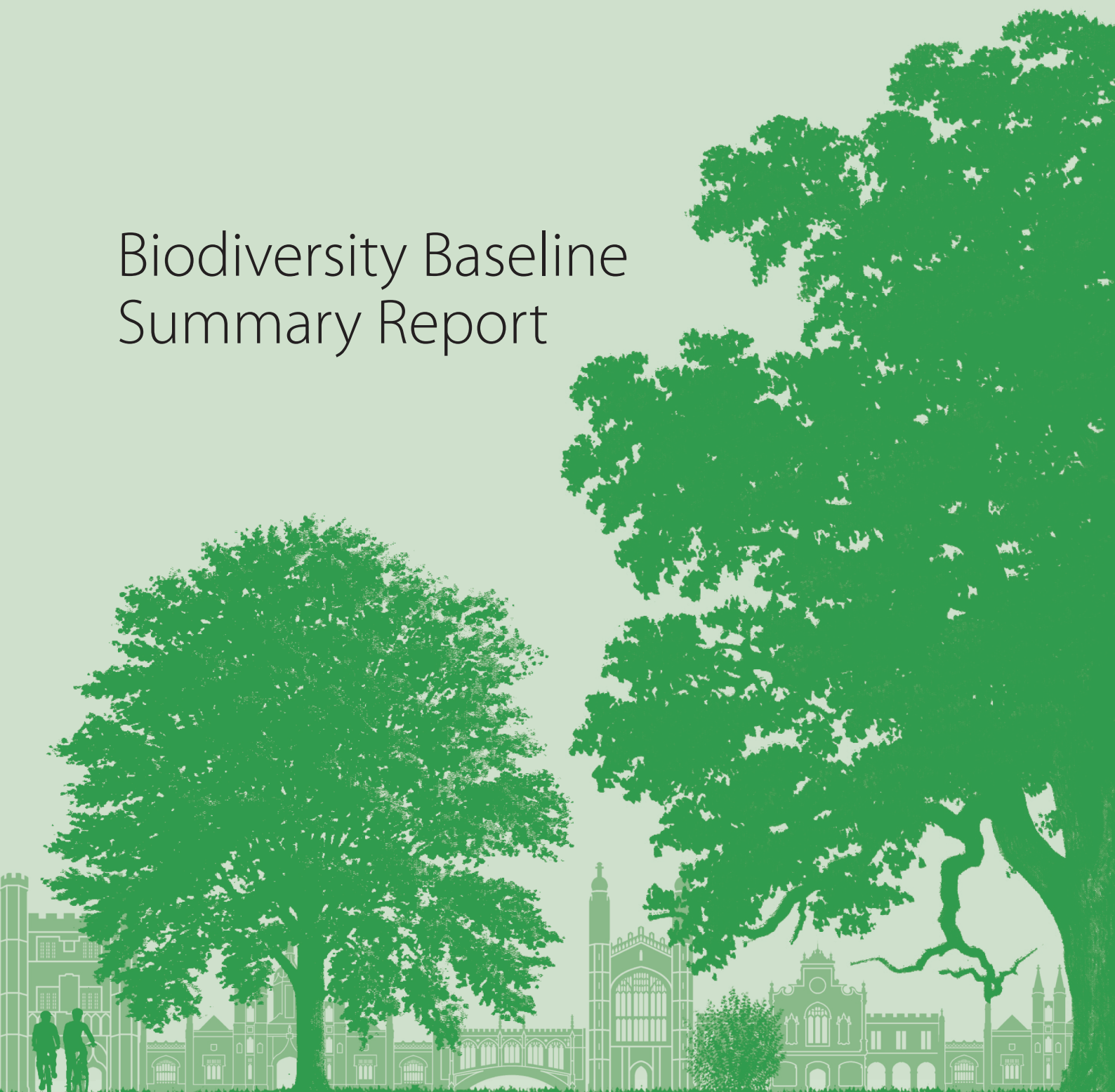




Biodiversity Baseline Summary Report



Biodiversity Baseline Summary Report

Introduction

In this report, the University of Cambridge's first biodiversity baseline, the key findings arising from the baseline assessment that was undertaken in 2017-2018 are summarised.

Conserving biodiversity is a challenge that all institutions face as they grow and develop. A number of recent reports have indicated large decreases in abundance of wildlife globally. As a research leader in this field, the University has made commitments to tackling this issue in its Environmental Sustainability Vision, Policy and Strategy, with an overarching aim:

"To be a leading organisation within the sector in limiting negative and, where possible, having positive direct and indirect impacts on biodiversity and natural ecosystems so that the University's practical performance in this area matches its aspirations to be a global leader in conservation and food security research."

To measure future improvements the University needs to understand the biodiversity it has. Under the guidance of its Ecological Advisory Panel, the University has undertaken an assessment of the current state of ecology on its estate. The baseline has been synthesised from a combination of ecological assessments, research records and input from local natural history groups.

The baseline provides a basis for the University to take action on biodiversity in two major ways: Firstly, it will be used to develop the Biodiversity Action Plan (BAP) which will provide strategic direction for conserving and promoting biodiversity on the University's estate, given future development work. Secondly, it will allow us to carry out more immediate work in areas which have been identified as 'quick wins'.



Data availability

During the production of this report data on habitats and many different taxonomic groups, including plants, mammals, birds, reptiles, amphibians, fish, invertebrates and fungi/lichens was acquired. There is a relative lack of data for fish, invertebrates, fungi/lichens, protozoans and algae, whereas the most data is available for plants.

The most species and habitat data is available for sites which are already well-known to naturalists and researchers or which have organised bioblitzes, notably the Botanic Garden, Maddingley Wood and the grounds of Maddingley Hall. There is the least species and habitat data available for rural estate farms.

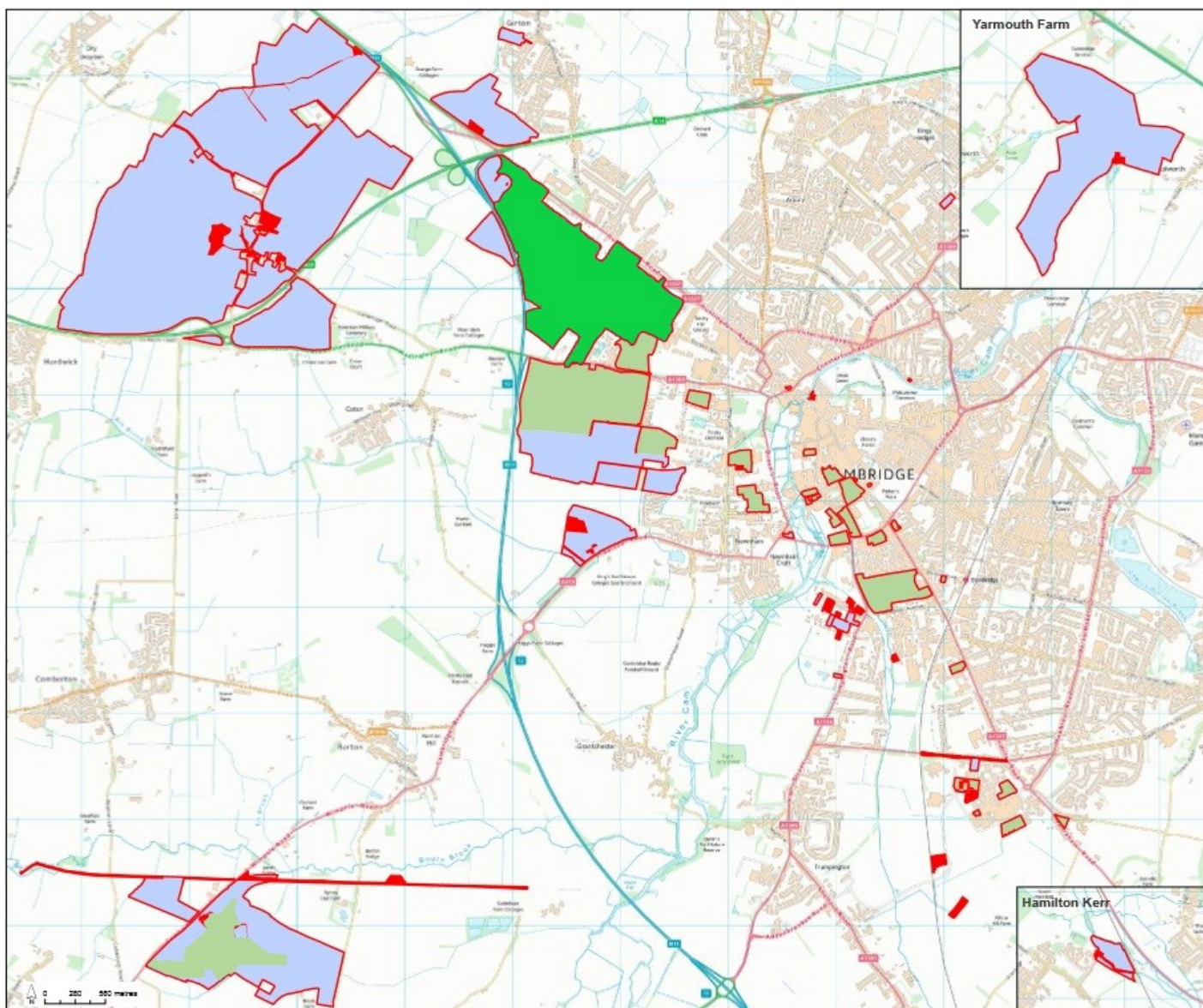
Notable sites for biodiversity

Rural sites of known biodiversity importance include Maddingley Wood, 800 Wood and the grounds of Maddingley Hall. The majority of the urban estate consists of habitats with low ecological value due to buildings, hardstanding, manicured amenity planting and poor ecological connectivity to sites with higher ecological value. The urban estate nonetheless includes several sites with considerable value for biodiversity, notably the Botanic Garden, Maddingley Rise and the West Cambridge Site (see locations of all sites in map on page 4).



Notable sites for biodiversity on the University estate. Clockwise from top left: Maddingley Wood, Maddingley Hall, Greenwich House, West Cambridge Site, Botanic Garden, 800 Wood.

Other notable biodiversity areas are designated sites within the estate, including Cambridge-Bedford Disused Railway (Harlton) County Wildlife Site (CWS), Coton Path Hedgerow CWS, Hedgerows East of the M11 CWS, Lord's Bridge Observatory CWS, Maddingley Brickpits CWS, and Scrub East of the M11 verge City Wildlife Site.



Baseline surveys

- University of Cambridge Estate land
- North West Cambridge Development*
- Phase 1 data
- Other habitat data
- No habitat information

*Excluded from this report but subject to a separate biodiversity plan

Notable habitats

The University estate supports many habitats of conservation value. UK Biodiversity Action Plan (UKBAP) priority habitats on the rural estate include lowland mixed deciduous woodland, wet woodland, wood pasture and parkland, traditional orchard, hedgerows, lowland meadow, lowland calcareous grassland, arable field margins and ponds. The 800 Wood contributed 50% towards the aim of the Cambridgeshire and Peterborough Local Biodiversity Action Plan (CPLBAP) to create 20 ha of new woodland by 2010 to link up to ancient woodland clusters.

Notable species

Notable species recorded on the estate in recent years include:

- UKBAP priority species such as yellowhammer, grass snake and great crested newt;
- CPLBAP priority species such as skylark, barbastelle bat and brown hare;
- UK red-listed bird species such as house sparrow, grey partridge and song thrush, and other species threatened nationally, such as the arable weed spreading hedge-parsley;
- Nationally Rare or Nationally Scarce species such as the liverwort fringed heartwort, yellow loosestrife bee and the mere wainscot moth;
- Specially protected species such as bluebell and badger;
- Type specimens of Madingley goldilocks buttercup, Madingley elm and cut-leaved elm. Madingley elm is not known from any other site, whilst cut-leaved elm is only known from two other sites outside the University estate.



Three county priority species found on the University estate. From left to right: brown hare, skylark, barbastelle bat.

See Appendix for a comprehensive list of all notable species known from the University estate and a key to conservation designations.

Existing enhancements for biodiversity

A number of sites on the urban estate have implemented enhancements for wildlife, including bird and bat boxes, green roofs, ponds and other aquatic features, log piles, bird feeders and wildflower areas. Particularly notable sites in this regard are:

- The West Cambridge Site, which contains extensive aquatic features and green roofs;
- The Botanic Garden, which contains various habitats managed in a wildlife-friendly manner;
- The Greenwich House grounds on the Madingley Rise site, which contain numerous roosting, feeding and habitat features for animals. Plans for a wildflower meadow are also underway.

The majority of the rural estate and farm are managed under a Higher Level Stewardship agreement with Natural England, which contains many wildlife friendly options including the provision of areas of overwintered stubble, wild bird seed plots and areas established with wildflower mixes to encourage pollinators. Additionally, much of the permanent pasture is managed under options that include no, or very low nutrient inputs. Much of the rural estate woodland is also managed in a wildlife-friendly manner guided by a Woodland Management Plan that was subject to widespread consultation. Many designated wildlife sites on the estate are managed for nature in accordance with recommendations made by the Wildlife Trust for Bedfordshire, Cambridgeshire and Northamptonshire.

Threats to biodiversity

Threats to biodiversity on the urban estate include urban development, road traffic and pollution (including light pollution). The invasive plant species cotoneaster, giant hogweed, New Zealand pigmyweed, Nuttall's waterweed, rhododendron and Virginia creeper have all been found on the urban estate and have the potential to cause ecological and socio-economic harm if they are not controlled appropriately.

Threats to biodiversity on the rural estate include urban encroachment and road expansion, a low level of active management on some County Wildlife Sites, invasive plants such as Himalayan balsam and parrot's-feather, and damage to trees and other plants caused by deer, rabbits, grey squirrel, ash dieback, acute oak decline, *Agilus* beetles, Dutch elm disease and elm zigzag sawfly.

Threats to biodiversity in the region more broadly include the effects of climate change and factors such as pesticide use and eutrophication.

Next steps

- The results from this report indicate that whilst at first sight much of the University environment might appear to be urban and currently have a relatively low value for biodiversity there are a number of notable habitats and species that we have a responsibility to promote, conserve and restore.
- Under the guidance of the Ecological Advisory Panel the University is currently developing its Biodiversity Action Plan (BAP) which will outline a set of actions to promote and conserve biodiversity as well as setting out a monitoring strategy using the baseline to measure progress. It will also be used to inform ongoing engagement work for students and staff.
- Prior to the completion of the Biodiversity Action Plan (BAP) we will also look to implement a number of quick wins for biodiversity across the estate.

Contributors

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Appendix: Conservation designations of notable species

Please see key to conservation designations in the second table

The table below contains selected conservation designations for notable species recorded from the University estate. Note that some records are historical and it is unknown whether the species is still present. Note also that some rarity statuses (e.g. for lichens) may be due to under-recording rather than genuine rarity.

Vernacular name	Scientific name	Taxonomic group	Selected designations
Vertebrates: Amphibians			
Common Toad	<i>Bufo bufo</i>	Amphibian (Amphibia)	BCA3, CPLBAP, NERC, UKBAP, WCAS5
Common Frog	<i>Rana temporaria</i>	Amphibian (Amphibia)	BCA3, HDA5, WCAS5
Great Crested Newt	<i>Triturus cristatus</i>	Amphibian (Amphibia)	BCA2, CHSR52, CPLBAP, HDA2, HDA4, NERC, UKBAP, WCAS5
Vertebrates: Birds			
Skylark	<i>Alauda arvensis</i>	Bird (Aves)	BCCR, CPLBAP, NERC
Kingfisher	<i>Alcedo atthis</i>	Bird (Aves)	BCA2, BDA1, BCCA, WCAS1
Wigeon	<i>Anas penelope</i>	Bird (Aves)	AEWAA2, BCCA, CMSA2, NTBGB
Gadwall	<i>Anas strepera</i>	Bird (Aves)	AEWAA2, BCCA, CMSA2
Meadow Pipit	<i>Anthus pratensis</i>	Bird (Aves)	BCA2, BCCA
Swift	<i>Apus apus</i>	Bird (Aves)	BCCA, CPASI, EBGB
Scaup	<i>Aythya marila</i>	Bird (Aves)	AEWAA2, BCCR, CMSA2, ENGB, NERC, UKBAP, WCAS1
Lesser Redpoll	<i>Carduelis cabaret</i>	Bird (Aves)	BCCR, CPLBAP, NERC, UKBAP
Treecreeper	<i>Certhia familiaris</i>	Bird (Aves)	WCAS1
Cetti's Warbler	<i>Cettia cetti</i>	Bird (Aves)	WCAS1
Little Ringed Plover	<i>Charadrius dubius</i>	Bird (Aves)	AEWAA2, BCA2, CMSA2, WCAS1
Black-headed Gull	<i>Chroicocephalus ridibundus</i>	Bird (Aves)	AEWAA2, BCCA, VNGB
Marsh Harrier	<i>Circus aeruginosus</i>	Bird (Aves)	BCCA, BDA1, CMSA2, NTBGB, WCAS1
Stock Dove	<i>Columba oenas</i>	Bird (Aves)	BCCA
Quail	<i>Coturnix coturnix</i>	Bird (Aves)	BCCA, WCAS1
Cuckoo	<i>Cuculus canorus</i>	Bird (Aves)	BCCR, NERC, VBGB, UKBAP
Bewick's Swan	<i>Cygnus columbianus</i> ssp. <i>bewickii</i>	Bird (Aves)	CENGB, CPLBAP, NERC, UKBAP
Whooper Swan	<i>Cygnus cygnus</i>	Bird (Aves)	AEWAA2, BCA2, BCCA, BDA1, CMSA2, EBGB, WCAS1
Mute Swan	<i>Cygnus olor</i>	Bird (Aves)	AEWAA2, BCCA, CMSA2
House Martin	<i>Delichon urbicum</i>	Bird (Aves)	BCA2, BCCA, VBGB
Yellowhammer	<i>Emberiza citrinella</i>	Bird (Aves)	BCCR, BCA2, CPLBAP, NERC, UKBAP
Reed Bunting	<i>Emberiza schoeniclus</i>	Bird (Aves)	BCA2, BCCA, CPLBAP, NERC, UKBAP
Merlin	<i>Falco columbarius</i>	Bird (Aves)	BCA2, BCCR, BDA1, CMSA2, DD-NGB, EBGB, WCAS1

Peregrine Falcon	<i>Falco peregrinus</i>	Bird (Aves)	BCA2, CMSA2, WCAS1
Hobby	<i>Falco subbuteo</i>	Bird (Aves)	BCA2, CMSA2, WCAS1
Kestrel	<i>Falco tinnunculus</i>	Bird (Aves)	BCA2, BCCA, CMSA2, VBGB
Brambling	<i>Fringilla montifringilla</i>	Bird (Aves)	WCAS1
Common Crane	<i>Grus grus</i>	Bird (Aves)	AEWAA2, BCA2, BCCA, BDA1, CMSA2, CPASI, VBGB
Linnet	<i>Linaria cannabina</i>	Bird (Aves)	BCA2, BCCR, CPLBAP, NTBGB
Savi's Warbler	<i>Locustella luscinioides</i>	Bird (Aves)	BCCR, CEBGB, NERC, UKBAP, WCAS1
Grasshopper Warbler	<i>Locustella naevia</i>	Bird (Aves)	BCCR, NERC, UKBAP
Woodlark	<i>Lullula arborea</i>	Bird (Aves)	BDA1, NERC, UKBAP, VBGB, WCAS1
Yellow Wagtail	<i>Motacilla flava</i>	Bird (Aves)	BCA2, BCCR, CPLBAP, NTBGB
Spotted Flycatcher	<i>Muscicapa striata</i>	Bird (Aves)	BCA2, BCCR, CMSA2, CPLBAP, NERC, UKBAP
Curlew	<i>Numenius arquata</i>	Bird (Aves)	AEWAA2, BCCR, CMSA2, EBGB, NERC, NT, UKBAP
Bearded Tit	<i>Panurus biarmicus</i>	Bird (Aves)	BCA2, WCAS1
Tree Sparrow	<i>Passer montanus</i>	Bird (Aves)	BCCR, NERC, UKBAP, VBGB
Grey Partridge	<i>Perdix perdix</i>	Bird (Aves)	BCCR, CPLBAP, UKBAP, VBGB
Black Redstart	<i>Phoenicurus ochruros</i>	Bird (Aves)	BCA2, BCCR, EBGB, NTNGB, WCAS1
Willow Warbler	<i>Phylloscopus trochilus</i>	Bird (Aves)	BCCA
Golden Plover	<i>Pluvialis apricaria</i>	Bird (Aves)	AEWAA2, BDA1, CMSA2
Willow Tit	<i>Poecile montanus</i>	Bird (Aves)	BCA2, BCCR, EBGB, NERC, UKBAP
Marsh Tit	<i>Poecile palustris</i>	Bird (Aves)	BCA2, BCCR, CPLBAP, NERC, UKBAP, VBGB
Bullfinch	<i>Pyrrhula pyrrhula</i>	Bird (Aves)	BCCA, CPLBAP, NERC, UKBAP
Firecrest	<i>Regulus ignicapillus</i>	Bird (Aves)	BCA2, WCAS1
Turtle Dove	<i>Streptopelia turtur</i>	Bird (Aves)	BCCR, CEBGB, CPLBAP, NERC, WCAS1, UKBAP
Tawny Owl	<i>Strix aluco</i>	Bird (Aves)	BCA2, BCCA, NTBGB
Green Sandpiper	<i>Tringa ochropus</i>	Bird (Aves)	AEWAA2, BCA2, BCCA, CMSA2, EBGB, ENGB, WCAS1
Song Thrush	<i>Turdus philomelos</i>	Bird (Aves)	BCCR, CPLBAP, NERC, UKBAP
Ring Ouzel	<i>Turdus torquatus</i>	Bird (Aves)	BCA2, BCCR, NERC, UKBAP, VBGB
Barn Owl	<i>Tyto alba</i>	Bird (Aves)	BCA2, CPASI, WCAS1
Lapwing	<i>Vanellus vanellus</i>	Bird (Aves)	AEWAA2, BCCR, CMSA2, CPLBAP, EGB, NERC, UKBAP, VNGB
Vertebrates: Fish			
European Eel	<i>Anguilla anguilla</i>	Ray-finned fish (Actinopterygii)	CE, CPLBAP, NERC, UKBAP
Spined Loach	<i>Cobitis taenia</i>	Ray-finned fish (Actinopterygii)	BCA3, CPLBAP, HDA2, NERC, UKBAP
Brown Trout	<i>Salmo trutta</i>	Ray-finned fish (Actinopterygii)	NERC, UKBAP
Vertebrates: Mammals			

Water Vole	<i>Arvicola amphibius</i>	Mammal (Mammalia)	CPLBAP, EGB, NERC, UKBAP, WCAS5
Barbastelle	<i>Barbastella barbastellus</i>	Mammal (Mammalia)	BCA2, CHSR2, CMSA2, CMSEA1, CPLBAP, HDA2, HDA4, NERC, UKBAP, VGB, WCAS5
Serotine	<i>Eptesicus serotinus</i>	Mammal (Mammalia)	BCA2, CHSR2, CMSA2, CMSEA1, HDA4, VGB, WCAS5
Hedgehog	<i>Erinaceus europaeus</i>	Mammal (Mammalia)	BCA3, CPLBAP, NERC, UKBAP, VGB
Brown Hare	<i>Lepus europaeus</i>	Mammal (Mammalia)	CPLBAP, NEGB, NERC, UKBAP
Otter	<i>Lutra lutra</i>	Mammal (Mammalia)	BCA2, CHSR2, CPLBAP, HDA2, HDA4, NERC, UKBAP, WCAS5
Badger	<i>Meles meles</i>	Mammal (Mammalia)	BCA3, PBA, WCAS5
Hazel Dormouse	<i>Muscardinus avellanarius</i>	Mammal (Mammalia)	BCA3, CHSR2, CPLBAP, HDA4, NERC, UKBAP, VGB, WCAS5
Polecat	<i>Mustela putorius</i>	Mammal (Mammalia)	BCA3, CHSR4, CPLBAP, HDA5, NERC, UKBAP
Natterer's Bat	<i>Myotis nattereri</i>	Mammal (Mammalia)	BCA2, CHSR2, CMSA2, CMSEA1, HDA4, WCAS5
Daubenton's Bat	<i>Myotis daubentonii</i>	Mammal (Mammalia)	BCA2, CHSR2, CMSA2, CMSEA1, HDA4, WCAS5
Noctule	<i>Nyctalus noctula</i>	Mammal (Mammalia)	BCA2, CHSR2, CMSA2, CMSEA1, CPLBAP, HDA4, NERC, UKBAP, WCAS5
Common Pipistrelle	<i>Pipistrellus pipistrellus</i>	Mammal (Mammalia)	BCA2, BCA3, CHSR2, CMSA2, CMSEA1, CPLBAP, HDA4, WCAS5
Soprano Pipistrelle	<i>Pipistrellus pygmaeus</i>	Mammal (Mammalia)	BCA2, CHSR2, CMSA2, CMSEA1, CPLBAP, HDA4, NERC, UKBAP, WCAS5
Brown Long-eared Bat	<i>Plecotus auritus</i>	Mammal (Mammalia)	BCA2, CHSR2, CMSA2, CMSEA1, CPLBAP, HDA4, NERC, UKBAP, WCAS5
Vertebrates: Reptiles			
Slow-worm	<i>Anguis fragilis</i>	Reptile (Reptilia)	BCA3, CPLBAP, NERC, UKBAP, WCAS5
Grass Snake	<i>Natrix helvetica</i> ssp. <i>helvetica</i>	Reptile (Reptilia)	BCA3, CPLBAP, NERC, UKBAP, WCAS5
Adder	<i>Vipera berus</i>	Reptile (Reptilia)	BCA3, CPLBAP, NERC, UKBAP, WCAS5
Common Lizard	<i>Zootoca vivipara</i>	Reptile (Reptilia)	CPLBAP, NERC, UKBAP
Invertebrates: Insects			
Brown Tree Ant	<i>Lasius brunneus</i>	Ant (Insecta - Hymenoptera)	NSA
Large Garden Bumblebee	<i>Bombus ruderatus</i>	Bee (Insecta - Hymenoptera)	NERC, NSB, UKBAP
Hill Cuckoo-bee	<i>Bombus rupestris</i>	Bee (Insecta - Hymenoptera)	NSB
Spined Hylaeus	<i>Hylaeus cornutus</i>	Bee (Insecta - Hymenoptera)	NSA
Large Yellow-faced Bee	<i>Hylaeus signatus</i>	Bee (Insecta - Hymenoptera)	NSB

Yellow Loosestrife Bee	<i>Macropis europaea</i>	Bee (Insecta - Hymenoptera)	NSA
Musk Beetle	<i>Aromia moschata</i>	Beetle (Insecta - Coleoptera)	NSB
Stag Beetle	<i>Lucanus cervus</i>	Beetle (Insecta - Coleoptera)	BCA3, HDA2, NERC, NSB, UKBAP, WCAS5
Small Blue	<i>Cupido minimus</i>	Butterfly (Insecta - Lepidoptera)	CPLBAP, NERC, NTGB, UKBAP, WCAS5
Dingy Skipper	<i>Erynnis tages ssp. tages</i>	Butterfly (Insecta - Lepidoptera)	CPLBAP, NERC, UKBAP, VGB
Wall Brown	<i>Lasiommata megera</i>	Butterfly (Insecta - Lepidoptera)	CPLBAP, NERC, NTGB, UKBAP
Grizzled Skipper	<i>Pyrgus malvae</i>	Butterfly (Insecta - Lepidoptera)	CPLBAP, NERC, UKBAP, VGB
White-letter Hairstreak	<i>Satyrrium w-album</i>	Butterfly (Insecta - Lepidoptera)	CPLBAP, E, NERC, WCAS5, UKBAP
Golden Hoverfly	<i>Callicera spinolae</i>	Hoverfly (Insecta - Diptera)	CPLBAP, NERC, UKBAP, VGB
White-spotted Pinion	<i>Cosmia diffinis</i>	Moth (Insecta - Lepidoptera)	CPLBAP, NERC, UKBAP
Goat Moth	<i>Cossus cossus</i>	Moth (Insecta - Lepidoptera)	CPLBAP, NERC, UKBAP
Oak Lutestring	<i>Cymatophorima diluta</i>	Moth (Insecta - Lepidoptera)	CPLBAP, NERC, UKBAP
Mere Wainscot	<i>Photedes fluxa</i>	Moth (Insecta - Lepidoptera)	NSB
-	<i>Allygidius commutatus</i>	Planthopper (Insecta - Hemiptera)	NL
Tall Fescue Planthopper	<i>Ribautodelphax imitans</i>	Planthopper (Insecta - Hemiptera)	CPLBAP, NERC, UKBAP
-	<i>Stiroma bicarinata</i>	Planthopper (Insecta - Hemiptera)	NSB
Five-banded Weevil-wasp	<i>Cerceris quinquefasciata</i>	Wasp (Insecta - Hymenoptera)	CPLBAP, NERC, RGB, UKBAP
Invertebrates: Arachnids			
-	<i>Aceria tristriata</i>	Mite (Arachnida)	UC
Invertebrates: Gastropods			
Large-mouthed Valve Snail	<i>Valvata macrostoma</i>	Snail (Gastropoda)	CPLBAP, NERC, NR, UKBAP, VGB
Desmoulin's Whorl Snail	<i>Vertigo moulinsiana</i>	Snail (Gastropoda)	CPLBAP, HDA2, LR(CD), NERC, NS, UKBAP, VGB
Invertebrates: Crustaceans			
White-clawed Crayfish	<i>Austropotamobius pallipes</i>	Decapod (Malacostraca)	BCA3, CPLBAP, E, HDA2, HDA5, NERC, UKBAP, WCAS5
Plants: Flowering plants			
Pheasant's-eye	<i>Adonis annua</i>	Flowering plant (Angiosperm)	CPLBAP, EE, EGB, NERC, NS, UKBAP
Purple Milk-vetch	<i>Astragalus danicus</i>	Flowering plant (Angiosperm)	CPLBAP, EE, EGB, NERC, UKBAP
Flat-sedge	<i>Blysmus compressus</i>	Flowering plant (Angiosperm)	CPLBAP, NERC, UKBAP, VE, VGB
Box	<i>Buxus sempervirens</i>	Flowering plant (Angiosperm)	CR, DDE, DDGB, NR
Spreading Bellflower	<i>Campanula patula</i>	Flowering plant (Angiosperm)	CEE, EGB, NERC, NS, UKBAP
Caraway	<i>Carum carvi</i>	Flowering plant (Angiosperm)	CEE, EGB, NERC, NS, UKBAP
Whorl-grass	<i>Catabrosa aquatica</i>	Flowering plant (Angiosperm)	VE
Cornflower	<i>Centaurea cyanus</i>	Flowering plant (Angiosperm)	CPLBAP, NERC, UKBAP
White Helleborine	<i>Cephalanthera damasonium</i>	Flowering plant (Angiosperm)	CPLBAP, NERC, UKBAP, VE, VGB

Soft Hornwort	<i>Ceratophyllum submersum</i>	Flowering plant (Angiosperm)	CR
Basil Thyme	<i>Clinopodium acinos</i>	Flowering plant (Angiosperm)	CPLBAP, NERC, UKBAP, VE, VGB
Galingale	<i>Cyperus longus</i>	Flowering plant (Angiosperm)	NS, NTE, NTGB
Southern Marsh-orchid	<i>Dactylorhiza praetermissa</i>	Flowering plant (Angiosperm)	CPASI
Cypress Spurge	<i>Euphorbia cyparissias</i>	Flowering plant (Angiosperm)	CR
Dwarf Spurge	<i>Euphorbia exigua</i>	Flowering plant (Angiosperm)	CPASI, NTGB, VE
Chalk Eyebright	<i>Euphrasia pseudokernerii</i>	Flowering plant (Angiosperm)	CPLBAP, EGB, NERC, NS, UKBAP, VE
Broad-leaved Cudweed	<i>Filago pyramidata</i>	Flowering plant (Angiosperm)	CPLBAP, EE, EGB, NERC, NS, WCAS8
Snake's Head Fritillary	<i>Fritillaria meleagris</i>	Flowering plant (Angiosperm)	NS, WLGB
Fine-leaved Fumitory	<i>Fumaria parviflora</i>	Flowering plant (Angiosperm)	NS, NTE, VGB
Corn Cleavers	<i>Galium tricornutum</i>	Flowering plant (Angiosperm)	CPLBAP, CEE, CEGB, NERC, NR, UKBAP
Stinking Helleborine	<i>Helleborus foetidus</i>	Flowering plant (Angiosperm)	NS
Sea Barley	<i>Hordeum marinum</i>	Flowering plant (Angiosperm)	CPLBAP, NERC, NS, UKBAP, VE, VGB
Bluebell	<i>Hyacinthoides non-scripta</i>	Flowering plant (Angiosperm)	WCAS8
Yellow Vetchling	<i>Lathyrus aphaca</i>	Flowering plant (Angiosperm)	NS, VE, VGB
Grass-poly	<i>Lythrum hyssopifolia</i>	Flowering plant (Angiosperm)	CPLBAP, EE, EGB, NERC, NR, UKBAP, WCAS8
Bur Medick	<i>Medicago minima</i>	Flowering plant (Angiosperm)	NS, VE, VGB
Sickle Medick	<i>Medicago sativa</i> ssp. <i>falcata</i>	Flowering plant (Angiosperm)	NS
Crested Cow-wheat	<i>Melampyrum cristatum</i>	Flowering plant (Angiosperm)	CPLBAP, EE, NERC, NR, UKBAP, VGB
Yellow Bird's-nest	<i>Monotropa hypopitys</i>	Flowering plant (Angiosperm)	EE, EGB, NERC, UKBAP
Common Twayblade	<i>Neottia ovata</i>	Flowering plant (Angiosperm)	CPASI
Tubular Water-dropwort	<i>Oenanthe fistulosa</i>	Flowering plant (Angiosperm)	CPLBAP, NERC, UKBAP, VE, VGB
Knapweed Broomrape	<i>Orobanche elatior</i>	Flowering plant (Angiosperm)	CPASI
Four-leaved Allseed	<i>Polycarpon tetraphyllum</i>	Flowering plant (Angiosperm)	NR
Annual Beard-grass	<i>Polypogon monspeliensis</i>	Flowering plant (Angiosperm)	NS
Hairlike Pondweed	<i>Potamogeton trichoides</i>	Flowering plant (Angiosperm)	CPASI, NS
Corn Buttercup	<i>Ranunculus arvensis</i>	Flowering plant (Angiosperm)	CPLBAP, CEGB, EE, NERC, UKBAP
Madingley Goldilocks Buttercup	<i>Ranunculus obtusifolius</i>	Flowering plant (Angiosperm)	Type specimen
Heath Pearlwort	<i>Sagina subulata</i>	Flowering plant (Angiosperm)	NTE
Wild Clary	<i>Salvia verbenaca</i>	Flowering plant (Angiosperm)	NTE
Shepherd's-needle	<i>Scandix pecten-veneris</i>	Flowering plant (Angiosperm)	CPLBAP, CEGB, EE, NERC, UKBAP
Greater Water-parsnip	<i>Sium latifolium</i>	Flowering plant (Angiosperm)	CPLBAP, EE, EGB, NERC, NS, UKBAP
Bog Stitchwort	<i>Stellaria alsine</i>	Flowering plant (Angiosperm)	CR

Spreading Hedge-parsley	<i>Torilis arvensis</i>	Flowering plant (Angiosperm)	CPLBAP, EE, EGB, NERC, NS, UKBAP
Strawberry Clover	<i>Trifolium fragiferum</i>	Flowering plant (Angiosperm)	CPASI, VE
Cut-leaved Elm	<i>Ulmus incisa</i>	Flowering plant (Angiosperm)	Type specimen; known from only two other sites
Madingley Elm	<i>Ulmus madingleyensis</i>	Flowering plant (Angiosperm)	Type specimen; known from no other sites
Hoary Mullein	<i>Verbascum pulverulentum</i>	Flowering plant (Angiosperm)	NS
Slender Tare	<i>Vicia parviflora</i>	Flowering plant (Angiosperm)	CPASI, NS, VE, VGB
Plants: Liverworts			
Whiskered Veilwort	<i>Metzgeria consanguinea</i>	Liverwort (Jungermanniopsida)	CR
Rustwort	<i>Nowellia curvifolia</i>	Liverwort (Jungermanniopsida)	CR
Fringed Heartwort	<i>Ricciocarpos natans</i>	Liverwort (Marchantiopsida)	NS
Plants: Mosses			
Curve-stalked Feather-moss	<i>Rhynchostegiella curviseta</i>	Moss (Bryopsida)	NS
Scabrous Feather-moss	<i>Rhynchostegiella litorea</i>	Moss (Bryopsida)	NS
Chalk Screw-moss	<i>Tortula vahliana</i>	Moss (Bryopsida)	CPLBAP, NERC, NR, UKBAP
Spreading-leaved Beardless-moss	<i>Weissia squarrosa</i>	Moss (Bryopsida)	CPLBAP, NERC, UKBAP
Lichens			
-	<i>Bacidia sulphurella</i>	Lichen (Lecanoromycetes)	NS
-	<i>Lecanora compallens</i>	Lichen (Lecanoromycetes)	NS
-	<i>Porina byssophila</i>	Lichen (Lecanoromycetes)	NR
-	<i>Schismatomma cretaceum</i>	Lichen (Arthoniomycetes)	IR

Key to conservation designations

Abbreviation	Stands for:	Meaning
AEWAA2	Agreement on the Conservation of African-Eurasian Migratory Waterbirds 2008 Annex 2	Migratory waterbirds requiring special conservation measures.
BCA2	Bern Convention 1979 Appendix 2	Animals with special protection ("appropriate and necessary legislative and administrative measures") from capture, killing, disturbance, habitat damage, egg-stealing and trade.
BCA3	Bern Convention 1979 Appendix 3	As in BCA2, but a certain exploitation is possible if the population level permits.
BDA1	Birds Directive 1979 Annex 1	Birds subject to special conservation measures concerning their habitat in order to ensure their survival and reproduction in their area of distribution. As appropriate, SPAs to be established to assist conservation measures.
BCCA	Birds of Conservation Concern 4 (2015) Amber List	Birds with an unfavourable conservation status in Europe; those whose population or range has declined moderately in recent years in the UK; those whose population has declined historically in the UK but made a substantial recent recovery; rare breeders; and those with internationally important or localised populations.
BCCR	Birds of Conservation Concern 4 (2015) Red List	Birds which are GT; those whose population or range has declined rapidly in recent years in the UK; and those that have declined historically in the UK and not shown a substantial recent recovery.
CE	Critically Endangered	Species facing an extremely high risk of extinction in the wild (IUCN criteria).
CEE	Critically Endangered in England	See CE; applies to England only.
CEBGB	Critically Endangered as a Breeding species in Great Britain	See CE; applies to breeding species in Great Britain only.
CEGB	Critically Endangered in Great Britain	See CE; applies to Great Britain only.
CENGB	Critically Endangered as a Non-breeding species in Great Britain	See CE; applies to non-breeding species in Great Britain only.
CE(PE)BGB	Critically Endangered (Possibly Extinct) as a Breeding species in Great Britain	See CEBGB; may be extinct in the wild as a breeding species in Great Britain.
CHSRS2	The Conservation of Habitats and Species Regulations 2010 Schedule 2	Animals with special protection in Europe.
CHSRS4	The Conservation of Habitats and Species Regulations 2010 Schedule 4	Animals which may not be taken or killed in certain ways in Europe.
CMSA2	Convention on Migratory Species 1979 Appendix 2	Migratory species with an unfavourable conservation status for which Range States are encouraged to conclude international agreements for their benefit.
CMSEA1	Convention on Migratory Species Eurobats 1991 Annex 1	Bat species which member states must protect from deliberate capture, keeping or killing except for research purposes for which a special permit is required. Member states must also identify important sites for bat conservation, survey the status and trends of bat populations and study their migratory patterns.

CPASI	Cambridgeshire and Peterborough Additional Species of Interest	Species which are not UKBAP but are still special and in need of conservation. For example, these may be nationally rare species for which Cambridgeshire holds a large proportion of the entire UK population. As these are not UKBAP, they are not covered by the requirements in national and local planning policies and there is no specific obligation to consider them. However, consultation with local experts has identified them as valuable in a local context and they should also be considered as targets for conservation efforts where appropriate.
CPLBAP	Cambridgeshire and Peterborough Local Biodiversity Action Plan priority species	Species for which practical conservation efforts should be targeted as part of planning applications, site management plans and other conservation projects in Cambridgeshire and Peterborough.
CR	County Rare	Rare in Cambridgeshire.
DD		Species for which there is inadequate information to make a direct, or indirect, assessment of its risk of extinction based on its distribution and/or population status (IUCN criteria).
DDBGB	Data-Deficient as a Breeding species in Great Britain	See DD; applies to breeding species in Great Britain only.
DDE	Data-Deficient in England	See DD; applies to England only.
DDGB	Data-Deficient in Great Britain	See DD; applies to Great Britain only.
DDNGB	Data-Deficient as a Non-breeding species in Great Britain	See DD; applies to non-breeding species in Great Britain only.
E	Endangered globally	Species facing a very high risk of extinction in the wild (IUCN criteria).
EE	Endangered in England	See E; applies to England only.
EBGB	Endangered as a Breeding species in Great Britain	See E; applies to breeding species in Great Britain only.
EGB	Endangered in Great Britain	See E; applies to Great Britain only.
ENGB	Endangered as a Non-breeding species in Great Britain	See E; applies to non-breeding species in Great Britain only.
GT	Globally Threatened	Species which are V, E or CE (IUCN guidelines).
HDA2	Habitats Directive 1992 Annex 2	Animals and plants which are endangered, vulnerable, rare or endemic in the European Community whose conservation requires the designation of SACs.
HDA4	Habitats Directive 1992 Annex 4	Animals and plants which are endangered, vulnerable, rare or endemic in the European Community with special protection from killing, disturbance and habitat damage.
HDA5	Habitats Directive 1992 Annex 5	Animals and plants which are endangered, vulnerable, rare or endemic in the European Community whose taking in the wild and exploitation may be subject to management measures.
LC	Least Concern	Species which do not qualify for CE, E, V or NT. Widespread and abundant taxa are included in this category.

LR(CD)	Lower Risk (Conservation-Dependent)	Species which are the focus of a continuing taxon-specific or habitat-specific conservation programme targeted towards the taxon in question, the cessation of which would result in the species qualifying for one of the GT categories within a period of five years (IUCN guidelines).
IR	International Responsibility	British species considered to be of international significance in a European or global context.
NEGB	Not Evaluated in Great Britain	The population in Great Britain has not yet been evaluated for IUCN red list criteria.
NERC	Natural Environment and Rural Communities Act 2006 Species of Principal Importance in England	Species of principal importance for the purpose of conserving biodiversity in England which need to be taken into consideration by a public body when performing any of its functions with a view to conserving biodiversity.
NL	Nationally Local	Species recorded in 101-300 hectads in Britain.
NR	Nationally Rare	Species recorded in 15 or fewer hectads in Britain.
NS	Nationally Scarce	Species recorded in 16-100 hectads in Britain.
NSA	Nationally Scarce A	Species recorded in 16-30 hectads in Britain.
NSB	Nationally Scarce B	Species recorded in 31-100 hectads in Britain.
NT	Near Threatened globally	Species which do not qualify for CE, E or V now, but are close to qualifying for or are likely to qualify for a threatened category in the near future (IUCN criteria).
NTE	Near Threatened in England	See NT; applies to England only.
NTBGB	Near Threatened as a Breeding species in Great Britain	See NT; applies to breeding species in Great Britain only.
NTGB	Near Threatened in Great Britain	See NT; applies to Great Britain only.
NTNGB	Near Threatened as a Non-breeding species in Great Britain	See NT; applies to non-breeding species in Great Britain only.
OSPAR	Convention for the Protection of the Marine Environment of the North-East Atlantic	Species on the OSPAR list of threatened and/or declining species which are conservation priorities.
PBA	Protection of Badgers Act 1992	Protects Badgers <i>Meles meles</i> from taking, injuring, killing, cruel treatment, selling, possessing, marking and having their setts interfered with, subject to exceptions.
RGB	Rare in Great Britain	Species with small populations that are not at present E or V, but are at risk (IUCN guidelines). Applies to Great Britain only; in Great Britain, RGB was interpreted as species which exist in fifteen or fewer 10 km squares. Superseded by new IUCN categories in 1994, but still applicable to lists that have not been reviewed since 1994.
UC	Uncommon in Cambridgeshire	Species which are uncommonly found in Cambridgeshire (unofficial designation).
UKBAP	United Kingdom Biodiversity Action Plan 2007	Species identified as being most threatened and in most urgent need of conservation action in the UK.
V	Vulnerable globally	Species facing a high risk of extinction in the wild (IUCN criteria).
VE	Vulnerable in England	See V; applies to England only.
VGB	Vulnerable in Great Britain	See V; applies to Great Britain only.

VBGB	Vulnerable as a Breeding species in Great Britain	See V; applies to breeding species in Great Britain only.
VNGB	Vulnerable as a Non-breeding species in Great Britain	See V; applies to non-breeding species in Great Britain only.
WCAS1	Wildlife and Countryside Act 1981 Schedule 1	Bird species for which it is an offence in the UK to intentionally or recklessly disturb adults and young at, on or near an active nest. They are protected by special penalties at all times or during the closed season.
WCAS5	Wildlife and Countryside Act 1981 Schedule 5	Animal species with special protection in the UK.
WCAS8	Wildlife and Countryside Act 1981 Schedule 8	Plant species which are protected in the UK from intentional picking, uprooting or destruction; selling, offering for sale, possessing or transporting for the purpose of sale (live or dead, part or derivative); and advertising for buying or selling.
WCAS9	Wildlife and Countryside Act 1981 Schedule 9	Non-native (or other) species in the UK which may cause ecological, environmental and/or socio-economic harm in the wild. It is illegal to release these species into the wild or otherwise aid their spread in the UK.
WLGB	Waiting List in Great Britain	Potential new native species in Great Britain which may have arrived via natural dispersal are kept on a waiting list until such time as doubts over their native/alien status are resolved.

