat mitigation guidelines

Mitchell-Jones, A.J. and McLeish, A.P. (2004) Bat workers' manual (3rd edition)

Tuttle, M.D., Kiser M. and Kiser S (2004) The Bat House Builder's Handbook

Appendix: The Kent bat box (D.I.Y. instructions)

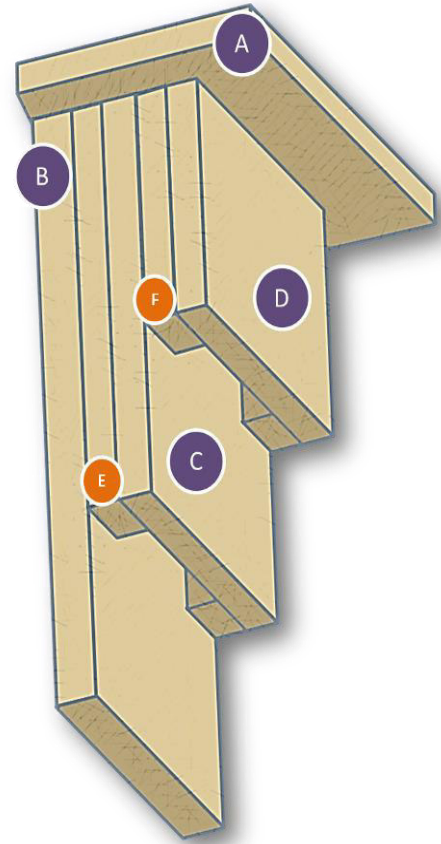
Design and measurements

Simple to construct, self-cleaning and low maintenance, the Kent bat box (designed by the Kent Bat Group) is a great way to encourage bats in your garden or your green space. The box should be rainproof and draught-free.

The only critical measurement is the width of the crevices: between 15-25mm. Other measurements are approximate. Timber should be approximately 20mm thick.

Measurements for one Kent bat box kit would be as follows:

Part	Quantity	Size (mm)
Roof (A)	1	250 x 160 x 20
Back (B)	1	450 x 200 x 20
Centre (C)	1	330 x 200 x 20
Front (D)	1	210 x 200 x 20
Centre Rails (E)	2	330 x 20 x 20
Front Rails (F)	2	210 x 15 x 15
Stand-offs (optional)	2	200 x 20 x 20



Material and Tools

This kit requires approximately 1.6m of rough wood and 25 screws (8 x 1 ½ inches) to assemble. You can rough it up by scraping with a suitable tool – possibly a saw blade or even a screwdriver but make sure you use untreated wood as some preservative chemicals can kill bats.

Pre-drill the holes to prevent the wood splitting. Alternatively you can assemble your bat box kit with nails although they tend to be less robust than boxes made with screws.

The hanging screws may either be at the edges of the front panel or in the side centre block (not in the rails!). Fixing may be by use of brackets, durable nylon cord or wires.

When installing the box, assess the risks of working at height, use the appropriate fittings and assess where the box will be located, in relation to any public access. Regular checks should be made to ensure the box remains securely fitted, especially after high winds.

Photos and illustrations in this document by the Bat Conservation Trust unless otherwise stated.

The Bat Conservation Trust (known as BCT) is a registered charity in England and Wales (1012361) and in Scotland (SC040116).

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Email: enquiries@bats.org.uk

National Bat Helpline: 0345 1300 228