

Banstead Downs

Site Management Plan

2024-2033

Appendices

Reigate & Banstead BOROUGH COUNCIL Banstead | Horley | Redhill | Reigate



SWT Ecology Services was commissioned by the Banstead Commons Conservators (BCC) 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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2.1	Update in line with comments from BCC (received 12/02/2024)			
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For full Site Management Plan see separate document

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Appendix 1: Site background Banstead Downs SSSI

The SSSI is fully contained within the Banstead Downs site and comprises three units. Of these, two have been assessed as Unfavourable – Recovering (Units 2 & 3), and one has been assessed as Favourable (Unit 1, which falls within the golf club land). It should be noted that these assessments were completed in 2013 and so the conditions of the habitats within each unit may have changed significantly since then as a result of continued management efforts (see Figure 3 for location of SSSI units and condition as assessed in 2013).

- Unit 1: Met all required thresholds for favourable calcareous grassland including bare ground coverage, variation of sward height, lack of invasive species (both non-native species and native species invasive to calcareous grassland), scrub coverage and chalk flora diversity which included Bird's-foot Trefoil, Dropwort, Salad Burnet, Dwarf Thistle, Lady's Bedstraw, Kidney Vetch, Fairy Flax, Common Knapweed, Thymes, Bastard Toadflax, Upright Brome, Quaking-grass, Meadow Oat-grass, Squinancywort, Hairy Violet, Greater Knapweed, Rough Hawkbit, Lesser Hawkbit, Oxeye Daisy, Hoary Plantain, Small scabious, Milkworts, Common Rock-rose and Mouse-ear Hawkweed. Torgrass was not recorded. Small Blue butterfly was confirmed to be breeding within this unit, using Kidney Vetch.
- Unit 2: Assessed as unfavourable due to scrub encroachment and grassland impoverishment due to the increasing dominance of tall grasses including tor-grass, however it was noted at the time of assessment that this unit was in active management and that the failing criteria were in the process of being improved upon. Failed criteria included proportion of bare ground, coverage of litter, Bracken coverage, sward variation, and overdominance of grass. Species present included Lady's Bedstraw, Upright Brome, Dropwort, Heath False-brome, Salad Burnet, Bird's-foot Trefoil, Common Rock-rose, Rough Hawkbit and Lesser Hawkbit. Banstead Commons Conservators has since undertaken management of the site which has significantly improved its condition.
- **Unit 3:** Assessed as unfavourable for similar reasons to Unit 2, and in particular was less species rich than the other units due to a lack of recent management. Again, it was noted at the time of assessment that new management practices were having a positive effect on the condition of the unit. Heavy Rabbit grazing was observed here, resulting in a shorter sward with less variation, although the ratio of herbs and grasses was at a passing level. Invasive non-native species were recorded in this unit, including Goldenrod and Cotoneaster spp., as well as tree encroachment from Dogwood, Sycamore and Ash. Torgrass was present in too high an abundance, and other negative indicator species such as Docks and Common Nettle were recorded in too high an amount. Grassland species recorded included Hoary Plantain, Greater Knapweed, Bird's-foot Trefoil, Milkworts, Fairy Flax, Mouse-ear Hawkweed, Horseshoe Vetch, Dwarf Thistle, Small scabious, Kidney Vetch, gentians, saw-wort, Common Rock-rose, Heath False-brome, Sainfoin, Dyer's Greenweed, Dropwort, Salad Burnet, Devil's-bit Scabious, Cowslip, Rough Hawkbit, Lesser Hawkbit, Oxeye Daisy, Upright Brome, Hairy Violet, Squinancywort, Clustered Bellflower, Lady's Bedstraw and Thymes. Unit 3 was found to support a number of bird species, including Chiffchaff, yellowhammer, Collared Dove, Great Spotted Woodpecker, Long-tailed Tit and Whitethroat. Banstead Commons Conservators has since undertaken management of the site which has significantly improved its condition,

although this progress has been hindered by extensive antisocial activity via illegal biking activity.

Climate

Surrey is typical for southeast England, with warm summers and mild, cool winters. Precipitation is frequent across the year, although dry spells are also typical. In more recent years, Surrey has been impacted by heatwaves and flooding events, which have sometimes occurred unpredictably. There have also been increased occurrences of storms.

Topography

The land on Banstead Downs is gently sloping for the most part, with the high point centred around Gally Hills. However, there localised topography changes created by unpermitted bike courses, in particular the undulating steep slopes present in compartment 1.7 (see Figure 1 of Site Management Plan).

Hydrology

Banstead Downs falls within the Thames River Basin District, within the London Management Catchment. The western half of the site falls within the Hogsmill Operational Catchment, and the eastern half within the Beverley Brook Operational Catchment. None of the watercourses within these catchments fall within Banstead Downs, and there is a significant degree of separation between the two. There is one currently dry ditch within compartment 2.37 (see Figure 1 of Site Management Plan), which is likely used as a drainage ditch to manage excessive surface water at the neighbouring residential area. There is a pond within the golf course land. There is otherwise no hydrological interest within Banstead Downs.

History/archaeology

Two scheduled ancient monuments lie within Banstead Downs, comprising two Saxon burial mounds within the woodland of Gally Hills. There are four mounds in total, with each listing covering an adjacent pair. They have been listed as a scheduled ancient monument since 1926 and have survived well and are visible above ground to about 0.5-1.2m in height. One of the mounds was partially excavated in 1972. These are listed as 1008053 and 1008054.

Banstead Commons Conservators

Banstead Commons Conservators was 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; http://www.bansteadcommonsconservators.co.uk/.

HLS

An HLS agreement covers Banstead Downs and should be referred to separately.

Appendix 2: 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 4th January 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. Additional species data was provided by Banstead Commons Conservators, including data from butterfly transect surveys, a fungal foray and details from the most recent SNCI survey.

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 500m of the survey area boundary were identified using aerial photography and publicly available mapping.

Publicly available information on (DEFRA, 2023) was also consulted.

Habitat survey

Habitats in the survey area were mapped using the UK habitat classification survey methodology .(Butcher, Carey, Edmonds, 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 3.

Fauna species mentioned in this report will be referred to by their common name. Scientific names for these species are detailed in Appendix 4.

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 field surveys were undertaken on 1st, 2nd, 5th and 6th June 2023, in warm, sunny and dry conditions by Jenny Dawson MChem (Hons) MSc – Senior Ecologist.

BNG condition assessment

BNG assessment requires information on the condition of the habitat. This was undertaken on 1st, 2nd, 5th and 6th June 2023 by Jenny Dawson MChem (Hons) MSc, 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 (Natural England, 2023b). Habitat condition assessment forms are presented in Appendix 5. 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 predetermined, such as rhododendron and bramble scrub.

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

- Grassland = 1.1-11
- Woodland = 2.1-10
- Heathland and Shrub = 3.1-9

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 Natural England assessment uses different, more detailed criteria although there is some overlap.

BNG assessment

Biodiversity net gain is calculated and interpreted following eight principles and rules, as defined in (Natural England, 2023a). 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.

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 inputted into the biodiversity net gain metric (Natural England, 2023d), accessed on 26th June 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. The habitat condition assessment was undertaken 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; the survey was conducted within the optimal timeframe.

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).

Scientific name	Common name	Habitat/s	Abundance in habitat type
Acer campestre	Field Maple	Lowland mixed deciduous woodland	0
Acer platanoides	Norway Maple	Lowland mixed deciduous woodland	O-F
1		Lowland calcareous grassland	R-O
Acer	Sycamore	Lowland mixed deciduous woodland	F-A
pseudopiatarias		Mixed scrub	O-F
Achillea millefolium	Yarrow	Other neutral grassland	0
Acrimea milleronam	Tanow	Lowland mixed deciduous woodland	0
Accession		Other neutral grassland	0
podagraria	Ground Elder	Lowland mixed deciduous woodland	0
		Mixed scrub	F
Aesculus hippocastanum	Horse-chestnut	Lowland mixed deciduous woodland	R-F
Agrimonia		Lowland calcareous grassland	F
eupatoria	Agninony	Lowland mixed deciduous woodland	0
<i>Agrostis</i> sp.	A Bent	Other neutral grassland	0
Alliaria petiolata	Garlic Mustard	Lowland mixed deciduous woodland	O-F
	Democro	Lowland mixed deciduous woodland	0
Allium ursinum	Ramsons	Bramble scrub	0
Angelica sylvestris	Wild Angelica	Lowland calcareous grassland	R
		Lowland calcareous grassland	0
Aniconthe starilia	Barran Brama	Other neutral grassland	0
Anisanina steriis	Darren brome	Lowland mixed deciduous woodland	O-F
		Mixed scrub	0
Anthoxanthum odoratum	Sweet Vernal- grass	Lowland calcareous grassland	O-LA
Anthringer		Lowland calcareous grassland	0
svivestris	Cow Parsley	Other neutral grassland	0
		Lowland mixed deciduous woodland	F
Anthyllis vulneraria	Kidney Vetch	Lowland calcareous grassland	0
Aquilegia vulgaris	Columbine	Lowland mixed deciduous woodland	R
Arenaria serpyllifolia	Thyme-leaved Sandwort	Lowland calcareous grassland	0

Appendix 3: Vascular plant species recorded between 01/06/23 and 06/06/23

Scientific name	Common name	Habitat/s	Abundance in habitat type
		Lowland calcareous grassland	0
Arrnenatherum elatius	False Oat-grass	Other neutral grassland	А
		Lowland mixed deciduous woodland	0
Arum maculatum	Lords-and-ladies	Lowland mixed deciduous woodland	R-0
Asplenium scolopendrium	Hart's-tongue	Lowland mixed deciduous woodland	О
Pollio poroppio	Deiev	Lowland calcareous grassland	0
Beills perennis	Daisy	Lowland mixed deciduous woodland	O-LF
		Lowland calcareous grassland	0
Betula pendula	Silver Birch	Lowland mixed deciduous woodland	O-F
		Mixed scrub	F
<i>Betula</i> sp.	A Birch	Lowland calcareous grassland	R
		Lowland calcareous grassland	O-F
Brachypodium	False-brome	Other neutral grassland	0
Sylvalicult		Lowland mixed deciduous woodland	O-F
Briza media	Quaking-grass	Lowland calcareous grassland	O-F
Dromus erestus	Linvight Droppe	Lowland calcareous grassland	F-A
Bromus erectus	Opright Brome	Lowland mixed deciduous woodland	O-LA
		Lowland calcareous grassland	0
Bromus	Soft Brome	Other neutral grassland	0
noracaccus		Lowland mixed deciduous woodland	O-LF
Bryonia dioica	White Bryony	Lowland calcareous grassland	R
Buddleja davidii	Butterfly-bush	Lowland mixed deciduous woodland	R
Calvatagia panium	Hodgo Pindwood	Other neutral grassland	R-O
Calyslegia sepium	Heage Binaweed	Lowland mixed deciduous woodland	0
Capsella bursa- pastoris	Shepherd's-purse	Lowland mixed deciduous woodland	LO
Cardamine hirsuta	Hairy Bitter-cress	Lowland calcareous grassland	0
Carex flacca	Glaucous Sedge	Lowland calcareous grassland	O-F
Castanea sativa	Sweet Chestnut	Lowland mixed deciduous woodland	R

Scientific name	Common name	Habitat/s	Abundance in habitat type
		Lowland calcareous grassland	O-F
Contouroo piaro	Common	Other neutral grassland	0
Centaurea nigra	Knapweed	Lowland mixed deciduous woodland	0
		Mixed scrub	0
Cerastium fontanum	Common Mouse- ear	Lowland calcareous grassland	О
Chamaenerion	Rosebay	Lowland calcareous grassland	O-LF
angustifolium	Willowherb	Lowland mixed deciduous woodland	0
		Lowland calcareous grassland	R-0
Cirsium arvense	Creeping Thistle	Other neutral grassland	F
		Lowland mixed deciduous woodland	0
Cirsium vulgare	Spear Thistle	Lowland calcareous grassland	R
Olemetic vitelles	The college is the	Lowland calcareous grassland	O-F
Clematis vitalba	l raveller s-joy	Lowland mixed deciduous woodland	O-A
		Lowland calcareous grassland	F
Convolvulus	Field Bindwood	Other neutral grassland	F
arvensis c.f.	Field Bindweed	Lowland mixed deciduous woodland	O-F
		Mixed scrub	F
		Lowland calcareous grassland	O-F
Cornus sanguinea	Dogwood	Lowland mixed deciduous woodland	O-A
		Mixed scrub	F
	Lland	Lowland mixed deciduous woodland	O-F
Corylus aveilaria	Hazei	Mixed scrub	0
Cotoneaster bullatus	Hollyberry Cotoneaster	Lowland mixed deciduous woodland	О
Cotoneaster salicifolius c.f.	Willow Cotoneaster	Lowland mixed deciduous woodland	R-O
Cotoneaster sp.	A Cotoneaster	Lowland mixed deciduous woodland	R
		Lowland calcareous grassland	0
Crataegus	Hawthorn	Other neutral grassland	0
monogyna		Lowland mixed deciduous woodland	F-A
		Mixed scrub	F-A
Crepis capillaris	Smooth Hawk's- beard	Lowland mixed deciduous woodland	0

Scientific name	Common name	Habitat/s	Abundance in habitat type
Crenis sp	Δ Hawk's-beard	Lowland calcareous grassland	0
	A Hawk 5-beard	Other neutral grassland	R
Cruciata laevines	Crosswort	Lowland calcareous grassland	O-F
	Closswort	Mixed scrub	0
Cymbalaria muralis	lvy-leaved Toadflax	Lowland mixed deciduous woodland	О
		Lowland calcareous grassland	O-A
Dactylis glomerata	Cock's-foot	Other neutral grassland	F-A
		Lowland mixed deciduous woodland	O-LF
Druonteris filix mas	Malo forn	Lowland calcareous grassland	0
Dryoptens mix-mas	Male-lelli	Lowland mixed deciduous woodland	O-F
<i>Dryopteris</i> sp.	A Buckler-fern	Lowland mixed deciduous woodland	0
Epilobium op	A Willowborb	Lowland calcareous grassland	0
Epilobium sp.	A WIIIOWITELD	Other neutral grassland	0
Euonymus europaeus	Spindle	Lowland mixed deciduous woodland	O-F
F unctoria		Lowland calcareous grassland	O-LA
Eupatoria cannabina	Hemp-agrimony	Lowland mixed deciduous woodland	0
		Mixed scrub	0
Fagus sylvatica	Beech	Lowland mixed deciduous woodland	R-O
		Lowland calcareous grassland	O-F
Festuca ovina agg.	Sheep's-fescue	Other neutral grassland	0
		Lowland mixed deciduous woodland	LO
Ficaria verna	Lesser Celandine	Lowland mixed deciduous woodland	F
Filipendulae	Maadawawaat	Lowland calcareous grassland	R-O
ulmaria	Meadowsweet	Lowland mixed deciduous woodland	R
		Lowland calcareous grassland	F
Filipendulae	Dropwort	Other neutral grassland	0
Valgaris		Lowland mixed deciduous woodland	0
	Wild Strouberry	Lowland calcareous grassland	0
riagana vesca	wild Strawberry	Lowland mixed deciduous woodland	0
	Ach	Lowland mixed deciduous woodland	O-F
Fraxinus exceisior	ASI	Mixed scrub	О

Scientific name	Common name	Habitat/s	Abundance in habitat type
		Lowland calcareous grassland	O-LF
	Cleavers	Other neutral grassland	F
Gallum apanne	Cleavers	Modified grassland	0
		Lowland mixed deciduous woodland	O-F
Calium verum	Ladv's Bedstraw	Lowland calcareous grassland	O-F
Gallulli Verulli	Lady's Dedsilaw	Lowland mixed deciduous woodland	0
Corregium	Cut looved	Lowland calcareous grassland	0
dissectum	Cut-leaved Crane's-bill	Other neutral grassland	0
aloootain		Lowland mixed deciduous woodland	0
Coronium mollo	Dove's-foot	Other neutral grassland	O-F
Geranium mone	Crane's-bill	Lowland mixed deciduous woodland	O-LF
Geranium pyrenaicum	Hedgerow Crane's-bill	Lowland mixed deciduous woodland	О
		Lowland calcareous grassland	0
Geranium	Herb-Robert	Other neutral grassland	F
TODEITIAITUITI		Lowland mixed deciduous woodland	0 F F 0
<i>Geranium</i> sp.	A Crane's-bill	Lowland mixed deciduous woodland	0
		Lowland calcareous grassland	O-F
Geum urbanum	Wood Avens	Other neutral grassland	0
		Lowland mixed deciduous woodland	O-A
Glechoma		Lowland calcareous grassland	0
hederacea	Ground-ivy	Lowland mixed deciduous woodland	0
		Lowland calcareous grassland	R-0
Hedera helix	Common Ivy	Lowland mixed deciduous woodland	А
		Mixed scrub	0
Helianthemum nummularium	Common Rock- rose	Lowland calcareous grassland	О
Helictochloa	Maadow Oat groop	Lowland calcareous grassland	O-F
pratensis		Other neutral grassland	0
		Lowland calcareous grassland	O-LF
Heracleum	Hogweed	Other neutral grassland	O-F
sphondylium	i logweed	Modified grassland	0
		Lowland mixed deciduous woodland	F
<i>Hieracium</i> sp.	Hawkweed	Lowland mixed deciduous woodland	0

Scientific name	Common name	Habitat/s	Abundance in habitat type
		Lowland calcareous grassland	O-F
Hippocrepis	Horseshoe Vetch	Other neutral grassland	0
comosa		Lowland mixed deciduous woodland	0
		Lowland calcareous grassland	O-F
Holcus lanatus	Yorkshire-fog	Other neutral grassland	0
		Lowland mixed deciduous woodland	0
Hordeum murinum	Wall Barley	Lowland mixed deciduous woodland	LO
Hyacinthoides		Lowland colocropus grapping	10
non-scripta x hispanica = H x	Hybrid Bluebell		
massartiana		Lowiand mixed deciduous woodiand	0
Hypericum	Perforate St	Lowland calcareous grassland	O-F
perforatum	John's-wort	Lowland mixed deciduous woodland	0
Hypericum sp.	A St John's-wort	Lowland calcareous grassland	0
Hypochaeris		Lowland calcareous grassland	O-F
radicata	Cat s-ear	Lowland mixed deciduous woodland	LF
llex aquifolium	Holly	Lowland mixed deciduous woodland	O-F
<i>Iris</i> sp.	An Iris	Lowland mixed deciduous woodland	R
Jacobaea erucifolia	Hoary Ragwort	Lowland calcareous grassland	О
<i>Jacobaea</i> sp.	A Ragwort	Lowland mixed deciduous woodland	R
Jacobaea vulgaris	Common Ragwort	Lowland calcareous grassland	0
Lactuca serriola	Prickly Lettuce	Lowland mixed deciduous woodland	0
Lactuca sp	Alettuce	Other neutral grassland	R
	A Lettuce	Lowland mixed deciduous woodland	0
Lamiastrum galeobdolon subsp. argentatum	Variegated Yellow Archangel	Lowland mixed deciduous woodland	LO
l amium album	White Dead nettle	Other neutral grassland	R
		Lowland mixed deciduous woodland	0
		Lowland calcareous grassland	0
Lathyrus pratensis	Meadow Vetchling	Other neutral grassland	0
		Lowland mixed deciduous woodland	LO
Leontodon hispidus	Rough Hawkbit	Lowland calcareous grassland	O-F

Scientific name	Common name	Habitat/s	Abundance in habitat type
Leontadon sp		Lowland calcareous grassland	0
Leontodon sp.		Lowland mixed deciduous woodland	LO
Leucanthemum	Oxeve Daisv	Lowland calcareous grassland	O-F
vulgare		Lowland mixed deciduous woodland	LO
l igustrum vulgare	Wild privet	Lowland calcareous grassland	R
		Lowland mixed deciduous woodland	O-F
Linum catharticum	Fairy Flax	Lowland calcareous grassland	R
	Decembral Dvo	Lowland calcareous grassland	0
Lolium perenne	grass	Other neutral grassland	F-LA
	5	Lowland mixed deciduous woodland	O-LF
Lonicera nitidus	Wilson's Honeysuckle	Lowland mixed deciduous woodland	R
Lonicera	Hanavauakla	Lowland mixed deciduous woodland	O-F
periclymenum	Honeysuckie	Mixed scrub	0
Lotus corniculatus	Common Bird's-	Lowland calcareous grassland	F-A
Lotus corniculatus	foot Trefoil	Lowland mixed deciduous woodland	LF
Luzula campestris	Field Wood-rush	Lowland calcareous grassland	0
Medicago lupulina	Black Medick	Lowland calcareous grassland	O-F
Mercurialis perennis	Dog's Mercury	Lowland mixed deciduous woodland	O-LA
<i>Myosotis</i> sp.	A Forget-me-not	Other neutral grassland	0
Orchidaceae	Orchids	Lowland calcareous grassland	LO
Oracanum vulcara	Wild Mariaram	Lowland calcareous grassland	O-F
Oreganum vulgare		Lowland mixed deciduous woodland	LF
Papaver rhoeas	Common Poppy	Lowland mixed deciduous woodland	R
Pentaglottis	Groop Alkapot	Lowland calcareous grassland	0
sempervirens	Green Aikanet	Lowland mixed deciduous woodland	0
Persicaria maculosa	Redshank	Other neutral grassland	R
Pilosella officinarum	Mouse-ear Hawkweed	Lowland calcareous grassland	O-F
Diantana		Lowland calcareous grassland	O-A
r≀antago lanceolata	Ribwort Plantain	Other neutral grassland	O-F
		Lowland mixed deciduous woodland	O-LF

Scientific name	Common name	Habitat/s	Abundance in habitat type
Plantago major	Greater Plantain	Lowland calcareous grassland	0
		Lowland mixed deciduous woodland	0
Poa annua	Annual Meadow-	Lowland calcareous grassland	O-F
	grass	Other neutral grassland	O-F
	Smooth Meadow-	Lowland calcareous grassland	O-F
Poa pratensis	grass	Other neutral grassland	0
		Lowland mixed deciduous woodland	LO
		Other neutral grassland	F
<i>Poa</i> sp.	A Meadow-grass	Lowland mixed deciduous woodland	O-LF
		Mixed scrub	0
	Devel Meedew	Lowland calcareous grassland	o-F
Poa trivialis	grass	Other neutral grassland	0
		Lowland mixed deciduous grassland	0
<i>Polygala</i> sp.	A Milkwort	Lowland calcareous grassland	0
Polystichum sp.	A Shield-fern	Lowland mixed deciduous woodland	0
Potentilla erecta	Tormentil	Lowland calcareous grassland	0
	Quantization	Lowland calcareous grassland	0
Potentilla repens	Creeping	Other neutral grassland	F
		Lowland mixed deciduous woodland	0
Poterium		l owland calcareous grassland	ΕΛ
sanguisorba subsp.	Salad Burnet		IF
sanguisorba			Ľ,
Drimula varia	Courdin	Lowland calcareous grassland	0
Prinula vens	Cowsiip	Lowland mixed deciduous woodland	0
Prunella vulgaris	Selfheal	Lowland calcareous grassland	R-0
Prunus avium	Wild Cherry	Lowland mixed deciduous woodland	R-0
Prunus Iaurocerasus	Cherry Laurel	Lowland mixed deciduous woodland	R-F
Prunus lusitanica	Portugal Laurel	Lowland mixed deciduous woodland	R
Prunus sp.	A Plum	Lowland mixed deciduous woodland	R
Prupus spinoss	Blackthorn	Lowland mixed deciduous woodland	R-0
	DIACKUIUITI	Mixed scrub	R-O

Scientific name	Common name	Habitat/s	Abundance in habitat type
Pteridium aquilinum	Bracken	Other neutral grassland	LF
		Lowland calcareous grassland	R-0
Quercus robur	Pedunculate Oak	Lowland mixed deciduous woodland	O-A
		Mixed scrub	F
Quercus rubra	Red Oak	Lowland mixed deciduous woodland	R
		Lowland calcareous grassland	O-F
Ranunculus	Bulbous Buttercup	Other neutral grassland	0
Duibosus		Lowland mixed deciduous woodland	0
		Lowland calcareous grassland	O-F
Ranunculus	Buttercup	Other neutral grassland	F
repens	Duttercup	Lowland mixed deciduous woodland	O-F
Reseda lutea	Wild Mignonette	Lowland calcareous grassland	F
Reynoutria japonica	Japanese Knotweed	Other neutral grassland	LF
Dhinanthua an		Lowland calcareous grassland	R-F
Rhinanthus sp.		Other neutral grassland	0
<i>Ribes</i> sp.	A Currant	Lowland mixed deciduous woodland	R-0
		Lowland calcareous grassland	0
Rosa arvensis	Field-rose	Lowland mixed deciduous woodland	O-F
		Mixed scrub	F
Basa soning agg	Degrape	Lowland calcareous grassland	O-F
Rosa canina agg.	Dog-rose	Lowland mixed deciduous woodland	O-F
Rosa rubiginosa	Sweet-briar	Lowland calcareous grassland	R-0
		Lowland calcareous grassland	O-F
<i>Rosa</i> sp.	A Rose	Lowland mixed deciduous woodland	O-F
		Mixed scrub	F
		Lowland calcareous grassland	O-LA
		Other neutral grassland	O-F
Rubus fruticosa	Bramble	Modified grassland	0
agg.	Diambie	Lowland mixed deciduous woodland	F-A
		Bramble scrub	A
		Mixed scrub	F
Rumex acetosa	Common Sorrel	Lowland calcareous grassland	F

Scientific name	Common name	Habitat/s	Abundance in habitat type
Rumex crispus	Curled Dock	Other neutral grassland	F
		Lowland calcareous grassland	0
Rumex obtusifolia	Broad-leaved Dock	Other neutral grassland	0
Rumex obtasiiolia	Dioad-leaved Dock	Modified grassland	0
		Lowland mixed deciduous woodland	0
Rumex sanguineus	Wood Dock	Lowland mixed deciduous woodland	О
Salix caprea	Goat Willow	Lowland mixed deciduous woodland	0
Salix cinerea	Rusty Willow	Lowland mixed deciduous woodland	0
Seliver	A \4/illow	Lowland mixed deciduous woodland	R
Sanx sp.	A WIIIOW	Mixed scrub	0
Sambucus nigra	Elder	Lowland mixed deciduous woodland	O-F
Sanicula europaea	Sanicle	Lowland mixed deciduous woodland	0
Scabiosa		Lowland calcareous grassland	0
columbaria	Small Scabious	Mixed scrub	0
Schedonorus arundinaceus	Tall Fescue	Lowland calcareous grassland	LO
Schedonorus	Moodow Eoscuo	Lowland calcareous grassland	0
pratensis	Meadow Fescue	Other neutral grassland	0
Senecio vulgaris	Groundsel	Lowland calcareous grassland	LO
Silana diaiaa	Ded Compien	Other neutral grassland	0
Silerie dioica	Red Campion	Lowland mixed deciduous woodland	0
Silene latifolia	White Campion	Lowland calcareous grassland	LO
Silene vulgaris	Bladder Campion	Lowland calcareous grassland	O-F
Solidago canadensis	Canadian Goldenrod	Lowland calcareous grassland	LF
Sonchus sp.	A Sow-thistle	Lowland mixed deciduous woodland	0
Sorbus aucuparia	Rowan	Lowland mixed deciduous woodland	R-0
<i>Spiraea</i> sp.	A Bridewort	Lowland mixed deciduous woodland	R
Otookus suit ii		Lowland calcareous grassland	0
Stacnys sylvatica	Heage vvoundwort	Lowland mixed deciduous woodland	0
Stellaria graminea	Lesser Stitchwort	Lowland calcareous grassland	LO

Scientific name	Common name	Habitat/s	Abundance in habitat type
Stellaria media	Common Chickweed	Lowland calcareous grassland	О
Symphoricarpos albus/orbiculatus	Snowberry/ Coralberry	Lowland mixed deciduous woodland	О
Symphytum asperum x officinale = S. x uplandicum	Russian Comfrey	Other neutral grassland	0
Symphytum sp.	A Comfrey	Lowland calcareous grassland	R
<i>Taraxacum</i> agg.	Dandelion	Lowland calcareous grassland Other neutral grassland Lowland mixed deciduous woodland	0 0 0-F
Taxus baccata	Yew	Lowland mixed deciduous woodland	R-O
Thymus drucei	Wild Thyme	Lowland calcareous grassland	LO
<i>Tilia</i> sp.	A Lime	Lowland mixed deciduous woodland Mixed scrub	R-O O
Tragopogon pratensis	Goat's-beard	Lowland mixed deciduous woodland	R
Trifolium pratense	Red Clover	Lowland calcareous grassland Lowland mixed deciduous woodland	O-F O
Trifolium repens	White Clover	Lowland calcareous grassland Other neutral grassland Lowland mixed deciduous woodland	O-F F O
Triticum aestivum	Bread Wheat	Other neutral grassland	R
Ulex europeaus	Gorse	Lowland calcareous grassland Lowland mixed deciduous woodland Mixed scrub	0 R-0 0
Ulmus sp.	An Elm	Lowland mixed deciduous woodland Mixed scrub	R O
Urticae dioica	Common Nettle	Lowland calcareous grassland Other neutral grassland Modified grassland Lowland mixed deciduous woodland Bramble scrub Mixed scrub	LF-LA F-LA A O-LA F O

Scientific name	Common name	Habitat/s	Abundance in habitat type
<i>Valeriana</i> sp.	A Valerian	Lowland calcareous grassland	R
		Lowland calcareous grassland	O-F
Veronica chamaedrys	Germander	Other neutral grassland	O-F
onamacaryo	opecawei	Lowland mixed deciduous woodland	0
Veronica montana	Wood Speedwell	Lowland mixed deciduous woodland	O-F
Veronica officinalis	Heath Speedwell	leath Speedwell Lowland calcareous grassland	
	Mostering tree	Lowland mixed deciduous woodland	R-0
Viburnum lantana	waylaring-tree	Mixed scrub	0
		Lowland calcareous grassland	0
Vicia sativa	Common Vetch	Other neutral grassland	0
		Lowland mixed deciduous woodland	0

Appendix 4: 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

- Eptesicus serotinus Serotine
- Nyctalus leisleri Leisler's Bat
- Nyctalus noctula Noctule
- Pipistrellus nathusii Nathusius' Pipistrelle
- Pipistrellus pipistrellus Common
 Pipstrelle
- Plecotus auritus Brown Long-eared

Birds

- Alauda arvensis Skylark
- Anthus trivialis Tree Pipit
- Columba palumbus Woodpigeon
- Corvus corone Carrion Crow
- Cuculus canorus Cuckoo
- Emberiza citrinella Yellowhammer
- Falco subbuteo Hobby
- Loxia curvirostra Common Crossbill
- Parus major Great Tit
- Pica pica Magpie
- Turdus iliacus Redwing
- Turdus philomelos Song Thrush
- Turdus pilaris Fieldfare
- Vanellus vanellus Lapwing

Mammals (except bats)

- Arvicola amphibius European Water Vole
- Erinaceus europaeus West European Hedgehog
- Lutra lutra European Otter
- Meles meles Eurasian Badger
- *Muscardinus avellanarius* Hazel Dormouse
- Mustela putorius Polecat
- Oryctolagus cuniculus Rabbit

Reptiles

- Anguis fragilis Slow-worm
- Natrix helvetica Grass Snake
- Zootoca vivipara Common Lizard

Invertebrates

- Acronicta psi Grey Dagger
- Agelena labyrinthica Labyrinth Spider
- Bombus lucorum/terrestris White/Buff-tailed Bumblebee
- *Bombus pascuorum* Common Carder Bee
- Coenonympha pamphilus Small Heath
- Cupido minimus Small Blue
- Erynnis tages Dingy Skipper
- Gonepteryx rhamni Brimstone
- Helix pomatia Roman Snail
- Lampyris noctiluca Glow-worm
- *Limenitis camilla* White Admiral
- Pararge aegeria Speckled Wood
- Polyommatus coridon Chalk Hill Blue
- Polyommatus icarus Common Blue
- *Pyrgus malvae* Grizzled Skipper
- Satyrium w-album White-letter Hairstreak
- Speyeria aglaja Dark Green Fritillary
- Thecla betulae Brown Hairstreak
- Tyria jacobaeae Cinnabar
- Vanessa atalanta Red Admiral

Appendix 5: Habitat condition forms

Habitat	Compartment number	Condition	JustificationInvalid source specified.		
			Criteria	Score	Comment
			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 type are consistently present	Pass	Upright Brome grassland with numerous calcareous indicator species.
			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	Mixed sward overall, with areas more grazed by Rabbits or trampled by walkers, and taller tussocky areas.
Lowland calcareous	nd ous and at at		Cover of bare ground is between 1% and 5%, including localised areas, for example, Rabbit warrens	Pass	Just falls within threshold.
grassland Habitat		1.1 Good	Cover of Bracken is less than 20% and cover of scrub (including bramble) is less than 5%	Pass	No Bracken recorded. Scrub <5% although will required continued management.
Code: g2a			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 WCA). Are present this criterion is automatically failed.	Pass	No Schedule 9 species, little to no sub-optimal species, no signs of damage.
			There are 10 or more vascular plant species per m ² present, including forbs that are characteristic of the habitat type (not including negative indicators). This criterion is vital for achieving good condition	Pass	Averages 14.8 over five quadrats.
Lowland calcareous grassland	1.2	Moderate	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 type are consistently present	Pass	Upright Brome grassland with numerous calcareous indicator species.

Habitat	Compartment number	Condition	JustificationInvalid s	ource sp	becified.
			Criteria	Score	Comment
Habitat Code: g2a			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	Mixed sward overall, with areas more grazed by Rabbits or trampled by walkers, and taller tussocky areas.
			Cover of bare ground is between 1% and 5%, including localised areas, for example, Rabbit warrens	Fail	>5% due to Rabbit activity and footpaths.
			Cover of Bracken is less than 20% and cover of scrub (including bramble) is less than 5%	Pass	No Bracken recorded. Scrub <5% although will required continued management.
			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 WCA). Are present this criterion is automatically failed.	Fail	>5% cover caused by ruderal swathes.
			There are 10 or more vascular plant species per m ² present, including forbs that are characteristic of the habitat type (not including negative indicators). This criterion is vital for achieving good condition	Pass	Averages 16.6 over five quadrats.
Lowland calcareous grassland Habitat Code: g2a	1.3	1.3 Moderate	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 type are consistently present	Pass	Upright Brome grassland with numerous calcareous indicator species.
			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	Mixed sward overall, with areas more grazed by Rabbits or trampled by walkers, and taller tussocky areas.
			Cover of bare ground is between 1% and 5%, including localised areas, for example, Rabbit warrens	Fail	>5% due to Rabbit activity and footpaths.

Habitat	Compartment number	Condition	JustificationInvalid source specified.			
			Criteria	Score	Comment	
			Cover of Bracken is less than 20% and cover of scrub (including bramble) is less than 5%	Fail	Scrub >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 WCA). Are present this criterion is automatically failed.	Fail	>5% cover caused by ruderal swathes.	
			There are 10 or more vascular plant species per m ² present, including forbs that are characteristic of the habitat type (not including negative indicators). This criterion is vital for achieving good condition	Pass	Averages 13.75 over four quadrats.	
Lowland calcareous grassland Habitat Code: g2a	1.4	1.4 Good	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 type are consistently present	Pass	Upright Brome grassland with numerous calcareous indicator species.	
			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	Mixed sward overall, with areas more grazed by Rabbits or trampled by walkers, and taller tussocky areas.	
			Cover of bare ground is between 1% and 5%, including localised areas, for example, Rabbit warrens	Pass	Just falls within threshold.	
			Cover of Bracken is less than 20% and cover of scrub (including bramble) is less than 5%	Pass	No Bracken recorded. Scrub <5% although will required continued management.	
			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	Pass	No Schedule 9 species, little to no sub-optimal species, no signs of damage.	

Habitat	Compartment number	Condition	JustificationInvalid source specified.			
			Criteria	Score	Comment	
			damaging management activities) accounts for less than 5% of total area. If any invasive non-native plant species (as listed on Schedule 9 of WCA). Are present this criterion is automatically failed.			
			There are 10 or more vascular plant species per m ² present, including forbs that are characteristic of the habitat type (not including negative indicators). This criterion is vital for achieving good condition	Pass	Averages 13.25 over five quadrats.	
Lowland	1.5	1.5 Moderate	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 type are consistently present	Pass	Upright Brome grassland with numerous calcareous indicator species.	
			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	Mixed sward overall, with areas more grazed by Rabbits or trampled by walkers, and taller tussocky areas.	
grassland Habitat			Cover of bare ground is between 1% and 5%, including localised areas, for example, Rabbit warrens	Pass	Just falls within threshold.	
Code: g2a			Cover of Bracken is less than 20% and cover of scrub (including bramble) is less than 5%	Fail	Scrub >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 WCA). Are present this criterion is automatically failed	Fail	Common Nettle >5%.	

Habitat	Compartment number	Condition	JustificationInvalid source specified.			
			Criteria	Score	Comment	
			There are 10 or more vascular plant species per m ² present, including forbs that are characteristic of the habitat type (not including negative indicators). This criterion is vital for achieving good condition	Fail	Averages 9.8 over five quadrats.	
		1.6 Moderate	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 type are consistently present	Pass	Upright Brome grassland with numerous calcareous indicator species.	
			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	Just on threshold.	
Lowland calcareous			Cover of bare ground is between 1% and 5%, including localised areas, for example, Rabbit warrens	Fail	>5% due to Rabbit activity and footpaths.	
grassland Habitat	1.6		Cover of Bracken is less than 20% and cover of scrub (including bramble) is less than 5%	Fail	Scrub >5%.	
Code: g2a			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 WCA). Are present this criterion is automatically failed.	Fail	Excessive damage, trampling and cotoneaster present.	
			There are 10 or more vascular plant species per m ² present, including forbs that are characteristic of the habitat type (not including negative indicators). This criterion is vital for achieving good condition	Pass	Averages 10 over five quadrats.	

Habitat	Compartment number	Condition	JustificationInvalid source specified.		
			Criteria	Score	Comment
			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 type are consistently present	Pass	Upright Brome grassland with numerous calcareous indicator species.
			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	Just on threshold.
Lowland calcareous	and eous and tat e: a		Cover of bare ground is between 1% and 5%, including localised areas, for example, Rabbit warrens	Fail	>5% cue to motorbike damage.
grassland Habitat		1.7 Moderate	Cover of Bracken is less than 20% and cover of scrub (including bramble) is less than 5%	Fail	Scrub >5%.
Code: g2a			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 WCA). Are present this criterion is automatically failed.	Fail	Excessive damage due to motorbikes.
			There are 10 or more vascular plant species per m ² present, including forbs that are characteristic of the habitat type (not including negative indicators). This criterion is vital for achieving good condition	Pass	Averages >10.
Other neutral grassland	1.8	Poor	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 type are consistently present	Fail	Appears to be on the cusp of modified grassland, and the substrate indicates it should be calcareous grassland.

Habitat	Compartment number	Condition	JustificationInvalid s	source sp	becified.
			Criteria	Score	Comment
Habitat Code: g3c			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	Short sward along path, with bounding taller swards.
			Cover of bare ground is between 1% and 5%, including localised areas, for example, Rabbit warrens	Pass	<5%.
			Cover of Bracken is less than 20% and cover of scrub (including bramble) is less than 5%	Fail	Scrub >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 WCA). Are present this criterion is automatically failed.	Fail	Suboptimal species >5%.
			There are 10 or more vascular plant species per m ² present, including forbs that are characteristic of the habitat type (not including negative indicators). This criterion is vital for achieving good condition	Fail	Averages 6 over one quadrat.
Other neutral grassland Habitat Code: g3c	1.9	1.9 Poor	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 type are consistently present	Fail	Appears to be on the cusp of calcareous grassland, and the substrate indicates that it should be.
			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	Mainly short sward due to damage.
			Cover of bare ground is between 1% and 5%, including localised areas, for example, Rabbit warrens	Fail	>5% by a significant amount due to damage.

Habitat	Compartment number	Condition	JustificationInvalid source specified.			
			Criteria	Score	Comment	
			Cover of Bracken is less than 20% and cover of scrub (including bramble) is less than 5%	Pass	No Bracken, scrub <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 WCA). Are present this criterion is automatically failed.	Fail	Large amount of damage from burning.	
			There are 10 or more vascular plant species per m ² present, including forbs that are characteristic of the habitat type (not including negative indicators). This criterion is vital for achieving good condition	Fail	Averages ~9.	
			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 type are consistently present	Pass	False Oat-grass grassland.	
Other neutral grassland	1.10	Moderate	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	Well mixed.	
Habitat Code: g3c	nt 3C		Cover of bare ground is between 1% and 5%, including localised areas, for example, Rabbit warrens	Fail	>5%.	
			Cover of Bracken is less than 20% and cover of scrub (including bramble) is less than 5%	Pass	Meets both thresholds.	
			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	Fail	Japanese Knotweed.	

Habitat	Compartment number	Condition	JustificationInvalid source specified.		
			Criteria	Score	Comment
			damaging management activities) accounts for less than 5% of total area. If any invasive non-native plant species (as listed on Schedule 9 of WCA). Are present this criterion is automatically failed.		
			There are 10 or more vascular plant species per m ² present, including forbs that are characteristic of the habitat type (not including negative indicators). This criterion is vital for achieving good condition	Fail	Averages 7 over five quadrats.
Modified grassland – Tall forbs	1.11	1.11 Poor	Vegetation structure is varied, providing opportunities for vertebrates and invertebrates to live, eat and breed. A single structural habitat component or vegetation type does not account for more than 80% of the total habitat area.	Fail	Mainly single level tall ruderal.
			The habitat parcel contains different plant species that are beneficial for wildlife, for example flowering species providing nectar sources for a range of invertebrates at different times of year.	Fail	Few species.
Habitat Code: g4- 16			Invasive non-native plant species (listed on Schedule 9 of WCA) and others which are to the detriment of native wildlife (using professional judgement) cover less than 5% of the total vegetated area. To achieve good condition, this criterion must be satisfied by a complete absence of invasive non-native species (rather than <5% cover).	Pass	Meets thresholds.
Lowland			Age distribution of trees	3	All present.
mixed			Wild, domestic and feral herbivore damage	3	No significant evidence present.
deciduous woodland	2.1	Moderate	Invasive plant species	1	Cherry Laurel present, Variegated Yellow- archangel present <40%.
Habitat			Number of native tree species	3	>5 native trees and shrubs.
			Cover of native tree and shrub species	3	~2-5% non-native.

Habitat	Compartment number	Condition	JustificationInvalid source specified.		
			Criteria	Score	Comment
			Open space within woodland	1	<10% of woodland has temporary open space.
			Woodland regeneration	3	Regeneration evidence abundant.
			Tree health	1	Ash dieback is present, Oak processionary moth present.
			Vegetation and ground flora	2	Mix of W8 and W10 NVC communities.
			Woodland vertical structure	3	Complex.
			Veteran trees	1	No veteran trees observed. Will likely form over time as Oaks and Sycamores continue to age.
			Amount of dead wood	3	Deadwood abundant.
			Woodland disturbance	2	There will be nutrient enrichment caused by dog fouling in the areas bounding footpaths.
			Total	29	
			Age distribution of trees	3	All present.
			Wild, domestic and feral herbivore damage	3	No significant evidence present.
Lowland			Invasive plant species	1	Cherry Laurel present.
mixed			Number of native tree species	3	>5 native trees and shrubs.
deciduous	2.2	Moderate	Cover of native tree and shrub species	3	<5% non-native.
Habitat Code: w1f			Open space within woodland	1	<10% of woodland has temporary open space.
			Woodland regeneration	3	Regeneration evidence abundant.
			Tree health	1	Ash dieback is present, Oak processionary moth present.
			Vegetation and ground flora	2	W10 NVC community.

Habitat	Compartment number	Condition	JustificationInvalid s	source sp	ource specified.					
			Criteria	Score	Comment					
			Woodland vertical structure	3	Complex.					
			Veteran trees	1	No veteran trees observed. Will likely form over time as Oaks and Sycamores continue to age.					
			Amount of dead wood	3	Deadwood abundant.					
			Woodland disturbance	2	There will be nutrient enrichment caused by dog fouling in the areas bounding footpaths.					
			Total	29						
			Age distribution of trees	3	All present.					
			Wild, domestic and feral herbivore damage	3	No significant evidence present.					
			Invasive plant species	1	Cherry Laurel present.					
			Number of native tree species	3	>5 native trees and shrubs.					
Lowland			Cover of native tree and shrub species	3	<5% non-native.					
mixed			Open space within woodland	3	10-20% open.					
woodland	2.3	Moderate	Woodland regeneration	3	Regeneration evidence abundant.					
Habitat			Tree health	1	Ash dieback is present, Oak processionary moth present.					
			Vegetation and ground flora	2	Mix of W8 and W10 NVC communities.					
			Woodland vertical structure	3	Complex.					
			Veteran trees	2	Some Oaks with veteran features present in low numbers.					
			Amount of dead wood	3	Deadwood abundant.					

Habitat	Compartment number	Condition	JustificationInvalid s	ource specified.					
			Criteria	Score	Comment				
			Woodland disturbance	2	There will be nutrient enrichment caused by dog fouling in the areas bounding footpaths.				
			Total	32					
			Age distribution of trees	3	All present.				
			Wild, domestic and feral herbivore damage	3	No significant evidence present.				
			Invasive plant species	1	Cherry Laurel present.				
Lowland			Number of native tree species	3	>5 native trees and shrubs.				
		Moderate	Cover of native tree and shrub species	3	<5% non-native.				
			Open space within woodland	3	10-20% open.				
mixed			Woodland regeneration	3	Regeneration evidence abundant.				
deciduous woodland	2.4		Tree health	1	Ash dieback is present, Oak processionary moth present.				
Habitat			Vegetation and ground flora	2	Mix of W8 and W10 NVC communities.				
Code: W1f			Woodland vertical structure	3	Complex.				
			Veteran trees	2	Some Oaks with veteran features present in low numbers.				
			Amount of dead wood	3	Deadwood abundant.				
			Woodland disturbance	2	There will be nutrient enrichment caused by dog fouling in the areas bounding footpaths.				
			Total	32					
Lowland	2.5	Moderato	Age distribution of trees	2	Two present (no old).				
mixed	2.5	WOUCHALE	Wild, domestic and feral herbivore damage	3	No significant evidence present.				

Habitat	Compartment number	Condition	JustificationInvalid source specified.									
			Criteria	Score	Comment							
deciduous			Invasive plant species	1	Cherry Laurel present.							
Woodiand			Number of native tree species	3	>5 native trees and shrubs.							
Code: w1f			Cover of native tree and shrub species	3	<5% non-native.							
			Open space within woodland	3	<10ha.							
			Woodland regeneration	3	Regeneration evidence abundant.							
			Tree health	1	Ash dieback is present, Oak processionary moth present.							
			Vegetation and ground flora	1	Ivy and leaf litter predominate.							
			Woodland vertical structure	3	Complex.							
			Veteran trees	1	None present.							
			Amount of dead wood	3	Deadwood abundant.							
			Woodland disturbance	2	Likely influenced by road runoff.							
			Total	29								
			Age distribution of trees	3	All present.							
Lowland			Wild, domestic and feral herbivore damage	3	No significant evidence present.							
mixed			Invasive plant species	1	Cherry Laurel present.							
woodland	2.6	Moderate	Number of native tree species	3	>5 native trees and shrubs.							
Habitat			Cover of native tree and shrub species	3	<5% non-native.							
Code: w1f			Open space within woodland	3	<10ha.							
			Woodland regeneration	3	Regeneration evidence abundant.							

Habitat	Compartment number	Condition	JustificationInvalid s	ource specified.					
			Criteria	Score	Comment				
			Tree health	1	Ash dieback is present, Oak processionary moth present.				
			Vegetation and ground flora	1	lvy and leaf litter predominate.				
			Woodland vertical structure	3	Complex.				
			Veteran trees	1	None present.				
			Amount of dead wood	3	Deadwood abundant.				
			Woodland disturbance	2	Likely influenced by road runoff.				
			Total	30					
			Age distribution of trees	3	All present.				
			Wild, domestic and feral herbivore damage	3	No significant evidence present.				
			Invasive plant species	1	Cherry Laurel present, and hollyberry cotoneaster.				
			Number of native tree species	3	>5 native trees and shrubs.				
Lowland			Cover of native tree and shrub species	3	<5% non-native.				
mixed deciduous			Open space within woodland	3	<10ha.				
woodland	2.7	Moderate	Woodland regeneration	3	Regeneration evidence abundant.				
Habitat Code: w1f			Tree health	1	Ash dieback is present, Oak processionary moth present.				
			Vegetation and ground flora	2	Mix of W8 and W10 NVC communities.				
			Woodland vertical structure	3	Complex.				
			Veteran trees	1	None recorded.				
			Amount of dead wood	3	Deadwood abundant.				

Habitat	Compartment number	Condition	JustificationInvalid s	ource specified.					
			Criteria	Score	Comment				
			Woodland disturbance	2	Likely influenced by road runoff.				
			Total	31					
			Age distribution of trees	3	All present.				
			Wild, domestic and feral herbivore damage	3	No significant evidence present.				
			Invasive plant species	2	Cherry Laurel not recorded. Other invasive non- native species present.				
Lowland mixed			Number of native tree species	3	>5 native trees and shrubs.				
		Good	Cover of native tree and shrub species	3	<5% non-native.				
			Open space within woodland	3	<10ha.				
deciduous	2.8		Woodland regeneration	3	Regeneration evidence abundant.				
woodland Habitat			Tree health	1	Ash dieback is present, Oak processionary moth present.				
Code: w1f			Vegetation and ground flora	2	Mix of W8 and W10 NVC communities.				
			Woodland vertical structure	3	Complex.				
			Veteran trees	2	Some Oaks with veteran features.				
			Amount of dead wood	3	Deadwood abundant.				
			Woodland disturbance	2	Likely influenced by road runoff.				
			Total	33					
Lowland			Age distribution of trees	2	Two present (no old).				
mixed	2.9	Moderate	Wild, domestic and feral herbivore damage	3	No significant evidence present.				
woodland	2.0	WOUGLAIG	Invasive plant species	1	Cherry Laurel present alongside other invasive non-native species.				

Habitat	Compartment number	Condition	JustificationInvalid s	source specified.					
			Criteria	Score	Comment				
Habitat			Number of native tree species	3	>5 native trees and shrubs.				
Code: W1f			Cover of native tree and shrub species	3	<5% non-native.				
			Open space within woodland	3	<10ha.				
			Woodland regeneration	3	Regeneration evidence abundant.				
			Tree health	1	Ash dieback is present, Oak processionary moth present.				
			Vegetation and ground flora	2	Mix of W8 and W10 NVC communities.				
			Woodland vertical structure	3	Complex.				
			Veteran trees	2	Some Oaks with veteran features.				
			Amount of dead wood	3	Deadwood abundant.				
			Woodland disturbance	2	There will be nutrient enrichment caused by dog fouling in the areas bounding footpaths.				
			Total	31					
Mixed			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.	Pass	>10 native woody species.				
scrub Habitat Code: h3h	3.2-3.6	Good	At least 80% of scrub is native, and there are at least three native woody species, 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).						
			Seedlings, saplings, young shrubs and mature (or ancient or veteran) shrubs are all present.	Pass	A mixture of all of these.				

Habitat	Compartment number	Condition	JustificationInvalid s	source sp	pecified.
			Criteria	Score	Comment
			There is an absence of invasive non-native plant species (as listed on Schedule 9 of WCA) and species indicative of sub-optimal condition make up less than 5% of ground cover.	Pass	None recorded.
			The scrub has a well-developed edge with scattered scrub and tall grassland and/or forbs present between the scrub and adjacent habitat.	Pass	Clearly defined.
			There are clearings, glades or rides present within the scrub, providing sheltered edges.	Pass	Clearings and glades are present within and between parcels.
Mixed			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 species, 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	>5 native woody species.
scrub	3.7-3.8	Good	Seedlings, saplings, young shrubs and mature (or ancient or veteran) shrubs are all present.	Pass	A mixture of all of these.
Code: h3h			There is an absence of invasive non-native plant species (as listed on Schedule 9 of WCA) and species indicative of sub-optimal condition make up less than 5% of ground cover.	Pass	None recorded.
			The scrub has a well-developed edge with scattered scrub and tall grassland and/or forbs present between the scrub and adjacent habitat.	Pass	Clearly defined.
			There are clearings, glades or rides present within the scrub, providing sheltered edges.	Pass	Clearings and glades are present within and between parcels.
	3.9	Good	The scrub is a good representation of the habitat type it has been identified as, based on its UKHab description (where in its natural	Pass	>5 native woody species.

Habitat	Compartment number	Condition	JustificationInvalid s	Justification Invalid source specified.										
			Score	Comment										
			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 species, 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).											
Mixed scrub			Seedlings, saplings, young shrubs and mature (or ancient or veteran) shrubs are all present.	Pass	A mixture of all of these.									
Habitat Code: h3h			There is an absence of invasive non-native plant species (as listed on Schedule 9 of WCA) and species indicative of sub-optimal condition make up less than 5% of ground cover.	Pass	None recorded.									
			The scrub has a well-developed edge with scattered scrub and tall grassland and/or forbs present between the scrub and adjacent habitat.	Pass	Clearly defined.									
			There are clearings, glades or rides present within the scrub, providing sheltered edges.	Pass	Clearings and glades are present within and between parcels.									

Appendix 6: Relevant legislation Legislation

Metropolitan Commons and Metropolitan Commons (Banstead) Supplementary Act 1866

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 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 Right 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 or recklessly remove, or cause or permits 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 criteria 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:

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

Protection of protected species and habitats

Amphibians

Great Crested Newt is protected under the Conservation of Habitats and Species Regulations 2017 (as amended). They are also afforded additional protection under the Wildlife and Countryside Act 1981 (as amended).

Great Crested Newt is also a SPI.

Reptiles

Smooth Snake and Sand Lizard are protected under the Conservation of Habitats and Species Regulations 2017 (as amended). They are afforded additional protection under the Wildlife and Countryside Act 1981 (as amended).

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 Longeared, 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 species listed under Schedule 9 of the act.

Habitats of Principal Importance

Section 41 of the NERC Act 2006 details 56 HPIs, 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 7: Protected species and species of conservation concern desk study results (SBIC, 2023)

Records from site

Scientific name	Common Name	Habitat Regulations 1	WCA ²	Protection of Badgers Act 1992	SPI ³	RDL/ Nationally Rare/ Scarce⁴	BoCC⁵	Ax ⁶	AWI ⁷	GI ⁸	Relev
	1		•		Inverte	brate					
Andrena marginata	Small Scabious Mining Bee					~					Heathland, calc
Andrena minutuloides	Plain Mini-miner					✓					Calcareous gras
Bombus rupestris	Red-tailed Cuckoo Bee					✓					Va
Chrysis gracilima	A Cuckoo Wasp					✓					Heathland, a
Chrysis illigeri	A Ruby-tailed Wasp					✓					Heathland, a
Coenonympha pamphilus	Small Heath				~	~					Heathland, acid grassla
Cryptocephalus hypochaeridis	A Pot Beetle					~					Calcareou
Cupido minimus	Small Blue		Sch 5 Section 9.5a		~	✓					Calcareou
Erynnis tages	Dingy Skipper				~	✓					Calcareous grassland, m
Helix (Helix) pomatia	Roman Snail		Sch 5 Section 9.1, 9.2, 9.5a			~					Calcareou
Hylaeus cornutus	Spined Hylaeus					✓					Calcareous gra
Hylaeus signatus	Large Yellow-face Bee					\checkmark					Calcareous gr
Lasioglossum malachurum	Sharp-collared Furrow-bee					✓					Va
Lasioglossum pauxillum	Lobe-spurred Furrow- bee					~					Acid grassland, ca
Leptogaster guttiventris	Dashed Slender Robberfly					~					
Melitta tricincta	Red Bartsia Blunthorn Bee					~					Calcareous grassl
Myopa pellucida	A Thick-headed Fly					✓					
Nomada fucata	Painted Nomad Bee					\checkmark					Va
Osmia bicolor	Red-tailed Mason Bee					\checkmark					Calcareou
Philanthus triangulum	Bee Wolf					\checkmark					
Polyommatus coridon	Chalk Hill Blue		Sch 5 Section 9.5a			✓					
Priocnemis agilis	A Spider-hunting Wasp					✓					Heathland, acid grassla
Pyrgus malvae	Grizzled Skipper				~	\checkmark					Calcareous grassland, m
Satyrium w-album	White-letter Hairstreak		Sch 5 Section 9.5a		~	~					Mixed deciduous w
Solva marginata	Drab Wood-soldierfly					\checkmark					Various (o
Stelis punctulatissima	Banded Dark Bee					\checkmark					Va
Thecla betulae	Brown Hairstreak		Sch 5 Section 9.5a		\checkmark	\checkmark					Hedgerows, mixed
Thereva plebeja	Crochet-hooked Stiletto					~					Va
					Bir	d					

vant HPI

areous grasslands.

ssland, meadows.

rious.

acid grassland.

acid grassland.

and, calcareous grassland.

us grassland.

us grassland.

nixed deciduous woodland.

us grassland.

assland, various.

rassland, urban.

rious.

alcareous grassland.

land (on Odontites).

rious.

us grassland.

and, calcareous grassland.

ixed deciduous woodland.

voodland, hedgerows.

on *Populus)*.

rious.

deciduous woodland.

rious

Scientific name	Common Name	Habitat Regulations 1	WCA ²	Protection of Badgers Act 1992	SPI ³	RDL/ Nationally Rare/ Scarce⁴	BoCC⁵	Ax ⁶	AWI ⁷	GI ⁸ Relevant HPI
Accipiter nisus	Eurasian Sparrowhawk					~	Amber			
Columba palumbus	Wood Pigeon					✓	Amber			Various.
Falco tinnunculus	Common Kestrel					✓	Amber			Various.
Passer domesticus	House Sparrow				✓		Red			Urban, hedgerows.
Phylloscopus trochilus	Willow Warbler						Amber			Heathland, wet woodland.
Prunella modularis	Dunnock						Amber			Various.
Pyrrhula pyrrhula	Bullfinch						Amber			
Sturnus vulgaris	Common Starling					✓	Red			Urban.
Troglodytes troglodytes	Wren						Amber			
Turdus iliacus	Redwing		Sch 1 Part 1			\checkmark	Amber			Various.
Turdus philomelos	Song Thrush						Amber			Various.
Turdus pilaris	Fieldfare		Sch 1 Part 1			\checkmark	Red			Various.
				Higher and L	ower Pla	ınts; Vascula	r Plant		-	
Allium schoenoprasum	Chives					~		~		
Anacamptis morio	Green-winged Orchid					✓		✓		\checkmark
Arabis hirsute	Hairy Rock-cress					✓		✓		\checkmark
Briza media	Quaking-grass					✓		✓		\checkmark
Calluna vulgaris	Heather					✓		✓		\checkmark
Campanula rotundifolia	Harebell					~		~		\checkmark
Carlina vulgaris	Carline Thistle					✓		✓		\checkmark
Centaurea cyanus	Cornflower				~			✓		
Cerastium pumilum	Dwarf Mouse-ear					✓		✓		\checkmark
Clinopodium acinos	Basil Thyme				~	✓		✓		\checkmark
Euphrasia nemorosa	Common Eyebright					✓		✓		\checkmark
Euphrasia pseudokerneri	Chalk Eyebright				~	~		~		\checkmark
Filago pyramidata	Broad-leaved Cudweed		Sch 8		~	~		~		\checkmark
Gentianella amarella	Autumn Gentian					\checkmark		\checkmark		\checkmark
Gentianella amarella subsp. amarella	Autumn Gentian					~		~		\checkmark
Gentianella anglica	Early Gentian	Sch 5	Sch 8		✓					
Helianthemum nummularium	Common Rock-rose					~		~		\checkmark
Hieracium sabaudum	Autumn Hawkweed					✓				\checkmark
Hyoscyamus niger	Henbane					✓		\checkmark		
Juniperus communis	Juniper				\checkmark	✓		\checkmark		
Juniperus communis subsp. communis	Common Juniper					~		~		
Knautia arvensis	Field Scabious					✓		✓		\checkmark

Scientific name	Common Name	Habitat Regulations 1	WCA ²	Protection of Badgers Act 1992	SPI ³	RDL/ Nationally Rare/ Scarce⁴	BoCC⁵	Ax ⁶	AWI ⁷	GI ⁸	Relevant HPI
Lepidium campestre	Field Pepperwort					✓		✓			
Mentha suaveolens	Round-leaved Mint					✓		✓			
Orchis anthropophora	Man Orchid				\checkmark	✓		✓		\checkmark	
Phyteuma orbiculare	Round-headed Rampion					~		~		~	
Plantago media	Hoary Plantain					✓		\checkmark		\checkmark	
Potentilla erecta	Tormentil					✓		\checkmark		\checkmark	
Potentilla erecta subsp. erecta	Tormentil					\checkmark					
Rhinanthus angustifolius	Greater Yellow-rattle		Sch 8			\checkmark		~		~	
Rubus britannicus	A Bramble					✓					
Sagina nodosa	Knotted Pearlwort					\checkmark		\checkmark		\checkmark	
Sanicula europaea	Sanicle					\checkmark		\checkmark	\checkmark		
Solidago virgaurea	Goldenrod					✓		\checkmark	\checkmark	\checkmark	
Thesium humifusum	Bastard-toadflax					✓		\checkmark		\checkmark	
Valeriana officinalis	Common Valerian					✓		\checkmark		\checkmark	
Veronica officinalis	Heath Speedwell					✓		\checkmark		\checkmark	
Viola canina	Heath Dog-violet					✓		\checkmark			
	1	-		Invasiv	ve Non-n	ative Species	;	1	1		
Allium triquetrum	Three-cornered Garlic		Sch 9 Part 2 (England & Wales only)								
Cotoneaster simonsii	Himalayan Cotoneaster		Sch 9 Part 2 (England & Wales only)								
Crocosmia x crocosmiiflora	Montbretia		Sch 9 Part 2 (England & Wales only)								
Eriocheir sinensis	Chinese mitten crab		Sch 9 Part 1 (England & Wales only)								
Lamiastrum galeobdolon subsp. argentatum	Variegated Yellow Archangel		Sch 9 Part 2 (England & Wales only)								
Psittacula krameria	Ring-necked Parakeet		Sch 9 Part 1								
Reynoutria japonica	Japanese Knotweed		Sch 9 Part 2								
Sciurus carolinensis	Eastern Grey Squirrel		Sch 9 Part 1								

Additional records from within 1km of site

Scientific name	Common Name	Habitat Regulations ¹	WCA ²	Protection of Badgers Act 1992	SPI ³	RDL/ Nationally Rare/ Scarce ⁴	BoCC⁵	Ax ⁶	AWI ⁷	GI ⁸	Relev
					Inverte	brate					
Andrena bimaculate	Large Gorse Mining Bee					~					Acid g
Andrena tibialis	Grey-gastered Mining Bee					~					Vai

yant HPI grassland. arious.

						1			_	
Scientific name	Common Name	Habitat Regulations ¹	WCA ²	Protection of	SPI ³	RDL/ Nationally	BoCC⁵	Ax ⁶ AW	'l' GI	Relevant HPI
				Badgers Act 1992		Rare/ Scarce⁴				
Andrena varians	Blackthorn Mining Bee					~				Various.
Apamea remissa	Dusky Brocade				✓					Various.
Asilus crabroniformis	Hornet Robberfly				\checkmark					Acid grassland, calcareous grassland, heathland.
Cheilosia barbata	Parsnip Cheilosia					√				Mixed deciduous woodland.
Cheilosia cynocephala	Musk-thistle Cheilosia					✓				
Chrysotoxum elegans	Variable Wasp Hoverfly					~				Calcareous grassland, meadows.
Ennomos fuscantaria	Dusky Thorn				\checkmark					Mixed deciduous woodland.
Gymnosoma rotundatum	A parasitic fly					~				
Hemitrichapion relfexum	A Clover Weevil					~				
Lasioglossum xanthopus	Orange-footed Furrow Bee					~				Calcareous grassland.
Lucanus cervus	Stag Beetle		Sch 5 Section 9.5a		\checkmark	✓				Various, wood pasture and parkland.
Microdynerus exilis	Little Mason Wasp					✓				Various.
Nysson trimaculatus	Six-spotted Wasp- cuckoo					~				Acid grassland, calcareous grassland.
Protapion filirostre	A Clover Weevil					✓				
Sciocoris (Sciocoris) cursitans	Sandrunner					~				Calcareous grassland, acid grassland.
Scotopteryx chenopodiata	Shaded Broad-bar				\checkmark					Various.
Spilosoma lubricipeda	White Ermine				✓					Various.
Tychius schneideri	A true Weevil					✓				
Tyria jacobaeae	Cinnabar				\checkmark					
					Amphik	bian				
Bufo bufo	Common Toad		Sch 5 Section 9.5a		✓	✓				Various wetlands.
Lissotriton vulgaris	Smooth Newt		Sch 5 Section 9.5a							
Rana temporaria	Common Frog		Sch 5 Section 9.5a							
Triturus cristatus	Great Crested Newt	Sch 2	Sch 5 Section 9.4b-c, 9.5a		\checkmark					
					Repti	ile				
Natrix helvetica	Grass snake		Sch 5 Section 9.1 (kill/ injuring), 9.5a		\checkmark					Various.
Zootoca vivipara	Common Lizard		Sch 5 Section 9.1 (kill/ injuring), 9.5a		✓					Various.
			-		Bira	1				
Acanthis flammea	Redpoll					\checkmark	Red			Woodland.
Alauda arvensis	Skylark				\checkmark		Red			Calcareous grassland, acid grassland, arable field margins.
Anas platyrhynchos	Mallard					\checkmark	Amber			
Anthus pratensis	Meadow Pipit						Amber			Heathland, acid grassland, meadows.
Anthus trivialis	Tree Pipit				\checkmark		Red			Heathland.

Scientific name	Common Name	Habitat Regulations ¹	WCA ²	Protection of Badgers Act 1992	SPI ³	RDL/ Nationally Rare/ Scarce⁴	BoCC⁵	Ax ⁶	AWI ⁷	GI ⁸	Rele
Apus apus	Common Swift					✓	Red				U
Ardea cinerea	Grey Heron					✓					
Chloris chloris	Greenfinch					✓	Red				
Chroicocephalus ridibundus	Black-headed Gull					✓	Amber				
Columba oenas	Stock Dove						Amber				
Corvus frugilegus	Rook					✓	Amber				
Cuculus canorus	Common Cuckoo				✓	✓	Red				Va
Curruca communis	Common Whitethroat						Amber				
Delichon urbicum	House Martin					✓	Red				Urban, sta
Dryobates minor	Lesser Spotted Woodpecker					\checkmark	Red				Mixed deciduous woodland and p
Emberiza citronella	Yellowhammer				✓		Red				Hedgerows, arable f
Emberiza schoeniclus	Reed Bunting				✓		Amber				
Falco Subbuteo	Hobby		Sch 1 Part 1								Heathland, mixed
Larus argentatus	, Herring Gull					✓	Red				Va
Larus canus	Common Gull						Amber				Standing
Larus marinus	Great Black-backed Gull					\checkmark	Amber				Standing
Linaria cannabina	Linnet					✓	Red				Heathland, hedgero
Loxia curvirostra	Common Crossbill		Sch 1 Part 1			✓					Hea
Motacilla cinerea	Grey Wagtail					✓	Amber				Rivers, sta
Phalacrocorax carbo	Great Cormorant					✓					
Poecile palustris	Marsh Tit					✓	Red				Mixed decid
Streptopelia decaocto	Collared Dove					✓					
Strix aluco	Tawny Owl					✓	Amber				Mixed deciduous woodland
Turdus viscivorus	Mistle Thrush					✓	Red				Mixed deciduous woodland
Vanellus vanellus	Northern Lapwing				~	~	Red				Floodplain grazing marsh ma
					Mamr	nal					
Chiroptera	A Bat	Sch 2	Sch 5 Section 9.4b-c, 9.5a								
Eptesicus serotinus	Serotine	Sch 2	Sch 5 Section 9.4b-c, 9.5a			~					Mixed deciduous woodlan u
Erinaceus europaeus	West European Hedgehog				~	~					Urban and gardens, imp horticulture, broadleaved w unimprov
Mustela putorius	Polecat	Sch 4			✓						All h
<i>Myotis</i> sp.	A Myotis	Sch 2	Sch 5 Section 9.4b-c, 9.5a								Va
Nyctalus leisleri	Lesser Noctule	Sch 2	Sch 5 Section 9.4b-c, 9.5a			~					
Nyctalus noctula	Noctule	Sch 2	Sch 5 Section 9.4b-c, 9.5a		~						

vant HPI

Jrban

arious.

anding water.

d, wet woodland, wood pasture parkland.

field margins, heathland.

deciduous woodland

arious.

gwater, rivers.

water, rivers.

ows, arable field margins.

athland.

anding water.

duous woodland.

nd, wood pasture and parkland. nd, wood pasture and parkland. h, standing water, arable field nargins.

nd, wood pasture and parkland, urban.

proved grassland, arable and woodland, coniferous woodland, ved grassland. habitats.

arious.

Scientific name	Common Name	Habitat Regulations ¹	WCA ²	Protection of Badgers Act 1992	SPI ³	RDL/ Nationally Rare/ Scarce⁴	BoCC⁵	Ax ⁶	AWI ⁷	GI ⁸	Rele
Pipistrellus sp.	A Pipistrelle	Sch 2	Sch 5 Section 9.4b-c, 9.5a								
Pipistrellus nathusii	Nathusius' Pipistrelle	Sch 2	Sch 5 Section 9.4b-c, 9.5a			~					
Plecotus auritus	Brown Long-eared	Sch 2	Sch 5 Section 9.4b-c, 9.5a		~						Va
				Higher and Lo	ower Pla	nts; Vascula	r Plant				
Apera spica-venti	Loose Silky-bent					✓		✓			
Buxus sempervirens	Box					✓		✓			
Cephalanthera damsonium	White Helleborine				~	~		~			
Chamaemelum nobile	Chamomile				\checkmark	\checkmark		\checkmark		\checkmark	
Cichorium intybus	Chicory					✓		✓		✓	
Cynodont dactylon	Bermuda-grass					✓		✓			
Epipactis phyllanthes	Green-flowered Helleborine					~		~			
Euphorbia exigua	Dwarf Spurge					✓		✓			
Geranium sanguineum	Bloody Crane's-bill					~					
Glebionis segetum	Corn Marigold					✓		✓			
Helleborus foetidus	Stinking Hellebore					✓		✓			
Hippophae rhamnoides	Sea-buckthorn					~					
Hyacinthoides non- scripta	Bluebell		Sch 8					~	~		
Lepidium latifolium	Dittander					✓		✓			
Ophrys sphegodes	Early Spider-orchid		Sch 8			\checkmark		\checkmark			
Salvia verbenaca	Wild Clary					✓		✓		✓	
Saxifraga hypnoides	Mossy Saxifrage					\checkmark					
Spiranthes spiralis	Autumn Lady's- tresses					~		~		~	
Tilia platyphyllos	Large-leaved Lime					✓		✓			
Trifolium fragiferum subsp. fragiferum	Strawberry Clover					~		~			
Valerianella dentata	Narrow-fruited Cornsalad					~		~			
				Invasiv	e Non-na	ative Species	5				
Branta canadensis	Canada Goose		Sch 9 Part 1								
Cotoneaster bullatus	Hollyberry Cotoneaster		Sch 9 Part 2 (England & Wales only)								
Cotoneaster horizontalis	Wall Cotoneaster		Sch 9 Part 2 (England & Wales only)								

¹ Conservation of Habitats and Species regulations 2017

² Wildlife and Countryside Act 1981, as amended

vant HPI		
rious.		

- ³ Species of Principle Importance
- $^{\rm 4}\,{\rm Species}$ listed on the IUCN Red Data list or identified as Nationally rare or scarce
- ⁵ Birds of Conservation Concern
- ⁶ Surrey Axiophytes
- ⁷ Ancient Woodland Indicator Species
- ⁸ Grassland Indicator Species

Appendix 8: How to build a Stag Beetle loggery

Build a log pile for stag beetles

Stag beetles are one of the largest insects in the UK. They are in decline across Europe but there are many simple things you can do to help.

How you can help stag beetles

Stag beetles don't move far from where they emerge. Although males can fly up to 500m, most female stag beetles don't travel more than 20m and return to where they emerged to lay eggs. This means populations are vulnerable to becoming isolated and if there isn't enough dead wood nearby, dying out all together.

Private gardens are very important habitats for stag beetles. They rely on decaying wood that is in contact with the soil, both to feed on as larvae and in which to lay their eggs.

You can help by building a log pile in your garden to ensure that there is a good supply of suitable dead wood nearby for females to lay their eggs in.



people's trust for endangered

species

Stag beetle facts

- They are Britain's largest native terrestrial beetle
- The larvae develop underground in rotting wood for several years
- The adult only lives for a few weeks in the summer with the sole purpose of finding a mate
- Adult beetles don't eat but rely on the fat stores built up during their larval stage
- The male's antler-like jaws are used to fight off rival males



Please create a log pile for stag beetles and map it at **www.ptes.org/stagbeetle**. For more tips please see over.



mages: Peter Cox, Ben Andrew, PTES

How to make a log pile

people's trust for endangered species

- ▶ Log pyramids can be built at any time of year
- ▶ Use wood from any broadleaved tree
- ▶ The logs should be at least the thickness of an adults arm
- ▶ Site the logs in partial shade if possible to prevent them drying out
- > Partially bury the logs in the soil so that they don't dry out
- Allow plants to grow over the log pyramid to retain moisture and provide shade

Your log pile will also benefit a range of other species including fungi, dead wood invertebrates and the animals that feed on them. It will be a great place for foraging small mammals, basking reptiles and potentially solitary bees.





Appendix 9: Bat box information pack

Bat Conservation Trust



www.bats.org.uk

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.

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, ecostyrocrete, woodcrete, brick or stone. If possible, it's better to provide several internal chambers so that the bats can move around.



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.



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.



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 <u>bat boxes must not be opened by anyone except a</u> <u>licensed bat worker (see 'monitoring bat boxes' below for more details on licences)</u>. 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 ecostyrocrete (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!



CGraham Jeffrey

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: <u>www.habibat.co.uk</u>.

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.



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 rehanging 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!



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 disturbany 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



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

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

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 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 (2^{nd} 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

www.bats.org.uk

www.batcon.org

roost.bats.org.uk

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.

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

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



Material and Tools

This kit requires approximately 1.6m of rough wood and 25 screws (8 x $1\frac{1}{2}$ 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). Registered office: Quadrant House, 250 Kennington Lane, London SE11 5RD Email: <u>enquiries@bats.org.uk</u> National Bat Helpline: 0345 1300 228

Appendix 10

Creating a hibernaculum for amphibians and reptiles

Hibernacula are underground chambers that amphibians and reptiles use through the winter to protect them from the cold.

Reptiles and amphibians will use a range of substrates for hibernacula including piles of rubble, rock, logs and earth banks (with plenty of mammal burrows and ground fissures).

Amphibians require humidity and an artificial hibernaculum should ideally be located near to water, and definitely in sheltered habitat (e.g. in long grass or woodland edge vegetation). They should be free-draining and located in sheltered areas which are neither too dry nor prone to winter flooding or freezing.

To build the hibernaculum, either create a mound or dig a hole containing a mixture of topsoil, rubble, and rough cut logs. Dimensions of the hibernaculum should generally be above 2m length x 1m width x 1m height. Lay bricks, stones, paving slabs or large pieces of concrete over the mound which will create gaps and allow amphibians to access the centre of the mound. A thin layer of soil and brash, can be laid over the top of this, as long as it does not block the hibernaculum access points.

Encourage the growth of vegetation on the north side of the mound to provide extra shelter but prevent vegetation from encroaching onto the south facing side of the mound as sparse vegetation cover here will give animals a suitable location to bask. Periodic thinning of vegetation on the hibernaculum will help prevent a thick root matt developing, which makes it hard for reptiles and insects to burrow into the surface.



Appendix 11: Banstead Downs HLS Agreement Mapping



HIGHER LEVEL STEWARDSHIP OPTIONS MAP

ed colour	- 4	Applicants colour match
	Maintenance of hedgerows/ditches of very high environmental value Management of woodland edges/hedgeror buffer strips	N
6*	Protection of trees *Number within circle represents number of trees in parce	el 6
	Options for woodland	
•	Maintenance of traditional farm buildings/ visibility of archaeological features on mod	orland
	Options for historic and landscape feature	S
	Options for buffer strips and grass margins	S
	Options for arable land	
	Options to encourage a range of crop type	
	Maintenance of watercourse fencing	
	Options to protect soil and water	
	Options for grassland	
	Options for upland grassland and moorlan	d
	Lowland heathland options	
	Inter-tidal and coastal options	
	Wetland options	
4	Capital item	
X12345678	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.

280

560

Metres

Map provided for the sole purpose of supporting ES Scheme Applications and Agreements.

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Application Ref: AG00363472



Appendix 12: European protected species checklist

EPS checklist V3 (publishing.service.gov.uk)

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(Checklist		Details
	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 -	YES	Name of Wood:
	Dormice Otters Great crested newts Sand lizards Smooth snakes		Grid Reference:
	Does your wood contain any of the following habitats? Tick any that apply.	YES	Area: (ha)
	Old trees with holes and crevices which might be used bats Species rich scrub/coppice, early growth stage plantations and forest interfaces Rivers on which others might be found	NO	
	Ponds which might be occupied by great crested newts Open areas on heathy soils		Date of Assessment:
	Have any of the protected species been recorded in this wood or on adjoining sites? Tick any that apply.	YES	
	Indicate which sources of information you have checked: National Biodiversity Network (<u>www.nbn.org.uk</u>) Local Biodiversity Centre	NO	Name of Assessor:
	Local Wildlife Trust Cother Specify Other:		
	Have your inspections or any expert surveys found any of the following signs or evidence? Tick any that apply. Signs (e.g. otter spraint, nuts gnawed by dormice, leaves folded by newts) Sightings (or echo-location) Potential breeding or roosting sites (e.g. veteran trees, old trees with crevices, riverside hollow trees, ponds, timber stacks, large fallen deadwood) Confirmed breeding or roosting sites (i.e. evidence of sites actually being used) Details:	YES NO	
	If you have answered NO to ALL of the above then only bats need to be considered in your operations. If you have answered YES to any of the above then the species concerned must be considered as well as bats.		Notes
	Do the operations comply with Good Practice for bats and any other species found	YES	A licence is not required but contin sections 6 and 7 below
	Details: Use reverse of form to expand as required:	NO	You will need to obtain a licence B carrying out the work (see EPS Lic Application Forms and Notes)
	Whether or not a licence is required Has the information been communicated to operators (including the location of	YES	
	breeding sites and sensitive areas)? Tick any that apply.	NO	You may commit an offence if you tell your operators about the prote species in your wood.
	other management plan) Shown to operators and/or their supervisor Marked with paint or hazard tape Shown on the site plan Other means:		
ſ	Have arrangements for supervision been made to ensure Good Practice guidance is complied with during the operations?	YES	
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Appendix 13: 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 Invalid source specified..