

# **Cambridgeshire and Peterborough County Wildlife Sites**

**Selection Guidelines**

**February 2025**

**CAMBRIDGESHIRE & PETERBOROUGH  
COUNTY WILDLIFE SITES PANEL**

## **CAMBRIDGESHIRE & PETERBOROUGH LOCAL SITES PANEL**

The panel includes suitably qualified and experienced representatives from The Wildlife Trust for Bedfordshire, Cambridgeshire and Northamptonshire, Natural England, County, District and City Councils within Cambridgeshire, District Councils within Cambridgeshire, Cambridgeshire and Peterborough Environmental Records Centre, Farming and Wildlife Advisory Group East and amateur recorders and recording groups including the Cambridgeshire Geological Society and the Cambridgeshire Flora Group. Its aim is to agree the basis for site selection, reviewing and amending them as necessary based on the best available biological information concerning the county.

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## INTRODUCTION

The Selection Criteria are substantially based on [Guidelines for selection of biological SSSIs](#) published by the Nature Conservancy Council (succeeded by English Nature) in 1989. Appropriate modifications have been made to accommodate the aim of selecting a lower tier of sites, i.e. those sites of county and regional rather than national importance. Modifications have also been made to reflect the views of the numerous authorities consulted during the preparation of the Criteria. From time to time it is necessary to update or modify the criteria to reflect increased scientific knowledge and the changing status of species and habitats within the country and the county, and any selections should be made based on the most recent criteria.

The Criteria seek to apply concrete definitions and local thresholds to standard concepts of ecological evaluation such as diversity, rarity, size and typicalness. However, it should not be supposed that the selection of County Wildlife Sites is then a simple matter of rigid comparison between the site and the Criteria. The number of variables that go to make up the ecological value of a site is large and diverse in quality. Best professional judgment must be employed in the assessment of the merits of each individual site and it is then up to the Local Site Panel's discretion for whether a site is selected. The Criteria help to ensure that subjectivity in assessment is minimised and that a consistent approach to CWS selection is maintained. In some cases sites that do not meet the letter of the Criteria may be proposed for CWS status and, conversely, some sites that qualify on paper may not be proposed. A site will not be de-selected if it has suffered wilful neglect or malicious damage and there is the potential to restore ecological features that would enable qualification against the Criteria.

For a number of less well-known taxonomic groups, such as invertebrates, stoneworts, lichens and fungi, the Criteria are either not well developed or are completely lacking. In many cases it will be necessary to select sites using the knowledge and data of local experts in these groups. It is hoped that as the Cambridgeshire & Peterborough Environmental Records Centre builds up its database of biological information for the county, sufficient information will be available to develop Criteria to encompass these groups in a suitably detailed and rigorous way.

The Local Site System (including Local Geological and County Wildlife Sites) in Cambridgeshire and Peterborough is operated by the Local Sites Panel. The [Cambridgeshire and Peterborough Local Site System Handbook](#) sets out how the Local Site system operates in this area. It is aimed at all people who deal with CWSs and LGSs such as land owners and managers, local government officers and officers within statutory agencies. It should be read in conjunction with this document and details management and operation of the system, including the processes of site selection and monitoring, data handling and ratification through the Local Sites Panel.

Unless stated otherwise all uses of the term 'Cambridgeshire' refer to both the current administrative county of Cambridgeshire and Peterborough City Council.

Nomenclature for vascular plants follows *New Flora of the British Isles* 4th Edition, C.A. Stace, C&M Floristics, 2019. Other taxonomic groups have not been updated and may use a variety of different systems and need to be assessed carefully.

# CRITERIA FOR SELECTION OF COUNTY WILDLIFE SITES

## 1. WOODLAND, TREES and HEDGES

*Appendix 1A - ancient woodland indicators, woodland plants & woody species for determining scrub and hedgerow value*

*Appendix 1B - guidelines for assessing veteran trees*

*Appendix 1C - fruit and nut species included in traditional orchards in Cambridgeshire and Peterborough*

*Appendix 1D- rare or scarce fruit varieties and varieties of local significance*

*Appendix 1E - local traditional orchard management practices*

- a **All ancient semi-natural woodlands** included in Cambridgeshire Inventory of Ancient Woodlands which retain over 25% semi-natural cover.
- b **Ancient woodlands over 75% replanted** included in Cambridgeshire Inventory of Ancient Woodlands and containing one of the following:
  - (i) more than 10 ancient woodland indicator species
  - (ii) more than 40 woodland plants
- c **Ancient semi-natural woods under 2ha** with one of the following:
  - (i) more than 5 ancient woodland indicator species
  - (ii) more than 30 woodland plants
  - (iii) good example of NVC W8 (ash - field maple - dog's mercury woodland)
  - (iv) good example of NVC W10 (pedunculate oak - bracken - bramble woodland)
- d **Good examples of the following wet woodlands which are more than 0.5ha. in size:**
  - (i) NVC W1 (grey willow - marsh bedstraw)
  - (ii) NVC W2 (grey willow - downy birch - common reed)
  - (iii) NVC W6 (alder - stinging nettle)
- e **Areas of scrub more than 0.5ha in extent** with NVC W21 (common hawthorn - ivy) with more than 8 woody species.
- f **Hedges:** hedgerow systems at least 500m in length and more than 2m in width, with 5 or more woody species, and with at least part of the hedgerow allowed to flower and fruit. (Normal hedgerow management of coppicing or laying may mean that at least part of the system will not be at the optimum size or condition for wildlife at all times).
- g **Pasture woodland and Parkland** with either:
  - (i) an average of more than 5 mature trees per hectare
  - (ii) groups of 5-19 **veteran trees** when in association with other semi-natural features such as grassland, hedgerows or woodlands
  - (iii) groups of 20 or more **veteran trees**, even in an arable setting

- h **Pollard willows:**
- (i) groups of 5-19 mature pollard willows when in association with other semi-natural features such as grassland, ditches and rivers
  - (ii) groups of 20 or more mature pollard willows, even in an arable setting
- i **Traditional Orchards:**

**Traditional orchards will be selected as CWS if they contain**

1. A group of 5 or more top fruit<sup>1</sup> or nut trees<sup>2</sup> (see Appendix 1C for a list of species)

**AND satisfy two or more of the following**

**Biological criteria**

2. Contain at least **20% of veteran trees** as defined in Appendix 1B.
3. The presence of a nationally rare or scarce species or species rare in the county
4. Associated natural or semi-natural habitat, within or adjacent to the site (e.g. woodland, unimproved grassland, ponds, hedgerows)

**Cultural and aesthetic criteria**

5. The presence of rare or scarce fruit varieties, or of varieties of local significance<sup>3</sup>
6. Continuing traditional orchard management practices that are sympathetic with biodiversity objectives and reflect local cultural traditions. See Appendix 1E for examples of local traditional orchard management practices.

Some sites, even if not accessible to the public, can be important visually or be reservoirs for wildlife in an intensively managed landscape. People's contact with wildlife and wildlife habitats in their home and work environments is important for promoting quality of life and well-being. Educational use and community involvement in management may also be important.

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<sup>1</sup> Any fruit that grows or hangs from a tree.

<sup>2</sup> A tree that bears edible nuts.

<sup>3</sup> Conserving genetic diversity is important as a social and economic resource and to preserve particular varieties that are now not common. See list in Appendix 1D.

## 2. GRASSLANDS

*Appendix 2A - Cambridgeshire neutral and calcareous grassland indicator species*

*Appendix 2B - Cambridgeshire grassland species*

*Appendix 2C - Cambridgeshire indicator species for dry and wet acidic grasslands and open communities on sandy or acidic substrates*

- a **Neutral grasslands** supporting at least 0.05 ha. (either in a block or as a number of smaller areas) of one or more of the following NVC communities:
- (i) MG4 (meadow foxtail - greater burnet flood meadow)
  - (ii) MG5 (crested dog's-tail - common knapweed meadow and pasture)
  - (iii) MG8 (crested dog's-tail - marsh marigold flood pasture)
  - (iv) MG11 (red fescue - creeping bent - silverweed inundation pasture)
  - (v) MG13 (creeping bent - marsh foxtail inundation grassland)
- b **Calcareous grasslands** supporting at least 0.05 ha. (either in a block or as a number of smaller areas) of one or more of the following NVC communities:
- (i) CG2 (sheep's fescue - meadow oat-grass grassland)
  - (ii) CG3 (upright brome grassland)
  - (iii) CG4 (tor grass grassland)
  - (iv) CG5 (upright brome - tor grass grassland)
  - (v) CG7 (sheep's fescue - mouse-ear hawkweed - wild thyme grassland)
- c Sites supporting locally frequent numbers of either:
- (i) **three or more strong neutral grassland indicator species**
  - (ii) **six or more strong calcareous grassland indicator species**
- d Sites supporting locally frequent numbers of either:
- (i) **eight or more neutral grassland indicator species (strong and weak)**
  - (ii) **sixteen or more calcareous grassland indicator species (strong and weak)**
- e Sites supporting **more than 50 grassland species.**
- f **Acidic grasslands** supporting at least 0.05 ha. (either in a block or as a number of smaller areas) of NVC U1 (sheep's fescue - common bent - sheep's sorrel grassland).
- (At present there is insufficient field evidence and testing to set definitive thresholds for the numbers of strong and weak acid grassland indicator species required to select a County Wildlife Site in Cambridgeshire. In practice any site with substantial numbers and good quality habitats is likely to be worthy of selection).
- g Long-established grassland over 1ha in size, which supports at least 8 neutral or calcareous grassland indicator species (of which at least 3 are strong) that have not been deliberately introduced.

### 3. FENS, SWAMPS AND MARSHES

- a Good examples of **topogenous fens supporting at least 0.05 ha.** (either in a block or as a number of smaller areas) of the following NVC communities:
- (i) S24 (common reed - milk parsley tall herb fen)
  - (ii) S2 (saw sedge swamp and sedge beds)
  - (iii) S3 (tussock sedge swamp)
  - (iv) S13 (lesser reed-mace swamp)
  - (v) S20 (grey club-rush swamp)
- b Good examples of **topogenous fens supporting at least 0.5 ha.** (either in a block or as a number of smaller areas) of the following NVC communities:
- (i) S25 (common reed - hemp agrimony tall herb fen)
  - (ii) S26 (common reed - stinging nettle tall herb fen)
  - (iii) S4 (common reed swamp and reed-beds)
  - (iv) S5 (reed sweet-grass swamp)
  - (v) S6 (greater pond-sedge swamp)
  - (vi) S7 (lesser pond-sedge swamp)
- c Good examples of **soligenous fens supporting NVC M13** (black bog-rush - blunt flowered rush).
- d Good examples of **fen meadow** supporting at least 0.05 ha. (either in a block or as a number of smaller areas) of the following NVC communities:
- (i) M22 (blunt-flowered rush - marsh thistle fen meadow)
  - (ii) M24 (purple moor-grass - meadow thistle fen meadow)
- e Good examples of **fen meadow** supporting at least 0.25 ha. of NVC community M27 (meadowsweet - wild angelica mire).
- f **Continuous area of fen** of any category over 2.5 ha which is not appreciably degraded.
- g Sites at least 0.5 ha in extent containing well developed **vegetation mosaics** which represent hydrosereal zonation.
- h Sites at least 0.1 ha in extent which have a **combination of two or more fen types.**
- i Chalk or limestone-derived **flushes, seepages or springs,** and their associated habitat, which are not appreciably degraded.

#### 4. FRESHWATER HABITATS

*Appendix 3 – Vascular plant list for submerged, floating, emergent and wetbank species found in an around water bodies*

- a All **major rivers** together with adjacent semi-natural habitat (grassland, marsh, swamp, scrub, trees and woodland) unless the river has been grossly modified through canalization and/or poor water quality.
- b **Ponds and gravel pits** with one of the following:
  - (i) 5 submerged and floating species
  - (ii) 15 submerged, floating, emergent and wetbank species
- c **Strongly calcareous water bodies**, especially in flooded brickpits, chalkpits and chalk lodes with one of the following:
  - (i) 3 submerged and floating species
  - (ii) 10 submerged, floating, emergent and wetbank species
  - (iii) beds of stoneworts
- d Any water body with **three or more species of pondweed** (*Potamogetonaceae*).
- e **Ditches** with at least 5 submerged, floating and emergent species per 20m or at least 10 submerged, floating, emergent and wetbank species per 20m. (Normal ditch management will affect the apparent quality of a ditch, which is likely to reach its optimum state two to three years after slubbing out. This variation should be borne in mind when selecting sites.)

#### 5. HABITAT MOSAICS

- a Sites of more than 10ha. in size which **support three or more of the following habitat features in close association:**
  - unimproved/semi-improved grassland
  - 'interesting' ruderal communities
  - mature trees
  - woodland (ancient and recent)
  - scrub
  - hedgerows
  - marshy grassland
  - swamp
  - open water including rivers, streams, ditches, ponds, pits and lakes

At least one habitat feature should either be of or closely approaching County Wildlife Site status in its own right. (Many of these sites will be of value for birds and/or invertebrates, and may qualify under these criteria if sufficient data are available for evaluation).



## 6. VASCULAR PLANTS

*Appendix 4A* - Nationally Rare and Nationally Scarce vascular plants found in Cambridgeshire & Peterborough

- a Sites supporting populations of **Nationally Rare or Nationally Scarce species** (listed in Appendix 4A).

Sites should only be selected where it is known that the Nationally Rare or Nationally Scarce species have been established at the site for *at least* five years and are not the result of a recent human introduction.

- b Sites supporting populations of **species which are listed as rare or scarce on the relevant Rare Plant Register OR are present in six or fewer sites or areas in a vice-county** where it is in the administrative area of Cambridgeshire and Peterborough.

Sites should only be selected where it is known that the locally rare or scarce species have been established at the site for *at least* five years and are not the result of a recent human introduction. For a site to be selected the panel must conclude that the presence of the species in that location has a high local nature conservation value, due to its relatively rarity and natural history significance.

When considering total number of sites or areas within a vice-county for the species, what is regarded as a site or area is left to the discretion of the panel.

Note that the administrative area of Cambridgeshire and Peterborough is covered by three vice-counties. Refer to latest BSBI rare plant registers for the appropriate vice-county (Cambridgeshire, 29; Huntingdonshire, 31; Northamptonshire, 32), available from <https://bsbi.org/rare-plant-registers>. The local vice-county recorders should be contacted to determine whether a site should be selected on the basis of a locally rare or scarce plant species, as not all plants on the BSBI rare plant registers are of County Wildlife Site interest (e.g. some might be non-native introductions).

- c Sites which support outstanding assemblages of arable plant species on arable or disturbed ground either within the whole site or along its margins with a score of at least 30 for calcareous soils and at least 20 for sandy soils, gravels and heavy clays (see Appendix 4B for Plantlife scoring).

## 7. NON-VASCULAR PLANTS

- a Sites supporting populations of **nationally rare or nationally scarce species**.

- b Sites listed as **important** in the Bryophyte Site Registers (NCC 1985) for Huntingdonshire and Cambridgeshire.

## 8. MAMMALS

### a Breeding roosts of the following bats:

- (i) Natterer's bat
- (ii) Daubenton's bat
- (iii) Brandt's bat
- (iv) Serotine bat
- (v) Noctule bat
- (vi) Leisler's bat
- (vii) Whiskered bat
- (viii) Barbastelle bat

All sites to include any nearby land regularly used for feeding.

### b Significant bat hibernation roosts

c Sites containing confirmed breeding populations of the **common dormouse**.

## 9. BIRDS

*Appendix 5A - Estimated national numbers of birds breeding and wintering in Britain species relevant to Cambridgeshire*

*Appendix 5B - Breeding bird indices*

*Appendix 5C - Rare breeding birds in Cambridgeshire*

In all cases a site should have qualified for four out of the last five years.

- a A site which regularly contains **0.5% or more of the total British non-breeding population** of any species during any period (e.g. wintering, non-breeding summer, moulting, passage).
- b A site which supports a **range of breeding birds** with a value equal to or exceeding the following indices:
  - (i) Lowland damp grassland: 11
  - (ii) Lowland fen without open water: 13
  - (iii) Lowland open water and margins: 24
  - (iv) Scrub: 10
  - (v) Woodland: 26
- c Breeding sites of a **county rarity**.
- d The five largest colonies of **breeding colonial seabirds, sand martins or herons**, provided the colony contains more than ten pairs.
- e Wet meadows containing more than three species and/or six pairs of **breeding wader**.
- f Localities with one of the following recorded in the last five years:
  - (i) 50 breeding species
  - (ii) 60 wintering species
  - (iii) 100 passage species

## 10. AMPHIBIANS AND REPTILES

*Appendix 6 - Scoring system for the selection of sites with assemblages of amphibians*

Sites identified under this schedule should exclude gardens, swimming pools and any known introduced populations.

- a Sites supporting populations of **adder**.
- b Sites containing water bodies where more than **50 individual great crested newts** can be counted at night or bottle-trapped during the breeding season.
- c Sites supporting good or exceptional populations of **palmate newt**.
- d Sites supporting at least **three amphibian species** and a minimum score of 6 using the table in Appendix 6.
- e Ponds and lakes supporting **common toads** where more than 500 individuals can be counted in the water or where more than 2500 are estimated to breed.

## 11. INVERTEBRATES

*Appendix 7A – Regionally Red-Listed species of butterflies in Great Britain*

*Appendix 7B – The Odonata Red Data List for Great Britain*

*Appendix 7C - Beetles indicative of continuity of saproxylic habitats, and the method of calculation of the index of ecological continuity*

*Appendix 7D – Invertebrate Index Scores*

### 1. Butterflies

- a All sites supporting populations of **critically endangered, endangered or vulnerable species**.
- b Sites supporting one of the five strongest populations in the county of **near threatened species**.

### 2. Dragonflies

- a All sites supporting populations of **critically endangered, endangered or vulnerable species**.
- b Sites supporting one of the five strongest populations in the county of **near threatened species**.
- c Any site supporting **twelve or more species**.

**For sections 1 and 2 above all records should have been made within 5 years of the selection date. Only confirmed breeding records should be considered. Recent deliberate introductions should not be included.**

### 3. Saproxylic beetles

- a Sites with an **ecological continuity index greater than 8** should be considered for inclusion. Records must be post-1950 (in line with requirements for calculating the Index of Ecological Continuity).

### 4. Water beetles

- a Any site supporting **more than 35 species** should be considered for inclusion.

### 5. White-clawed Crayfish

- a Any site supporting **White-clawed Crayfish** should be considered for inclusion.

### 6. General

- a Any site with an **invertebrate index exceeding 500** (calculated as summation of scores per status using the table in Appendix 7D) should be considered for inclusion. Records should have been made within 20 years of the selection or review date.
- b\* *Any site with an A, B or C grading in the JNCC **Invertebrate Site Register** unless re-survey shows that the site has been significantly degraded since the creation of the Register.*  
\*Note that this criterion is historical only and should not be used to select new sites. Existing sites with this criterion are being reviewed to see if they qualify under 11.6a instead.
- c Any site supporting significant populations of **Red Data Book or nationally scarce species**. (Butterflies and dragonflies are dealt with under sections 1 and 2 above).

#### *Further advice*

Invertebrate data needs to be interpreted carefully, not least because, more than in most groups, the apparent interest of a site can be greatly influenced by recording effort. Also, a site may score highly on a miscellany of species without these collectively indicating a site or habitat of very high quality. Specialist advice should be sought from the Wildlife Trust for all prospective sites.

Records should be within the dates specified, but where a site has not been subject to a specialist invertebrate re-survey, older records can still be used and a site should be retained as a CWS unless there is evidence that the integrity of habitats has changed (e.g. major change in tree cover on woodland sites, loss of pond features on wetland sites).

## APPENDIX 1A

### ANCIENT WOODLAND INDICATORS, WOODLAND PLANTS, WOODY SPECIES FOR DETERMINING SCRUB AND HEDGEROW VALUE

Species marked with \* may only be included in a count if veteran specimens are present. See Appendix 1B for identification of veteran trees.

AWI list updated following review of other published lists and analysis of known occurrences, February 2025. List updated to Stace IV nomenclature, October 2019.

Scientific name	Common name	AWI	Woodland plant	W21 scrub	Hedgerow value
<i>Acer campestre</i>	Field Maple	*	Y	Y	Y
<i>Adoxa moschatellina</i>	Moschatel	Y	Y		
<i>Agrimonia procera</i>	Fragrant Agrimony		Y		
<i>Ajuga reptans</i>	Bugle		Y		
<i>Alliaria petiolata</i>	Garlic Mustard		Y		
<i>Allium ursinum</i>	Ramsons	Y	Y		
<i>Alnus glutinosa</i>	Alder		Y		
<i>Anemone nemorosa</i>	Wood Anemone	Y	Y		
<i>Aquilegia vulgaris</i>	Columbine		Y		
<i>Arctium minus</i>	Lesser Burdock		Y		
<i>Arum maculatum</i>	Cuckoo-pint		Y		
<i>Athyrium filix-femina</i>	Lady-fern		Y		
<i>Atropa belladonna</i>	Deadly Nightshade		Y		
<i>Betonica officinalis</i>	Betony		Y		
<i>Betula pendula</i>	Silver Birch		Y	Y	
<i>Betula pubescens</i>	Downy Birch		Y		
<i>Blechnum spicant</i>	Hard-fern	Y	Y		
<i>Brachypodium sylvaticum</i>	Wood False-brome		Y		
<i>Bromopsis ramosa</i>	Hairy Brome		Y		
<i>Calamagrostis canescens</i>	Purple Small-reed	Y	Y		
<i>Calamagrostis epigejos</i>	Wood Small-reed		Y		
<i>Campanula latifolia</i>	Giant Bellflower	Y	Y		
<i>Campanula trachelium</i>	Nettle-leaved Bellflower	Y	Y		
<i>Cardamine flexuosa</i>	Wavy Bitter-cress		Y		
<i>Carex pallescens</i>	Pale Sedge	Y	Y		
<i>Carex pendula</i>	Pendulous Sedge		Y		
<i>Carex remota</i>	Remote Sedge	Y	Y		
<i>Carex strigosa</i>	Thin-spiked Wood-sedge	Y	Y		
<i>Carex sylvatica</i>	Wood-sedge	Y	Y		
<i>Carpinus betulus</i>	Hornbeam		Y		Y
<i>Chrysosplenium oppositifolium</i>	Opposite-leaved Golden-saxifrage	Y	Y		
<i>Circaea lutetiana</i>	Enchanter's-nightshade		Y		
<i>Clematis vitalba</i>	Traveller's-joy		Y		
<i>Conopodium majus</i>	Pignut	Y	Y		
<i>Convallaria majalis</i>	Lily-of-the-valley	Y	Y		
<i>Cornus sanguinea</i>	Dogwood		Y	Y	Y
<i>Corylus avellana</i>	Hazel		Y	Y	Y
<i>Crataegus laevigata</i>	Midland Hawthorn	Y	Y	Y	Y
<i>Crataegus monogyna</i>	Common Hawthorn		Y	Y	Y

Scientific name	Common name	AWI	Woodland plant	W21 scrub	Hedgerow value
<i>Dactylorhiza fuchsii</i>	Common Spotted-orchid		Y		
<i>Daphne laureola</i>	Spurge-laurel		Y		Y
<i>Deschampsia cespitosa</i>	Tufted Hair-grass		Y		
<i>Digitalis purpurea</i>	Foxglove		Y		
<i>Dipsacus pilosus</i>	Small Teasel		Y		
<i>Dryopteris affinis</i> ssp. <i>affinis</i>	Golden-scaled Male-fern	Y	Y		
<i>Dryopteris affinis</i> ssp. <i>borreri</i>	Borrer's Male-fern	Y	Y		
<i>Dryopteris carthusiana</i>	Narrow Buckler-fern		Y		
<i>Dryopteris dilatata</i>	Broad-leaved Buckler-fern		Y		
<i>Dryopteris filix-mas</i>	Male-fern		Y		
<i>Elymus caninus</i>	Bearded Couch		Y		
<i>Epilobium montanum</i>	Broad-leaved Willowherb		Y		
<i>Epipactis helleborine</i>	Broad-leaved Helleborine	Y	Y		
<i>Epipactis purpurata</i>	Violet Helleborine	Y	Y		
<i>Ervilia sylvatica</i>	Wood Vetch	Y	Y		
<i>Euonymus europaeus</i>	Spindle	Y	Y	Y	Y
<i>Euphorbia amygdaloides</i>	Wood Spurge	Y	Y		
<i>Euphorbia lathyris</i>	Caper Spurge		Y		
<i>Ficaria verna</i>	Lesser Celandine		Y		
<i>Filipendula ulmaria</i>	Meadowsweet		Y		
<i>Fragaria vesca</i>	Wild Strawberry		Y		
<i>Frangula alnus</i>	Alder Buckthorn		Y		Y
<i>Fraxinus excelsior</i>	Ash		Y	Y	Y
<i>Gagea lutea</i>	Yellow Star-of-bethlehem	Y	Y		
<i>Galium odoratum</i>	Sweet Woodruff	Y	Y		
<i>Geranium robertianum</i>	Herb-robert		Y		
<i>Geum rivale</i>	Water Avens	Y	Y		
<i>Geum urbanum</i>	Wood Avens		Y		
<i>Glechoma hederacea</i>	Ground-ivy		Y		
<i>Hedera helix</i> [mature, woody, 'flowering']	Ivy [mature, woody, 'flowering']		Y	Y	Y
<i>Hedera helix</i> [young, unflowering]	Ivy [young, unflowering]		Y		
<i>Helleborus viridis</i>	Green Hellebore	Y	Y		
<i>Holcus mollis</i>	Creeping Soft-grass	Y	Y		
<i>Hordelymus europaeus</i>	Wood Barley	Y	Y		
<i>Hyacinthoides non-scripta</i>	Bluebell	Y	Y		
<i>Hylotelephium telephium</i>	Orpine	Y	Y		
<i>Hypericum hirsutum</i>	Hairy St. John's-wort	Y	Y		
<i>Ilex aquifolium</i>	Holly		Y	Y	Y
<i>Iris foetidissima</i>	Stinking Iris		Y		
<i>Lamium galeobdolon</i> ssp. <i>montanum</i>	Yellow Archangel	Y	Y		
<i>Lapsana communis</i>	Nipplewort		Y		
<i>Lathraea squamaria</i>	Toothwort	Y	Y		
<i>Lathyrus linifolius</i>	Bitter Vetch	Y	Y		
<i>Lathyrus sylvestris</i>	Narrow-leaved Everlasting Pea	Y	Y		
<i>Ligustrum vulgare</i>	Wild Privet		Y	Y	Y
<i>Lithospermum officinale</i>	Common Gromwell		Y		
<i>Lonicera periclymenum</i>	Honeysuckle		Y		
<i>Luzula multiflora</i> [both spp.]	Heath Wood-rush		Y		
<i>Luzula pilosa</i>	Hairy Wood-rush	Y	Y		
<i>Luzula sylvatica</i>	Great Wood-rush	Y	Y		

Scientific name	Common name	AWI	Woodland plant	W21 scrub	Hedgerow value
<i>Lysimachia nemorum</i>	Yellow Pimpernel	Y	Y		
<i>Lysimachia nummularia</i>	Creeping-jenny		Y		
<i>Malus sylvestris</i>	Crab Apple	*	Y	Y	Y
<i>Melampyrum cristatum</i>	Crested Cow-wheat	Y	Y		
<i>Melampyrum pratense</i>	Common Cow-wheat	Y	Y		
<i>Melica nutans</i>	Mountain Melick	Y	Y		
<i>Melica uniflora</i>	Wood Melick	Y	Y		
<i>Mercurialis perennis</i>	Dog's Mercury	Y	Y		
<i>Milium effusum</i>	Wood Millet	Y	Y		
<i>Moehringia trinervia</i>	Three-veined Sandwort	Y	Y		
<i>Neottia nidus-avis</i>	Bird's-nest Orchid	Y	Y		
<i>Neottia ovata</i>	Common Twayblade		Y		
<i>Ophrys insectifera</i>	Fly Orchid	Y	Y		
<i>Orchis mascula</i>	Early-purple Orchid	Y	Y		
<i>Oxalis acetosella</i>	Wood-sorrel	Y	Y		
<i>Paris quadrifolia</i>	Herb-paris	Y	Y		
<i>Pimpinella major</i>	Greater Burnet-saxifrage	Y	Y		
<i>Platanthera chlorantha</i>	Greater Butterfly-orchid	Y	Y		
<i>Poa nemoralis</i>	Wood Meadow-grass		Y		
<i>Polypodium interjectum</i>	Intermediate Polypody		Y		
<i>Polypodium vulgare</i>	Polypody		Y		
<i>Polystichum setiferum</i>	Soft Shield-fern		Y		
<i>Populus tremula</i>	Aspen	*	Y		Y
<i>Potentilla anglica</i>	Trailing Tormentil		Y		
<i>Potentilla sterilis</i>	Barren Strawberry	Y	Y		
<i>Primula elatior</i>	Oxlip	Y	Y		
<i>Primula vulgaris</i>	Primrose	Y	Y		
<i>Prunella vulgaris</i>	Selfheal		Y		
<i>Prunus avium</i>	Wild cherry		Y		
<i>Prunus spinosa</i>	Blackthorn		Y	Y	Y
<i>Pteridium aquilinum</i>	Bracken		Y		
<i>Pyrus pyraeaster</i>	Wild Pear	*	Y		Y
<i>Quercus petraea</i>	Sessile Oak	*	Y		Y
<i>Quercus robur</i>	Pedunculate Oak		Y	Y	Y
<i>Ranunculus auricomus</i>	Goldilocks Buttercup	Y	Y		
<i>Rhamnus cathartica</i>	Purging Buckthorn		Y	Y	Y
<i>Ribes rubrum</i>	Redcurrant		Y		
<i>Rosa arvensis</i>	Field Rose		Y	Y	Y
<i>Rosa caesia</i>	Northern Dog-rose		Y		Y
<i>Rosa canina</i> agg.	Dog rose		Y	Y	Y
<i>Rosa stylosa</i>	Short-styled Field-rose		Y		Y
<i>Rosa tomentella</i>	Round-leaved Dog-rose		Y		Y
<i>Rosa tomentosa</i>	Harsh Downy-rose	Y	Y		Y
<i>Rosa</i> sp.	Rose species or hybrid		Y		Y
<i>Rubus caesius</i>	Dewberry		Y		
<i>Rubus fruticosus</i> agg.	Bramble		Y		
<i>Rubus idaeus</i>	Raspberry		Y		
<i>Rumex sanguineus</i>	Wood dock		Y		
<i>Salix caprea</i>	Goat Willow		Y		Y
<i>Salix cinerea</i>	Grey Willow		Y	Y	Y
<i>Sambucus nigra</i>	Elder		Y	Y	Y
<i>Sanicula europaea</i>	Sanicle		Y		

Scientific name	Common name	AWI	Woodland plant	W21 scrub	Hedgerow value
<i>Schedonorus giganteus</i>	Giant Fescue		Y		
<i>Scrophularia nodosa</i>	Common Figwort	Y	Y		
<i>Silene dioica</i>	Red Campion		Y		
<i>Silene flos-cuculi</i>	Ragged-robin		Y		
<i>Sorbus torminalis</i>	Wild Service-tree	Y	Y		Y
<i>Stachys sylvatica</i>	Hedge Woundwort		Y		
<i>Stellaria holostea</i>	Greater Stitchwort		Y		
<i>Tamus communis</i>	Black Bryony		Y		
<i>Teucrium scorodonia</i>	Wood Sage		Y		
<i>Tilia cordata</i>	Small-leaved Lime	*	Y		Y
<i>Ulmus glabra</i>	Wych Elm	*	Y	Y	Y
<i>Ulmus minor</i> subsp. <i>minor</i>	Small-leaved Elm		Y	Y	Y
<i>Ulmus procera</i>	English Elm		Y	Y	Y
<i>Ulmus</i> sp.	Elm species		Y	Y	Y
<i>Veronica chamaedrys</i>	Germander Speedwell		Y		
<i>Veronica montana</i>	Wood Speedwell	Y	Y		
<i>Viburnum lantana</i>	Wayfaring-tree		Y	Y	Y
<i>Viburnum opulus</i>	Guelder-rose		Y		Y
<i>Vicia sepium</i>	Bush Vetch	Y	Y		
<i>Viola odorata</i>	Sweet Violet		Y		
<i>Viola reichenbachiana</i>	Early Dog-violet	Y	Y		
<i>Viola riviniana</i>	Common Dog-violet		Y		



## APPENDIX 1B

### GUIDELINES FOR ASSESSING VETERAN TREES

These guidelines are intended to assist in the identification of trees that could be considered as 'veteran', whether they are native or non-native, singular or in groups. These guidelines will be useful when considering wood pasture and hedgerow county wildlife sites.

Veteran trees are important features in the English landscape and for a host of wildlife. The holes and hollows are suitable sites for roosting bats and nesting birds. Hundreds of different fungi, lichens and invertebrates depend on ancient trees. Rotten wood is an extremely valuable habitat especially if it is still standing.

The term '*veteran tree*' is not one of precise definition, but encompasses trees defined by three guiding principles (Read, H., English Nature 2000)

1. Trees of interest, biologically, aesthetically or culturally because of their age, size or condition (some of these are obvious others are not)
2. Trees in an ancient stage of their life
3. Trees that are old relative to others of the same species.

**NB** Girth is not a reliable criterion as different species and individuals have different life spans and growth rates. Age is also not an absolute indicator. It is the features of a tree which should and be used to assess if it is veteran or not. The more features the tree displays the stronger the indication it is veteran.

Features indicative of high value are shown in the table below (English Nature 2000):

Hollows	hollow areas on trunks or main branches (>150mm)
Holes	small holes in trunk or branches (<150mm)
Water pockets	water filled tree pools on tree or roots
Rot	Red, brown or white
Deadwood	large amounts of deadwood in crown or on ground
Bark	sap stains, loose old thick bark
Broken branch stubs	live branches which have broken with shattered ends
Splits in trunk or branch	wood fibre separation
Runs or sap/other stains	wet exudes from the surface of the bark, wounds or holes
Bore exit holes	from insect tunnelling with dry powdery residues
<b><i>Species which may be associated with veteran trees</i></b>	
Fungi	bracket fungi, toadstools with cap and stalk, skin like covering
Invertebrates	beetles, hoverflies, spiders, millipedes etc
Birds	large birds occupying cavities or nesting birds
Mammals	bats, rodents
Reptiles	snakes or lizards under loose bark
Plants and epiphytes	lichens, ferns, ivy, moss etc

## APPENDIX 1C

### FRUIT AND NUT SPECIES INCLUDED IN TRADITIONAL ORCHARDS IN CAMBRIDGESHIRE AND PETERBOROUGH

<i>Malus</i>	encompassing all varieties of apple
<i>Pyrus</i>	encompassing all varieties of pear
<i>Prunus</i>	encompassing all varieties of edible, cultivated prunus: plum, gage, quetsche, damson, myrobalan, cherries and hybrids thereof
Quince	
Medlar	
Black mulberry	
Apricot	
Peach	
Walnut	
Hazelnut	encompassing all varieties of hazel, filbert, cob and hybrids thereof

## APPENDIX 1D

### LIST OF RARE OR SCARCE FRUIT VARIETIES AND VARIETIES OF LOCAL SIGNIFICANCE

The lists below contain the varieties and tree types of those varieties that are important in terms of top fruit conservation in Cambridgeshire. Tree types as well as varieties because:

- Any veteran tree that is not one of the listed exceptions is of interest. In reality, most veterans are one of a handful of known varieties and fruit identification will usually exclude the tree as a CWS criterion. However, if the tree cannot be identified, then it should be preserved if possible - at least until propagation material has been taken and successfully propagated.
- Clonal variety becomes more and more prevalent as time passes and more and more propagation is carried out. Mature trees of the listed varieties may often be closer to the original source than the clones present in the National Fruit Collection today. This is especially true of old trees close to the original source.
- It is desirable to exclude new plantings of local varieties as a CWS criterion - most of these will (usually) arise from a single clone held in the National Fruit Collection.

Varieties that are rare or are of local significance fall into 4 categories:

**1. Any veteran fruit tree that cannot be identified by East of England Apples and Orchards Project (EEAOP), National Fruit Collections (NFC), Royal Horticultural Society RHS, or an organisation of similar standing.**

The majority of veteran fruit trees in Cambridgeshire will be of the following types and are readily identifiable:

<i>Malus</i>	<i>Pyrus</i>	<i>Prunus</i>
Bramley's Seedling	Conference	Myrobalan
Newton Wonder	William's (aka Barton)	
Blenheim Orange	Comice	

**2. Any named and verified top fruit variety that does not appear in the National Fruit Collections**

"Named" being the name known to the orchard owners

"Verified" being agreed to match a varietal description by one of the organisations mentioned in 1.

**3. Any mature trees of the following varieties**

<b>Malus</b>	<b>Prunus</b>
<b>Barnack Beauty</b>	Willingham Gage*
Chiver's Delight	Cambridge Gage
Cockett's Red	Wallis's Wonder*
Cottenham Seedling	
Emneth Early	
Green Harvey	
Histon Favourite	
Hunter's Majestic	
Huntingdon Codlin	
Jolly Miller*	
Lord Peckover	
Lady Hollendale	
Morley's Seedling	
Murfitt's Seedling	
New Rock Pippin	
Perfection *	
Red Victoria	
St Everard	
Thoday's Quarrenden	
Wayside	

*\*These varieties are not currently held in the National Fruit Collections and have only been recorded in specific orchards in Cambs. They are of great local significance and considerably at risk until further propagation and distribution has occurred.*

#### 4. Any of the 'Lost' Cambridgeshire apple varieties

There are more than 20 named varieties of apple documented as having Cambridgeshire origins. Some of these 'lost' varieties were last recorded just over fifty years ago, so it's quite likely that old trees still survive. If any of these names below are mentioned by orchard owners PLEASE CONTACT EEAOP IMMEDIATELY.

Area	Name	Description
Chatteris	Mrs. Ward	In existence 1884. First recorded 1872. Scarlet Nonpareil x ?. Raised by Lawrence, nurseryman, Size: small. Shape: intermediate, truncate-conic, convex, not ribbed. Skin: yellow or orange, flushed deep scarlet, occasional russet patches. Flesh: firm, pale yellow. Flavour: sub-acid. Season: mid – very late.
Cottenham area	John Norman	Last recorded 1946. Similar I shape to the Berkshire variety Charles Ross but duller in colour. Eye more open with long sepals and a thick short stalk.
	Queenholme Seedling	Exhibited 1898 RHS from Cottenham (only record). Size: medium. Shape: rectangular to truncate-conic, convex, ribbed. Skin: pale greenish yellow, flushed pale red. Flesh: dry. Season: very late.
Histon area	Colwell	<b>Grown locally and only mentioned once in 1936. No description.</b>
	Histon Cropper	<b>First described in 1919 and raised by John Chivers of Histon. Last recorded in 1947</b> <b>Size: large. Shape conic, convex, not ribbed. Skin: green flushed red. Season mid.</b>
	Barton	<b>In existence 1946. Resembles a Worcester Pearmain. Size medium. Shape: intermediate, truncate conic ribbed and convex. Season: mid., Skin: green flushed and striped red.</b>
Huntingdon	Woodley's Favourite	Exhibited 1888 RHS from Huntingdon. First recorded 1883. Size: large. Shape: intermediate, rectangular, convex, ribbed. Skin: greenish yellow Season: mid.
Peterborough area	Jenny Brewster	Exhibited at RHS in 1894 (only record). Possibly raised by Rev. Brewster.
	Orton Favourite	Exhibited 1894 RHS from Orton Longville (only record). Size: :large. Skin: red. Season: early – mid.
	Paston	Exhibited 1905 RHS (only record) from P/borough Season: mid.
	Leyden Pippin	Exhibited 1883 RHS (only record) from P/borough Size: medium. Shape: conic, ribbed on body. Skin green flushed with bronze. Flavour: sweet.

	<b>Scarlet Russet</b>	Exhibited 1883 RHS from Orton Hall near Peterborough. First recorded 1831. Size: small. Shape: conical. Skin: yellow with russet, flushed red. Flesh: firm. Flavour: sweet. Season: mid.
	<b>Triumph</b>	Exhibited 1904 RHS (only record) from Peterborough.
	<b>Wadlow Pride</b>	Exhibited 1902. Only record. Season: mid.
	<b>Pinder's Seedling</b>	Exhibited 1900 RHS. Only record. Season: mid.
<b>Wisbech area</b>	<b>James Kirk</b>	Catalogued 1949. Award of Merit RHS 1905. Exhibited by Cross of Wisbech. Size: medium. Shape: truncate-conic, convex. Skin: greenish yellow striped red. Flesh: crisp. Flavour: acid. Season: late.
	<b>Lord Kitchener</b>	Exhibited 1899 RHS from Wisbech (only record). Size: large. Season: early.
	<b>Scarlet Beauty</b>	Exhibited at 1906 RHS from Wisbech (only record). No description.
<b>Cambridge</b>	<b>Haggerstone Pippin</b>	A late season dessert apple raised by Mr Haggerstone in about 1805 from the seed of an American apple variety
<b>Cambridgeshire</b>	<b>Turbanks</b>	Exhibited 1883 RHS from Cambridgeshire (only record). No description.

Local fruit identification contacts Email [info@eeaop.org.uk](mailto:info@eeaop.org.uk) or [orchardbob@gmail.com](mailto:orchardbob@gmail.com)

## APPENDIX 1E

### LOCAL TRADITIONAL MANAGEMENT PRACTICES

Local traditional management practices include the following:

- Growing soft<sup>4</sup> fruit, vegetables or flowers between the trees, as long as this practice is not detrimental to the trees
- Continuing any cultural practice (e.g. cultivation programme) that has fostered the existence of a nationally rare or scarce or county rare species as listed within the Cambridgeshire and Peterborough Traditional Orchards Biodiversity Action Plan
- Pruning and training techniques that are considered traditional to the county, including the creation and maintenance of open centre trees with a short trunk

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<sup>4</sup> fruit that grows on bushes, such as gooseberry and currant.

## APPENDIX 2A

### CAMBRIDGESHIRE & PETERBOROUGH NEUTRAL & CALCAREOUS GRASSLAND INDICATORS

NG – neutral grassland; CG – calcareous grassland; \* signifies strong indicators

List updated to Stace IV nomenclature, October 2019.

Scientific name	Common name	NG	NG*	CG	CG*
<i>Achillea ptarmica</i>	Sneezewort		y		
<i>Agrimonia eupatoria</i>	Agrimony	y		y	
<i>Ajuga reptans</i>	Bugle	y			
<i>Alchemilla filicaulis ssp. vestita</i>	Hairy Lady's-mantle		y		
<i>Anacamptis morio</i>	Green-winged Orchid		y		
<i>Anacamptis pyramidalis</i>	Pyramidal Orchid				y
<i>Anthyllis vulneraria</i>	Kidney Vetch				y
<i>Asperula cynanchica</i>	Squinancywort				y
<i>Astragalus danicus</i>	Purple Milk-vetch				y
<i>Avenula pubescens</i>	Downy Oat-grass		y		y
<i>Betonica officinalis</i>	Betony		y		
<i>Blackstonia perfoliata</i>	Yellow-wort				y
<i>Brachypodium rupestre</i>	Tor-grass				y
<i>Briza media</i>	Quaking-grass		y		y
<i>Bromopsis erecta</i>	Upright Brome				y
<i>Bromus racemosus / commutatus</i>	Smooth / Meadow Brome		y		
<i>Bunium bulbocastanum</i>	Great Pignut				y
<i>Caltha palustris</i>	Marsh-marigold		y		
<i>Campanula glomerata</i>	Clustered Bellflower				y
<i>Campanula rotundifolia</i>	Harebell				y
<i>Cardamine pratensis</i>	Cuckooflower	y			
<i>Carex caryophyllea</i>	Spring-sedge		y		y
<i>Carex disticha</i>	Brown Sedge		y		
<i>Carex ericetorum</i>	Rare Spring-sedge				y
<i>Carex flacca</i>	Glaucous Sedge		y		y
<i>Carex nigra</i>	Common Sedge		y		
<i>Carex panicea</i>	Carnation Sedge		y		
<i>Carex spicata</i>	Spiked Sedge		y		
<i>Carlina vulgaris</i>	Carlina Thistle				y
<i>Centaurea nigra / debeauxii</i>	Common / Chalk Knapweed	y		y	
<i>Centaurea scabiosa</i>	Greater Knapweed				y
<i>Centaureum erythraea</i>	Common Centaury	y		y	
<i>Cirsium acaule</i>	Dwarf Thistle		y		y
<i>Cirsium eriophorum</i>	Woolly Thistle				y
<i>Clinopodium acinos</i>	Basil-thyme				y
<i>Clinopodium vulgare</i>	Wild Basil				y
<i>Conopodium majus</i>	Pignut	y			
<i>Dactylorhiza fuchsii</i>	Common Spotted-orchid		y		y
<i>Dactylorhiza incarnata</i>	Early Marsh-orchid		y		
<i>Dactylorhiza praetermissa</i>	Southern Marsh-orchid		y		
<i>Danthonia decumbens</i>	Heath-grass		y		
<i>Eleocharis palustris</i>	Common Spike-rush	y			
<i>Euphrasia nemorosa</i>	Eyebright		y		y
<i>Euphrasia pseudokernerii</i>	Chalk Eyebright				y
<i>Festuca ovina</i>	Sheep's-fescue				y

Scientific name	Common name	NG	NG*	CG	CG*
<i>Ficaria verna</i>	Lesser Celandine	y			
<i>Filipendula vulgaris</i>	Dropwort		y		y
<i>Fritillaria meleagris</i>	Fritillary		y		
<i>Galium uliginosum</i>	Fen Bedstraw		y		
<i>Galium verum</i>	Lady's Bedstraw	y		y	
<i>Genista tinctoria</i>	Dyer's Greenweed		y		
<i>Gentianella amarella</i>	Autumn Gentian				y
<i>Geranium pratense</i>	Meadow Crane's-bill	y			
<i>Gymnadenia conopsea</i>	Fragrant Orchid				y
<i>Helianthemum nummularium</i>	Common Rock-rose				y
<i>Helictochloa pratensis</i>	Meadow Oat-grass		y		y
<i>Himantoglossum hircinum</i>	Lizard Orchid				y
<i>Hippocrepis comosa</i>	Horseshoe Vetch				y
<i>Hordeum secalinum</i>	Meadow Barley	y			
<i>Hypericum perforatum</i>	Perforate St.John's-wort			y	
<i>Hypericum tetrapterum</i>	Square-stemmed St. John's-wort	y			
<i>Hypochaeris maculata</i>	Spotted Cat's-ear				y
<i>Inula conyzae</i>	Ploughman's-spikenard				y
<i>Jacobaea aquatica</i>	Marsh Ragwort		y		
<i>Jacobaea erucifolia</i>	Hoary Ragwort	y		y	
<i>Juncus compressus</i>	Round-fruited Rush	y			
<i>Knautia arvensis</i>	Field Scabious		y		y
<i>Koeleria macrantha</i>	Crested Hair-grass		y		y
<i>Lathyrus nissolia</i>	Grass Vetchling		y		
<i>Lathyrus pratensis</i>	Meadow Vetchling	y			
<i>Leontodon hispidus</i>	Rough Hawkbit		y		y
<i>Leontodon saxatilis</i>	Lesser Hawkbit		y		y
<i>Leucanthemum vulgare</i>	Oxeye Daisy	y		y	
<i>Linum catharticum</i>	Fairy Flax		y		y
<i>Linum perenne</i>	Perennial Flax				y
<i>Lotus corniculatus</i>	Common Bird's-foot-trefoil	y		y	
<i>Lotus pedunculatus</i>	Greater Bird's-foot Trefoil	y			
<i>Luzula campestris</i>	Field Wood-rush	y			
<i>Lysimachia nummularia</i>	Creeping-Jenny	y			
<i>Neottia ovata</i>	Common Twayblade	y			
<i>Oenanthe fistulosa</i>	Tubular Water-dropwort		y		
<i>Oenanthe lachenalii</i>	Parsley Water-dropwort		y		
<i>Oenanthe silaifolia</i>	Narrow-leaved Water-dropwort		y		
<i>Onobrychis viciifolia</i>	Sainfoin				y
<i>Ononis repens</i>	Common Restharrow		y		y
<i>Ononis spinosa</i>	Spiny Restharrow		y		y
<i>Ophioglossum vulgatum</i>	Adder's-tongue Fern		y		
<i>Orchis anthropophora</i>	Man Orchid				y
<i>Origanum vulgare</i>	Marjoram				y
<i>Orobanche elatior</i>	Knapweed Broomrape				y
<i>Pastinaca sativa</i>	Wild Parsnip			y	
<i>Picris hieracioides</i>	Hawkweed Ox-tongue				y
<i>Pilosella officinarum</i>	Mouse-ear Hawkweed				y
<i>Pimpinella saxifraga</i>	Burnet-saxifrage	y		y	
<i>Plantago media</i>	Hoary Plantain	y		y	
<i>Polygala vulgaris</i>	Common Milkwort		y		y
<i>Potentilla erecta</i>	Tormentil		y		
<i>Potentilla sterilis</i>	Barren Strawberry		y		

Scientific name	Common name	NG	NG*	CG	CG*
<i>Poterium sanguisorba</i> ssp. <i>sanguisorba</i>	Salad Burnet		y		y
<i>Primula veris</i>	Cowslip	y		y	
<i>Primula vulgaris</i>	Primrose	y			
<i>Pulicaria dysenterica</i>	Common Fleabane	y			
<i>Pulsatilla vulgaris</i>	Pasqueflower				y
<i>Ranunculus auricomus</i>	Goldilocks Buttercup	y			
<i>Ranunculus flammula</i>	Lesser Spearwort		y		
<i>Rhinanthus minor</i>	Yellow Rattle		y		y
<i>Rumex acetosa</i>	Common Sorrel	y			
<i>Sanguisorba officinalis</i>	Great Burnet		y		
<i>Saxifraga granulata</i>	Meadow Saxifrage		y		
<i>Scabiosa columbaria</i>	Small Scabious				y
<i>Serratula tinctoria</i>	Saw-wort		y		y
<i>Seseli libanotis</i>	Moon Carrot				y
<i>Silaum silaus</i>	Pepper-saxifrage		y		
<i>Silene flos-cuculi</i>	Ragged-Robin		y		
<i>Stellaria graminea</i>	Lesser Stitchwort	y			
<i>Succisa pratensis</i>	Devil's-bit Scabious		y		y
<i>Tephrosia integrifolia</i>	Field Fleawort				y
<i>Thalictrum flavum</i>	Common Meadow-rue		y		
<i>Thalictrum minus</i>	Lesser Meadow-rue				y
<i>Thesium humifusum</i>	Bastard-toadflax				y
<i>Thymus drucei</i>	Wild Thyme				y
<i>Thymus pulegioides</i>	Large Thyme				y
<i>Trifolium fragiferum</i>	Strawberry Clover	y			
<i>Trifolium ochroleucon</i>	Sulphur Clover		y		
<i>Triglochin palustris</i>	Marsh Arrow-grass		y		
<i>Trisetum flavescens</i>	Yellow Oat-grass	y		y	
<i>Valeriana dioica</i>	Marsh Valerian		y		
<i>Viola canina</i>	Heath Dog-violet		y		
<i>Viola hirta</i>	Hairy Violet		y		y

31 56 13 64



## APPENDIX 2B

### GRASSLAND SPECIES

List produced January 2013 and updated to Stace IV nomenclature, October 2019.

Scientific name	Common name
<i>Achillea millefolium</i>	Yarrow
<i>Achillea ptarmica</i>	Sneezewort
<i>Agrimonia eupatoria</i>	Agrimony
<i>Agrimonia procera</i>	Fragrant Agrimony
<i>Agrostis canina</i>	Velvet Bent
<i>Agrostis capillaris</i>	Common Bent
<i>Agrostis stolonifera</i>	Creeping Bent
<i>Agrostis vinealis</i>	Brown Bent
<i>Aira caryophyllea</i>	Silver Hair-grass
<i>Aira praecox</i>	Early Hair-grass
<i>Ajuga reptans</i>	Bugle
<i>Alchemilla filicaulis</i> ssp. <i>vestita</i>	Hairy Lady's-mantle
<i>Allium oleraceum</i>	Field Garlic
<i>Allium vineale</i>	Crow Garlic
<i>Alopecurus geniculatus</i>	Marsh Foxtail
<i>Alopecurus pratensis</i>	Meadow Foxtail
<i>Anacamptis morio</i>	Green-winged Orchid
<i>Anacamptis pyramidalis</i>	Pyramidal Orchid
<i>Angelica sylvestris</i>	Wild Angelica
<i>Anthoxanthum odoratum</i>	Sweet Vernal-grass
<i>Anthriscus caucalis</i>	Bur Chervil
<i>Anthriscus sylvestris</i>	Cow Parsley
<i>Anthyllis vulneraria</i>	Kidney Vetch
<i>Aphanes arvensis</i>	Parsley-piert
<i>Aphanes australis</i>	Slender Parsley-piert
<i>Arabidopsis thaliana</i>	Thale Cress
<i>Arabis hirsuta</i>	Hairy Rock-cress
<i>Arenaria serpyllifolia</i> ssp. <i>serpyllifolia</i>	Thyme-leaved Sandwort
<i>Arrhenatherum elatius</i>	False Oat-grass
<i>Asperula cynanchica</i>	Squinancywort
<i>Astragalus danicus</i>	Purple Milk-vetch
<i>Astragalus glycyphyllos</i>	Wild Liquorice
<i>Avenella flexuosa</i>	Wavy Hair-grass
<i>Avenula pubescens</i>	Downy Oat-grass
<i>Bellis perennis</i>	Common Daisy
<i>Betonica officinalis</i>	Betony
<i>Bistorta officinalis</i>	Common Bistort
<i>Blackstonia perfoliata</i>	Yellow-wort
<i>Blysmus compressus</i>	Flat-sedge
<i>Brachypodium pinnatum</i>	Tor-grass
<i>Brachypodium rupestre</i>	Heath False-brome
<i>Briza media</i>	Quaking-grass
<i>Bromopsis erecta</i>	Upright Brome
<i>Bromus hordeaceus</i> ssp. <i>hordeaceus</i>	Common Soft-brome
<i>Bromus racemosus</i> / <i>commutatus</i>	Smooth / Meadow Brome
<i>Bunium bulbocastanum</i>	Great Pignut

Scientific name	Common name
<i>Bupleurum tenuissimum</i>	Slender Hare's-ear
<i>Calamagrostis epigejos</i>	Wood Small-reed
<i>Calluna vulgaris</i>	Heather
<i>Caltha palustris</i>	Marsh-marigold
<i>Campanula glomerata</i>	Clustered Bellflower
<i>Campanula rotundifolia</i>	Harebell
<i>Cardamine flexuosa</i>	Wavy Bitter-cress
<i>Cardamine hirsuta</i>	Hairy Bitter-cress
<i>Cardamine pratensis</i>	Cuckooflower
<i>Carduus crispus</i>	Wetted Thistle
<i>Carduus nutans</i>	Musk Thistle
<i>Carex acuta</i>	Slender Tufted-sedge
<i>Carex acutiformis</i>	Lesser Pond-sedge
<i>Carex arenaria</i>	Sand Sedge
<i>Carex binervis</i>	Green-ribbed Sedge
<i>Carex caryophyllea</i>	Spring-sedge
<i>Carex distans</i>	Distant Sedge
<i>Carex disticha</i>	Brown Sedge
<i>Carex divulsa s.l.</i>	Grey/Many-leaved Sedge
<i>Carex echinata</i>	Star Sedge
<i>Carex ericetorum</i>	Rare Spring-sedge
<i>Carex flacca</i>	Glaucous Sedge
<i>Carex hirta</i>	Hairy Sedge
<i>Carex leporina</i>	Oval Sedge
<i>Carex muricata ssp. pairae</i>	Small-fruited Prickly-sedge
<i>Carex nigra</i>	Common Sedge
<i>Carex otrubae</i>	False Fox-sedge
<i>Carex panicea</i>	Carnation Sedge
<i>Carex pilulifera</i>	Pill Sedge
<i>Carex spicata</i>	Spiked Sedge
<i>Carlina vulgaris</i>	Carlina Thistle
<i>Catapodium rigidum</i>	Fern-grass
<i>Centaurea nigra / debeauxii</i>	Common / Chalk Knapweed
<i>Centaurea scabiosa</i>	Greater Knapweed
<i>Centaureum erythraea</i>	Common Centaury
<i>Centaureum pulchellum</i>	Lesser Centaury
<i>Cerastium arvense</i>	Field Mouse-ear
<i>Cerastium fontanum</i>	Common Mouse-ear
<i>Cerastium glomeratum</i>	Sticky Mouse-ear
<i>Cerastium semidecandrum</i>	Little Mouse-ear
<i>Cirsium acaule</i>	Dwarf Thistle
<i>Cirsium eriophorum</i>	Woolly Thistle
<i>Cirsium palustre</i>	Marsh Thistle
<i>Clinopodium acinos</i>	Basil-thyme
<i>Clinopodium ascendens</i>	Common Calamint
<i>Clinopodium nepeta</i>	Lesser Calamint
<i>Clinopodium vulgare</i>	Wild Basil
<i>Coeloglossum viride</i>	Frog Orchid
<i>Conopodium majus</i>	Pignut
<i>Crepis biennis</i>	Rough Hawk's-beard
<i>Crepis capillaris</i>	Smooth Hawk's-beard
<i>Cruciata laevipes</i>	Crosswort
<i>Cynoglossum officinale</i>	Hound's-tongue

Scientific name	Common name
<i>Cynosurus cristatus</i>	Crested Dog's-tail
<i>Dactylis glomerata</i>	Cock's-foot
<i>Dactylorhiza fuchsii</i>	Common Spotted-orchid
<i>Dactylorhiza incarnata</i>	Early Marsh-orchid
<i>Dactylorhiza maculata</i>	Heath Spotted-orchid
<i>Dactylorhiza praetermissa</i>	Southern Marsh-orchid
<i>Danthonia decumbens</i>	Heath-grass
<i>Daucus carota</i>	Wild Carrot
<i>Deschampsia cespitosa</i>	Tufted Hair-grass
<i>Dianthus armeria</i>	Deptford Pink
<i>Dianthus deltoides</i>	Maiden Pink
<i>Dipsacus fullonum</i>	Wild Teasel
<i>Echium vulgare</i>	Viper's-bugloss
<i>Eleocharis palustris</i>	Common Spike-rush
<i>Epilobium palustre</i>	Marsh Willowherb
<i>Equisetum palustre</i>	Marsh Horsetail
<i>Erica tetralix</i>	Cross-leaved Heath
<i>Erodium cicutarium</i>	Common Stork's-bill
<i>Erophila verna</i>	Common Whitlowgrass
<i>Erythraea hirsuta</i>	Hairy Tare
<i>Erythraea gracile</i>	Slender Tare
<i>Erythraea tetraspermum</i>	Smooth Tare
<i>Eupatorium cannabinum</i>	Hemp-agrimony
<i>Euphorbia cyparissias</i>	Cypress Spurge
<i>Euphrasia nemorosa</i>	Eyebright
<i>Euphrasia pseudokernerii</i>	Chalk Eyebright
<i>Festuca ovina</i> agg.	Sheep's Fescue [agg.]
<i>Festuca rubra</i>	Red Fescue
<i>Ficaria verna</i>	Lesser Celandine
<i>Filago lutescens</i>	Red-tipped Cudweed
<i>Filago germanica</i>	Common Cudweed
<i>Filago pyramidata</i>	Broad-leaved Cudweed
<i>Filipendula ulmaria</i>	Meadowsweet
<i>Filipendula vulgaris</i>	Dropwort
<i>Fragaria vesca</i>	Wild Strawberry
<i>Fritillaria meleagris</i>	Fritillary
<i>Galium album</i>	Hedge Bedstraw
<i>Galium palustre</i>	Marsh-bedstraw
<i>Galium parisiense</i>	Wall Bedstraw
<i>Galium saxatile</i>	Heath Bedstraw
<i>Galium uliginosum</i>	Fen Bedstraw
<i>Galium verum</i>	Lady's Bedstraw
<i>Genista tinctoria</i>	Dyer's Greenweed
<i>Gentianella amarella</i>	Autumn Gentian
<i>Geranium columbinum</i>	Long-stalked Crane's-bill
<i>Geranium dissectum</i>	Cut-leaved Crane's-bill
<i>Geranium molle</i>	Dove's-foot Crane's-bill
<i>Geranium pratense</i>	Meadow Crane's-bill
<i>Geranium pusillum</i>	Small-flowered Crane's-bill
<i>Geranium sanguineum</i>	Bloody Crane's-bill
<i>Glechoma hederacea</i>	Ground-ivy
<i>Gymnadenia conopsea</i>	Fragrant Orchid
<i>Helianthemum nummularium</i>	Common Rock-rose

Scientific name	Common name
<i>Helictochloa pratensis</i>	Meadow Oat-grass
<i>Heracleum sphondylium</i>	Hogweed
<i>Herniaria glabra</i>	Smooth Rupturewort
<i>Hieracium</i> agg.	hawkweeds
<i>Himantoglossum hircinum</i>	Lizard Orchid
<i>Hippocrepis comosa</i>	Horseshoe Vetch
<i>Holcus lanatus</i>	Yorkshire-fog
<i>Hordeum secalinum</i>	Meadow Barley
<i>Hypericum hirsutum</i>	Hairy St John's-wort
<i>Hypericum humifusum</i>	Trailing St John's-wort
<i>Hypericum maculatum</i>	Imperforate St John's-wort
<i>Hypericum perforatum</i>	Perforate St John's-wort
<i>Hypericum pulchrum</i>	Slender St John's-wort
<i>Hypericum tetrapterum</i>	Square-stemmed St John's-wort
<i>Hypochaeris glabra</i>	Smooth Cat's-ear
<i>Hypochaeris maculata</i>	Spotted Cat's-ear
<i>Hypochaeris radicata</i>	Cat's-ear
<i>Iberis amara</i>	Wild Candytuft
<i>Inula conyzae</i>	Ploughman's-spikenard
<i>Isolepis setacea</i>	Bristle Club-rush
<i>Jacobaea aquatica</i>	Marsh Ragwort
<i>Jacobaea erucifolia</i>	Hoary Ragwort
<i>Juncus acutiflorus</i>	Sharp-flowered Rush
<i>Juncus articulatus</i>	Jointed Rush
<i>Juncus bulbosus</i>	Bulbous Rush
<i>Juncus compressus</i>	Round-fruited Rush
<i>Juncus conglomeratus</i>	Compact Rush
<i>Juncus effusus</i>	Soft-rush
<i>Juncus inflexus</i>	Hard Rush
<i>Juncus subnodulosus</i>	Blunt-flowered Rush
<i>Knautia arvensis</i>	Field Scabious
<i>Koeleria macrantha</i>	Crested Hair-grass
<i>Lathyrus aphaca</i>	Yellow Vetchling
<i>Lathyrus nissolia</i>	Grass Vetchling
<i>Lathyrus pratensis</i>	Meadow Vetchling
<i>Leontodon hispidus</i>	Rough Hawkbit
<i>Leontodon saxatilis</i>	Lesser Hawkbit
<i>Leucanthemum vulgare</i>	Oxeye Daisy
<i>Linaria vulgaris</i>	Common Toadflax
<i>Linum catharticum</i>	Fairy Flax
<i>Linum perenne</i>	Perennial Flax
<i>Lithospermum officinale</i>	Common Gromwell
<i>Logfia minima</i>	Small Cudweed
<i>Lolium perenne</i>	Perennial Rye-grass
<i>Lotus corniculatus</i>	Common Bird's-foot-trefoil
<i>Lotus pedunculatus</i>	Greater Bird's-foot-trefoil
<i>Lotus tenuis</i>	Narrow-leaved Bird's-foot-trefoil
<i>Luzula campestris</i>	Field Wood-rush
<i>Luzula multiflora</i>	Heath Wood-rush
<i>Lycopus europaeus</i>	Gypsywort
<i>Lysimachia nummularia</i>	Creeping-Jenny
<i>Malva moschata</i>	Musk-mallow
<i>Marrubium vulgare</i>	White Horehound

Scientific name	Common name
<i>Medicago arabica</i>	Spotted Medick
<i>Medicago lupulina</i>	Black Medick
<i>Medicago minima</i>	Bur Medick
<i>Medicago sativa</i> ssp. <i>falcata</i>	Sickle Medick
<i>Melilotus altissimus</i>	Tall Melilot
<i>Mentha aquatica</i>	Water Mint
<i>Mentha arvensis</i>	Corn Mint
<i>Muscari neglectum</i>	Grape-hyacinth
<i>Myosotis discolor</i>	Changing Forget-me-not
<i>Myosotis ramosissima</i>	Early Forget-me-not
<i>Nardus stricta</i>	Mat-grass
<i>Neottia ovata</i>	Common Twayblade
<i>Nepeta cataria</i>	Cat-mint
<i>Odontites vernus</i>	Red Bartsia
<i>Oenanthe fistulosa</i>	Tubular Water-dropwort
<i>Oenanthe lachenalii</i>	Parsley Water-dropwort
<i>Oenanthe pimpinelloides</i>	Corky-fruited Water-dropwort
<i>Oenanthe silaifolia</i>	Narrow-leaved Water-dropwort
<i>Omalothea sylvatica</i>	Heath Cudweed
<i>Onobrychis viciifolia</i>	Sainfoin
<i>Ononis repens</i>	Common Restharrow
<i>Ononis spinosa</i>	Spiny Restharrow
<i>Ophioglossum vulgatum</i>	Adder's-tongue Fern
<i>Ophrys apifera</i>	Bee Orchid
<i>Ophrys insectifera</i>	Fly Orchid
<i>Orchis anthropophora</i>	Man Orchid
<i>Origanum vulgare</i>	Marjoram
<i>Ornithopus perpusillus</i>	Bird's-foot
<i>Orobanche elatior</i>	Knapweed Broomrape
<i>Orobanche minor</i>	Common Broomrape
<i>Pastinaca sativa</i>	Wild Parsnip
<i>Phleum bertolonii</i>	Smaller Cat's-tail
<i>Phleum phleoides</i>	Purple-stem Cat's-tail
<i>Phleum pratense</i>	Timothy
<i>Picris hieracioides</i>	Hawkweed Ox-tongue
<i>Pilosella officinarum</i>	Mouse-ear Hawkweed
<i>Pimpinella major</i>	Greater Burnet-saxifrage
<i>Pimpinella saxifraga</i>	Burnet-saxifrage
<i>Plantago coronopus</i>	Buck's-horn Plantain
<i>Plantago lanceolata</i>	Ribwort Plantain
<i>Plantago media</i>	Hoary Plantain
<i>Poa angustifolia</i>	Narrow-leaved Meadow-grass
<i>Poa annua</i>	Annual Meadow-grass
<i>Poa compressa</i>	Flattened Meadow-grass
<i>Poa humilis</i>	Spreading Meadow-grass
<i>Poa pratensis</i>	Smooth Meadow-grass
<i>Poa trivialis</i>	Rough Meadow-grass
<i>Polygala serpyllifolia</i>	Heath Milkwort
<i>Polygala vulgaris</i>	Common Milkwort
<i>Potentilla anglica</i>	Trailing Tormentil
<i>Potentilla anserina</i>	Silverweed
<i>Potentilla argentea</i>	Hoary Cinquefoil
<i>Potentilla erecta</i>	Tormentil

Scientific name	Common name
<i>Potentilla reptans</i>	Creeping Cinquefoil
<i>Potentilla sterilis</i>	Barren Strawberry
<i>Potentilla verna</i>	Spring Cinquefoil
<i>Poterium sanguisorba</i> ssp. <i>sanguisorba</i>	Salad Burnet
<i>Primula veris</i>	Cowslip
<i>Primula vulgaris</i>	Primrose
<i>Prunella vulgaris</i>	Self-heal
<i>Pteridium aquilinum</i>	Bracken
<i>Pulicaria dysenterica</i>	Common Fleabane
<i>Pulsatilla vulgaris</i>	Pasqueflower
<i>Ranunculus acris</i>	Meadow Buttercup
<i>Ranunculus auricomus</i>	Goldilocks Buttercup
<i>Ranunculus bulbosus</i>	Bulbous Buttercup
<i>Ranunculus flammula</i>	Lesser Spearwort
<i>Ranunculus parviflorus</i>	Small-flowered Buttercup
<i>Ranunculus repens</i>	Creeping Buttercup
<i>Reseda lutea</i>	Wild Mignonette
<i>Rhinanthus minor</i>	Yellow Rattle
<i>Rumex acetosa</i>	Common Sorrel
<i>Rumex acetosella</i>	Sheep's Sorrel
<i>Rumex pulcher</i>	Fiddle Dock
<i>Sabulina tenuifolia</i>	Fine-leaved Sandwort
<i>Sagina apetala</i>	Annual Pearlwort
<i>Sagina nodosa</i>	Knotted Pearlwort
<i>Salvia verbenaca</i>	Wild Clary
<i>Samolus valerandi</i>	Brookweed
<i>Sanguisorba officinalis</i>	Great Burnet
<i>Saxifraga granulata</i>	Meadow Saxifrage
<i>Saxifraga tridactylites</i>	Rue-leaved Saxifrage
<i>Scabiosa columbaria</i>	Small Scabious
<i>x Schedolium loliaceum</i>	Hybrid Fescue
<i>Schedonorus arundinaceus</i>	Tall Fescue
<i>Schedonorus pratensis</i>	Meadow Fescue
<i>Scleranthus annuus</i>	Annual Knawel
<i>Scorzonerooides autumnalis</i>	Autumn Hawkbit
<i>Scrophularia nodosa</i>	Common Figwort
<i>Sedum acre</i>	Biting Stonecrop
<i>Senecio sylvaticus</i>	Heath Groundsel
<i>Serratula tinctoria</i>	Saw-wort
<i>Seseli libanotis</i>	Moon Carrot
<i>Sherardia arvensis</i>	Field Madder
<i>Silaum silaus</i>	Pepper-saxifrage
<i>Silene flos-cuculi</i>	Ragged-Robin
<i>Silene conica</i>	Sand Catchfly
<i>Silene otites</i>	Spanish Catchfly
<i>Silene vulgaris</i>	Bladder Champion
<i>Sison amomum</i>	Stone Parsley
<i>Sison segetum</i>	Corn Parsley
<i>Spergula arvensis</i>	Corn Spurrey
<i>Spergularia rubra</i>	Sand Spurrey
<i>Stachys palustris</i>	Marsh Woundwort
<i>Stellaria alsine</i>	Bog Stitchwort
<i>Stellaria graminea</i>	Lesser Stitchwort

<b>Scientific name</b>	<b>Common name</b>
<i>Stellaria pallida</i>	Lesser Chickweed
<i>Succisa pratensis</i>	Devil's-bit Scabious
<i>Teesdalia nudicaulis</i>	Shepherd's Cress
<i>Tephrosieris integrifolia</i>	Field Fleawort
<i>Teucrium scorodonia</i>	Wood Sage
<i>Thalictrum flavum</i>	Common Meadow-rue
<i>Thalictrum minus</i>	Lesser Meadow-rue
<i>Thesium humifusum</i>	Bastard-toadflax
<i>Thymus drucei</i>	Wild Thyme
<i>Thymus pulegioides</i>	Large Thyme
<i>Torilis nodosa</i>	Knotted Hedge-parsley
<i>Tragopogon pratensis</i>	Goat's-beard
<i>Trifolium arvense</i>	Hare's-foot Clover
<i>Trifolium campestre</i>	Hop Trefoil
<i>Trifolium dubium</i>	Lesser Trefoil
<i>Trifolium fragiferum</i>	Strawberry Clover
<i>Trifolium glomeratum</i>	Clustered Clover
<i>Trifolium medium</i>	Zigzag Clover
<i>Trifolium micranthum</i>	Slender Trefoil
<i>Trifolium ochroleucon</i>	Sulphur Clover
<i>Trifolium pratense</i>	Red Clover
<i>Trifolium repens</i>	White Clover
<i>Trifolium scabrum</i>	Rough Clover
<i>Trifolium striatum</i>	Knotted Clover
<i>Trifolium subterraneum</i>	Subterranean Clover
<i>Triglochin palustris</i>	Marsh Arrow-grass
<i>Trisetum flavescens</i>	Yellow Oat-grass
<i>Turritis glabra</i>	Tower Mustard
<i>Tussilago farfara</i>	Colt's-foot
<i>Valeriana dioica</i>	Marsh Valerian
<i>Valeriana officinalis</i>	Common Valerian
<i>Valerianella locusta</i>	Common Cornsalad
<i>Verbascum nigrum</i>	Dark Mullein
<i>Verbascum pulverulentum</i>	Hoary Mullein
<i>Verbascum thapsus</i>	Great Mullein
<i>Verbena officinalis</i>	Vervain
<i>Veronica arvensis</i>	Wall Speedwell
<i>Veronica chamaedrys</i>	Germander Speedwell
<i>Veronica officinalis</i>	Heath Speedwell
<i>Veronica serpyllifolia</i>	Thyme-leaved Speedwell
<i>Veronica spicata</i> ssp. <i>spicata</i>	Spiked Speedwell
<i>Vicia cracca</i>	Tufted Vetch
<i>Vicia lathyroides</i>	Spring Vetch
<i>Vicia sativa</i> ssp. <i>nigra</i>	Common Vetch
<i>Viola canina</i>	Heath Dog-violet
<i>Viola hirta</i>	Hairy Violet
<i>Viola odorata</i>	Sweet Violet
<i>Viola riviniana</i>	Common Dog-violet
<i>Viola tricolor</i>	Wild Pansy
<i>Vulpia bromoides</i>	Squirrel-tail Fescue
<i>Vulpia ciliata</i> ssp. <i>ambigua</i>	Bearded Fescue
<i>Vulpia myuros</i>	Rat's-tail Fescue

## APPENDIX 2C

### VASCULAR PLANT AND LICHEN INDICATOR SPECIES FOR DRY AND WET ACIDIC GRASSLANDS AND OPEN COMMUNITIES ON SANDY OR ACIDIC SUBSTRATES

The following list includes indicator species for various grassland and more open communities:

- dry acid grassland communities such as U1 (*Festuca ovina* - *Agrostis capillaris* - *Rumex acetosella*)
- the acid/calcareous open communities of the Breck sands (Chippenham & Kennett) and glacial sand/gravel deposits (as exemplified by Hildersham Furze Hills)
- communities grading into the acid end of MG5 (MG5c, *Cynosurus cristatus* - *Centaurea nigra* grassland, *Danthonia decumbens* sub-community)
- wet, mineral or slightly peaty ± acid communities (but not including mires)

List updated to Stace IV nomenclature, October 2019.

Scientific name	Common name	Indicator value
<i>Agrostis canina</i>	Velvet Bent	strong
<i>Agrostis vinealis</i>	Brown Bent	strong
<i>Aira caryophyllea</i>	Silver Hair-grass	strong
<i>Aira praecox</i>	Early Hair-grass	strong
<i>Anthriscus caucalis</i>	Bur Parsley	weak
<i>Aphanes arvensis</i>	Parsley-piert	weak
<i>Aphanes australis</i>	Slender Parsley-piert	weak
<i>Arenaria serpyllifolia</i> ssp. <i>serpyllifolia</i>	Thyme-leaved Sandwort	weak
<i>Avenella flexuosa</i>	Wavy Hair-grass	strong
<i>Betonica officinalis</i>	Betony	weak
<i>Calluna vulgaris</i>	Heather	strong
<i>Campanula rotundifolia</i>	Harebell	strong
<i>Carex arenaria</i>	Sand Sedge	strong
<i>Carex echinata</i>	Star Sedge	strong
<i>Carex leporina</i>	Oval Sedge	weak
<i>Carex muricata</i> ssp. <i>pairae</i>	Prickly Sedge	weak
<i>Carex pilulifera</i>	Pill Sedge	strong
<i>Cerastium arvense</i>	Field Mouse-ear	strong
<i>Cerastium semidecandrum</i>	Little Mouse-ear	strong
<i>Cladonia</i> spp.	(Pixie) Cup-lichens	strong
<i>Conopodium majus</i>	Pignut	weak
<i>Dactylorhiza maculata</i>	Heath Spotted-orchid	strong
<i>Danthonia decumbens</i>	Heath-grass	strong
<i>Dianthus deltoides</i>	Maiden Pink	strong
<i>Echium vulgare</i>	Viper's Bugloss	weak
<i>Epilobium palustre</i>	Marsh Willowherb	weak
<i>Erica tetralix</i>	Cross-leaved Heath	strong
<i>Erodium cicutarium</i> agg.	Common Stork's-bill	weak
<i>Erophila verna</i>	Common Whitlow-grass	weak
<i>Festuca ovina</i> agg.	Sheep's Fescue [agg.]	strong
<i>Filago germanica</i>	Common Cudweed	weak
<i>Filago lutescens</i>	Red-tipped Cudweed	strong
<i>Filago pyramidata</i>	Broad-leaved Cudweed	weak



Scientific name	Common name	Indicator value
<i>Galium parisiense</i>	Wall Bedstraw	strong
<i>Galium saxatile</i>	Heath Bedstraw	strong
<i>Galium verum</i>	Lady's Bedstraw	weak
<i>Herniaria glabra</i>	Smooth Rupturewort	strong
<i>Hypericum humifusum</i>	Trailing St. John's-wort	weak
<i>Hypericum pulchrum</i>	Slender St. John's-wort	strong
<i>Hypochaeris glabra</i>	Smooth Cat's-ear	strong
<i>Hypochaeris radicata</i>	Common Cat's-ear	weak
<i>Isolepis setacea</i>	Bristle Club-rush	weak
<i>Juncus bulbosus</i>	Bulbous Rush	strong
<i>Logfia minima</i>	Small Cudweed	strong
<i>Lotus corniculatus</i>	Common Bird's-foot-trefoil	weak
<i>Luzula campestris</i>	Field Wood-rush	weak
<i>Luzula multiflora</i>	Heath Wood-rush	strong
<i>Medicago minima</i>	Bur Medick	strong
<i>Medicago sativa</i> ssp. <i>falcata</i>	Sickle Medick	strong
<i>Myosotis discolor</i>	Changing Forget-me-not	weak
<i>Myosotis ramosissima</i>	Early Forget-me-not	weak
<i>Nardus stricta</i>	Mat-grass	strong
<i>Omalotheca sylvatica</i>	Heath Cudweed	strong
<i>Ornithopus perpusillus</i>	Bird's-foot	strong
<i>Peltigera</i> spp	Dog-lichens	weak
<i>Phleum phleoides</i>	Purple-stem Cat's-tail	strong
<i>Pilosella officinarum</i>	Mouse-ear Hawkweed	strong
<i>Plantago coronopus</i>	Buck's-horn Plantain	weak
<i>Polygala serpyllifolia</i>	Heath Milkwort	strong
<i>Potentilla argentea</i>	Hoary Cinquefoil	strong
<i>Potentilla erecta</i>	Tormentil	strong
<i>Pteridium aquilinum</i>	Bracken	weak
<i>Rumex acetosa</i>	Common Sorrel	weak
<i>Rumex acetosella</i>	Sheep's Sorrel	strong
<i>Sabulina tenuifolia</i>	Fine-leaved Sandwort	strong
<i>Sagina apetala</i>	Annual Pearlwort	weak
<i>Sagina nodosa</i>	Knotted Pearlwort	weak
<i>Saxifraga granulata</i>	Meadow Saxifrage	weak
<i>Saxifraga tridactylites</i>	Rue-leaved Saxifrage	weak
<i>Scleranthus annuus</i>	Annual Knawel	strong
<i>Sedum acre</i>	Biting Stonecrop	weak
<i>Senecio sylvaticus</i>	Heath Groundsel	weak
<i>Silene conica</i>	Sand Catchfly	strong
<i>Silene otites</i>	Spanish Catchfly	strong
<i>Spergula arvensis</i>	Corn Spurrey	strong
<i>Spergularia rubra</i>	Sand Spurrey	strong
<i>Stellaria alsine</i>	Bog Stitchwort	strong
<i>Stellaria graminea</i>	Lesser Stitchwort	weak
<i>Stellaria pallida</i>	Lesser Chickweed	weak
<i>Succisa pratensis</i>	Devil's-bit Scabious	weak
<i>Teesdalia nudicaulis</i>	Shepherd's Cress	strong
<i>Teucrium scorodonia</i>	Wood Sage	strong
<i>Trifolium arvense</i>	Hare's-foot Clover	weak
<i>Trifolium glomeratum</i>	Clustered Clover	strong
<i>Trifolium scabrum</i>	Rough Clover	strong
<i>Trifolium striatum</i>	Soft Clover	strong

<b>Scientific name</b>	<b>Common name</b>	<b>Indicator value</b>
<i>Trifolium subterraneum</i>	Subterranean Clover	strong
<i>Turritis glabra</i>	Tower Mustard	strong
<i>Veronica arvensis</i>	Wall Speedwell	weak
<i>Veronica officinalis</i>	Heath Speedwell	strong
<i>Veronica spicata</i> ssp. <i>spicata</i>	Spiked Speedwell	strong
<i>Vicia lathyroides</i>	Spring Vetch	strong
<i>Viola canina</i>	Heath Dog-violet	strong
<i>Vulpia ciliata</i> ssp. <i>ambigua</i>	Bearded Fescue	strong

## APPENDIX 3

### VASCULAR PLANT LIST FOR SUBMERGED, FLOATING, EMERGENT AND WETBANK SPECIES FOUND IN AND AROUND WATER BODIES

This list has been created specifically for County Wildlife Sites in Cambridgeshire using known distribution of the species within the county. Species must only be included in the count if they are of natural occurrence at the site and not otherwise introduced; particular caution should be given to those marked \*.

List updated to Stace IV nomenclature, October 2019.

Scientific name	Common name	Typical habit
<i>Achillea ptarmica</i>	Sneezewort	Wetbank
<i>Acorus calamus</i>	Sweet Flag	Emergent
<i>Alisma gramineum</i>	Ribbon-leaved Water-plantain	Emergent
<i>Alisma lanceolatum</i>	Narrow-leaved Water-plantain	Emergent
<i>Alisma plantago-aquatica</i>	Water-plantain	Emergent
<i>Alopecurus aequalis</i>	Orange Foxtail	Wetbank
<i>Alopecurus geniculatus</i>	Marsh Foxtail	Wetbank
<i>Althaea officinalis</i> *	Marsh-mallow*	Wetbank
<i>Anagallis tenella</i>	Bog Pimpernel	Wetbank
<i>Apium graveolens</i>	Wild Celery	Wetbank
<i>Apium nodiflorum</i>	Fool's-water-cress	Emergent
<i>Baldellia ranunculoides</i>	Lesser Water-plantain	Emergent
<i>Berula erecta</i>	Lesser Water-parsnip	Emergent
<i>Bidens cernua</i>	Nodding Bur-marigold	Wetbank
<i>Bidens tripartita</i>	Trifid Bur-marigold	Wetbank
<i>Blysmus compressus</i>	Flat-sedge	Wetbank
<i>Bolboschoenus laticarpus</i> *	Inland Club-rush*	Emergent
<i>Bolboschoenus maritimus</i>	Sea Club-rush	Emergent
<i>Butomus umbellatus</i>	Flowering-rush	Emergent
<i>Callitriche agg.</i>	Water-starwort	Floating
<i>Caltha palustris</i>	Marsh-marigold	Wetbank
<i>Calystegia sepium subsp. roseata</i>	a hedge bindweed	Wetbank
<i>Cardamine amara</i>	Large Bitter-cress	Wetbank
<i>Cardamine pratensis</i>	Cuckooflower	Wetbank
<i>Carex acuta</i>	Slender Tufted-sedge	Emergent
<i>Carex acutiformis</i>	Lesser Pond-sedge	Emergent
<i>Carex appropinquata</i>	Fibrous Tussock-sedge	Wetbank
<i>Carex binervis</i>	Green-ribbed Sedge	Wetbank
<i>Carex demissa</i>	Common Yellow-sedge	Wetbank
<i>Carex distans</i>	Distant Sedge	Wetbank
<i>Carex disticha</i>	Brown Sedge	Wetbank
<i>Carex echinata</i>	Star Sedge	Wetbank
<i>Carex elata</i>	Tufted-sedge	Emergent
<i>Carex hostiana</i>	Tawny Sedge	Wetbank

Scientific name	Common name	Typical habit
<i>Carex lasiocarpa</i>	Slender Sedge	Emergent
<i>Carex lepidocarpa</i>	Long-stalked Yellow-sedge	Wetbank
<i>Carex otrubae</i>	False Fox-sedge	Wetbank
<i>Carex pallescens</i>	Pale Sedge	Wetbank
<i>Carex panicea</i>	Carnation Sedge	Wetbank
<i>Carex paniculata</i>	Greater Tussock-sedge	Emergent
<i>Carex pseudocyperus</i>	Cyperus Sedge	Emergent
<i>Carex pulicaris</i>	Flea Sedge	Wetbank
<i>Carex riparia</i>	Greater Pond-sedge	Emergent
<i>Carex rostrata</i>	Bottle Sedge	Emergent
<i>Carex strigosa</i>	Thin-spiked Wood-sedge	Wetbank
<i>Carex vesicaria</i>	Bladder-sedge	Emergent
<i>Carex viridula</i>	Small-fruited Yellow-sedge	Wetbank
<i>Catabrosa aquatica</i>	Whorl-grass	Emergent
<i>Ceratophyllum demersum</i>	Rigid Hornwort	Submerged
<i>Ceratophyllum submersum</i>	Soft Hornwort	Submerged
<i>Chara aculeolata</i>	Hedgehog Stonewort	Submerged
<i>Chara aspera</i>	Rough Stonewort	Submerged
<i>Chara canescens</i>	Bearded Stonewort	Submerged
<i>Chara contraria</i>	Opposite Stonewort	Submerged
<i>Chara curta</i>	Lesser Bearded Stonewort	Submerged
<i>Chara globularis</i>	Fragile Stonewort	Submerged
<i>Chara hispida</i>	Bristly Stonewort	Submerged
<i>Chara virgata</i>	Delicate Stonewort	Submerged
<i>Chara vulgaris</i>	Common Stonewort	Submerged
<i>Cladium mariscus</i>	Great Fen-sedge	Emergent
<i>Comarum palustre</i>	Marsh Cinquefoil	Emergent
<i>Cuscuta europaea</i>	Greater Dodder	Wetbank
<i>Cyperus longus*</i>	Galingale*	Wetbank
<i>Deschampsia cespitosa</i>	Tufted Hair-grass	Wetbank
<i>Eleocharis acicularis</i>	Needle Spike-rush	Emergent
<i>Eleocharis palustris</i>	Common Spike-rush	Emergent
<i>Eleocharis quinqueflora</i>	Few-flowered Spike-rush	Emergent
<i>Eleocharis uniglumis</i>	Slender Spike-rush	Emergent
<i>Eleogiton fluitans</i>	Floating Club-rush	Emergent
<i>Elodea canadensis</i>	Canadian Waterweed	Submerged
<i>Epilobium palustre</i>	Marsh Willowherb	Wetbank
<i>Epipactis palustris</i>	Marsh Helleborine	Emergent
<i>Equisetum fluviatile</i>	Water Horsetail	Emergent
<i>Equisetum palustre</i>	Marsh Horsetail	Wetbank
<i>Equisetum telmateia</i>	Great Horsetail	Wetbank
<i>Eriophorum angustifolium</i>	Common Cottongrass	Wetbank
<i>Eupatorium cannabinum</i>	Hemp-agrimony	Wetbank
<i>Filipendula ulmaria</i>	Meadowsweet	Wetbank
<i>Galium palustre</i>	Marsh Bedstraw	Wetbank

Scientific name	Common name	Typical habit
<i>Galium uliginosum</i>	Fen Bedstraw	Wetbank
<i>Geum rivale</i>	Water Avens	Wetbank
<i>Glyceria declinata</i>	Small Sweet-grass	Emergent
<i>Glyceria fluitans</i>	Floating Sweet-grass	Emergent
<i>Glyceria maxima</i>	Reed Sweet-grass	Emergent
<i>Glyceria notata</i>	Plicate Sweet-grass	Emergent
<i>Glyceria x pedicellata</i>	<i>Glyceria fluitans</i> x <i>notata</i>	Emergent
<i>Groenlandia densa</i>	Opposite-leaved Pondweed	Submerged
<i>Gymnadenia densiflora</i>	Marsh Fragrant-orchid	Wetbank
<i>Helosciadium inundatum</i>	Lesser Marshwort	Emergent
<i>Hippuris vulgaris</i>	Mare's-tail	Submerged
<i>Hottonia palustris</i>	Water-violet	Submerged
<i>Hydrocharis morsus-ranae</i>	Frogbit	Floating
<i>Hydrocotyle vulgaris</i>	Marsh Pennywort	Wetbank
<i>Hypericum tetrapterum</i>	Square-stalked St John's-wort	Wetbank
<i>Impatiens capensis</i>	Orange Balsam	Wetbank
<i>Iris pseudacorus</i>	Yellow Iris	Emergent
<i>Isolepis setacea</i>	Bristle Club-rush	Wetbank
<i>Jacobaea aquatica</i>	Marsh Ragwort	Wetbank
<i>Jacobaea paludosa</i>	Fen Ragwort	Emergent
<i>Juncus acutiflorus</i>	Sharp-flowered Rush	Wetbank
<i>Juncus acutus</i>	Sharp Rush	Wetbank
<i>Juncus articulatus</i>	Jointed Rush	Wetbank
<i>Juncus bulbosus</i>	Bulbous Rush	Emergent
<i>Juncus compressus</i>	Round-fruited Rush	Wetbank
<i>Juncus conglomeratus</i>	Compact Rush	Wetbank
<i>Juncus effusus</i>	Soft-rush	Wetbank
<i>Juncus inflexus</i>	Hard Rush	Wetbank
<i>Juncus subnodulosus</i>	Blunt-flowered Rush	Wetbank
<i>Lathyrus palustris</i>	Marsh Pea	Wetbank
<i>Lemna gibba</i>	Fat Duckweed	Floating
<i>Lemna minor</i>	Common Duckweed	Floating
<i>Lemna trisulca</i>	Ivy-leaved Duckweed	Submerged
<i>Limosella aquatica</i>	Mudwort	Emergent
<i>Lotus pedunculatus</i>	Greater Bird's-foot-trefoil	Wetbank
<i>Lycopus europaeus</i>	Gypsywort	Wetbank
<i>Lysimachia nemorum</i>	Yellow Pimpernel	Wetbank
<i>Lysimachia nummularia</i>	Creeping-Jenny	Wetbank
<i>Lysimachia vulgaris</i>	Yellow Loosestrife	Wetbank
<i>Lythrum hyssopifolia</i>	Grass-poly	Wetbank
<i>Lythrum portula</i>	Water Purslane	Wetbank
<i>Lythrum salicaria</i>	Purple-loosestrife	Emergent
<i>Mentha aquatica</i>	Water Mint	Wetbank
<i>Mentha arvensis</i>	Corn Mint	Wetbank
<i>Mentha x verticillata</i>	Whorled Mint	Wetbank

Scientific name	Common name	Typical habit
<i>Menyanthes trifoliata</i>	Bogbean	Emergent
<i>Montia fontana</i>	Blinks	Wetbank
<i>Myosotis laxa</i>	Tufted Forget-me-not	Wetbank
<i>Myosotis scorpioides</i>	Water Forget-me-not	Emergent
<i>Myriophyllum alterniflorum</i>	Alternate Water-milfoil	Submerged
<i>Myriophyllum spicatum</i>	Spiked Water-milfoil	Submerged
<i>Myriophyllum verticillatum</i>	Whorled Water-milfoil	Submerged
<i>Nasturtium microphyllum</i>	Narrow-fruited Water-cress	Emergent
<i>Nasturtium officinale</i>	Water-cress	Emergent
<i>Nasturtium officinale x microphyllum</i>	Hybrid Water-cress	Emergent
<i>Nitella flexilis</i>	Smooth Stonewort	Submerged
<i>Nitella mucronata</i>	Pointed Stonewort	Submerged
<i>Nitella opaca</i>	Dark Stonewort	Submerged
<i>Nitella tenuissima</i>	Dwarf Stonewort	Submerged
<i>Nuphar lutea</i>	Yellow Water-lily	Floating
<i>Nymphaea alba</i>	White Water-lily	Floating
<i>Nymphoides peltata</i> *	Fringed Water-lily*	Floating
<i>Oenanthe aquatica</i>	Fine-leaved Water-dropwort	Emergent
<i>Oenanthe crocata</i>	Hemlock Water-dropwort	Emergent
<i>Oenanthe fistulosa</i>	Tubular Water-dropwort	Emergent
<i>Oenanthe fluviatilis</i>	River Water-dropwort	Emergent
<i>Oenanthe lachenalii</i>	Parsley Water-dropwort	Wetbank
<i>Oenanthe silaifolia</i>	Narrow-leaved Water-dropwort	Wetbank
<i>Parnassia palustris</i>	Grass-of-Parnassus	Wetbank
<i>Pedicularis palustris</i>	Marsh Lousewort	Wetbank
<i>Persicaria amphibia</i>	Amphibious Bistort	Floating
<i>Persicaria hydropiper</i>	Water-pepper	Wetbank
<i>Persicaria minor</i>	Small Water-pepper	Wetbank
<i>Persicaria mitis</i>	Tasteless Water-pepper	Wetbank
<i>Petasites hybridus</i>	Butterbur	Wetbank
<i>Phalaris arundinacea</i>	Reed Canary-grass	Emergent
<i>Phragmites australis</i>	Common Reed	Emergent
<i>Plantago major subsp. intermedia</i>	Greater Plantain	Wetbank
<i>Poa palustris</i>	Swamp Meadow-grass	Wetbank
<i>Potamogeton acutifolius</i>	Sharp-leaved Pondweed	Submerged
<i>Potamogeton alpinus</i>	Red Pondweed	Submerged
<i>Potamogeton berchtoldii</i>	Small Pondweed	Submerged
<i>Potamogeton coloratus</i>	Fen Pondweed	Submerged
<i>Potamogeton compressus</i>	Grass-wrack Pondweed	Submerged
<i>Potamogeton crispus</i>	Curled Pondweed	Submerged
<i>Potamogeton friesii</i>	Flat-stalked Pondweed	Submerged
<i>Potamogeton gramineus</i>	Various-leaved Pondweed	Submerged
<i>Potamogeton lucens</i>	Shining Pondweed	Submerged
<i>Potamogeton natans</i>	Broad-leaved Pondweed	Floating
<i>Potamogeton obtusifolius</i>	Blunt-leaved Pondweed	Submerged

Scientific name	Common name	Typical habit
<i>Potamogeton perfoliatus</i>	Perfoliate Pondweed	Submerged
<i>Potamogeton polygonifolius</i>	Bog Pondweed	Submerged
<i>Potamogeton praelongus</i>	Long-stalked Pondweed	Submerged
<i>Potamogeton pusillus</i>	Lesser Pondweed	Submerged
<i>Potamogeton trichoides</i>	Hairlike Pondweed	Submerged
<i>Pulicaria dysenterica</i>	Common Fleabane	Wetbank
<i>Ranunculus aquatilis</i>	Common Water-crowfoot	Floating
<i>Ranunculus baudotii</i>	Brackish Water-crowfoot	Submerged
<i>Ranunculus circinatus</i>	Fan-leaved Water-crowfoot	Submerged
<i>Ranunculus flammula</i>	Lesser Spearwort	Wetbank
<i>Ranunculus fluitans</i>	River Water-crowfoot	Submerged
<i>Ranunculus hederaceus</i>	Ivy-leaved Crowfoot	Wetbank
<i>Ranunculus lingua</i>	Greater Spearwort	Emergent
<i>Ranunculus peltatus</i>	Pond Water-crowfoot	Floating
<i>Ranunculus penicillatus</i>	Stream Water-crowfoot	Submerged
<i>Ranunculus sceleratus</i>	Celery-leaved Buttercup	Emergent
<i>Ranunculus trichophyllus</i>	Thread-leaved Water-crowfoot	Submerged
<i>Rorippa amphibia</i>	Great Yellow-cress	Emergent
<i>Rorippa palustris</i>	Marsh Yellow-cress	Wetbank
<i>Rorippa sylvestris</i>	Creeping Yellow-cress	Wetbank
<i>Rumex hydrolapathum</i>	Water Dock	Emergent
<i>Rumex maritimus</i>	Golden Dock	Emergent
<i>Rumex palustris</i>	Marsh Dock	Wetbank
<i>Sagittaria sagittifolia</i>	Arrowhead	Emergent
<i>Samolus valerandi</i>	Brookweed	Wetbank
<i>Schoenoplectus lacustris</i>	Common Club-rush	Emergent
<i>Schoenoplectus tabernaemontani</i>	Grey Club-rush	Emergent
<i>Scrophularia auriculata</i>	Water Figwort	Wetbank
<i>Scutellaria galericulata</i>	Skullcap	Wetbank
<i>Selinum carvifolia</i>	Cambridge Milk-parsley	Wetbank
<i>Serratula tinctoria</i>	Saw-wort	Wetbank
<i>Silene flos-cuculi</i>	Ragged-Robin	Wetbank
<i>Sium latifolium</i>	Greater Water-parsnip	Emergent
<i>Solanum dulcamara</i>	Bittersweet	Wetbank
<i>Sonchus palustris</i>	Marsh Sow-thistle	Wetbank
<i>Sparganium emersum</i>	Unbranched Bur-reed	Floating
<i>Sparganium erectum</i>	Branched Bur-reed	Emergent
<i>Sparganium natans</i>	Least Bur-reed	Floating
<i>Spirodela polyrhiza</i>	Greater Duckweed	Floating
<i>Stachys palustris</i>	Marsh Woundwort	Wetbank
<i>Stellaria alsine</i>	Bog Stitchwort	Wetbank
<i>Stellaria aquatica</i>	Water Chickweed	Wetbank
<i>Stellaria palustris</i>	Marsh Stitchwort	Wetbank
<i>Stratiotes aloides</i>	Water-soldier	Submerged
<i>Stuckenia pectinata</i>	Fennel Pondweed	Submerged

Scientific name	Common name	Typical habit
<i>Symphytum officinale</i>	Common Comfrey	Wetbank
<i>Tanacetum vulgare</i>	Tansy	Wetbank
<i>Teucrium scordium</i>	Water Germander	Emergent
<i>Thalictrum flavum</i>	Common Meadow-rue	Wetbank
<i>Thelypteris palustris</i>	Marsh Fern	Wetbank
<i>Tolypella glomerata</i>	Clustered Stonewort	Submerged
<i>Tolypella intricata</i>	Tassel Stonewort	Submerged
<i>Tolypella prolifera</i>	Great Tassel Stonewort	Submerged
<i>Triglochin palustris</i>	Marsh Arrowgrass	Wetbank
<i>Typha angustifolia</i>	Lesser Bulrush	Emergent
<i>Typha latifolia</i>	Bulrush	Emergent
<i>Utricularia australis</i>	Bladderwort	Floating
<i>Utricularia intermedia agg.</i>	Intermediate bladderwort	Floating
<i>Utricularia minor</i>	Lesser bladderwort	Floating
<i>Utricularia vulgaris</i>	Greater Bladderwort	Floating
<i>Valeriana dioica</i>	Marsh Valerian	Wetbank
<i>Valeriana officinalis</i>	Common Valerian	Wetbank
<i>Veronica anagallis-aquatica</i>	Blue Water-speedwell	Emergent
<i>Veronica beccabunga</i>	Brooklime	Emergent
<i>Veronica catenata</i>	Pink Water-speedwell	Emergent
<i>Veronica scutellata</i>	Marsh Speedwell	Wetbank
<i>Viola palustris</i>	Marsh Violet	Wetbank
<i>Viola stagnina</i>	Fen Violet	Wetbank
<i>Zannichellia palustris</i>	Horned Pondweed	Submerged



## APPENDIX 4A

### NATIONALLY RARE, NATIONALLY SCARCE & RED DATA LIST VASCULAR PLANTS FOUND IN CAMBRIDGESHIRE & PETERBOROUGH

Species have been included in this appendix if they are:

- Nationally Rare (NR) or Nationally Scarce (NS)
- have previously been recorded as natural and established populations in Cambridgeshire or Peterborough and are not considered to be Regionally Extinct (data provided by BSBI vice-county recorders)

The BSBI provides the most up-to-date lists of Nationally Rare or Scarce taxa and GB Red List for Vascular Plants: <https://bsbi.org/taxon-lists>. The revisions used in this appendix were published in 2024.

Significant populations of Nationally Rare or Nationally Scarce species found within Cambridgeshire and Peterborough but not included in this appendix may be considered for site selection if naturally occurring and established.

Nationally Rare is defined as a plant occurring in 15 or fewer 10km squares in Britain. Nationally Scarce is defined as a plant occurring in 100-16 10km squares in Britain.

List updated in February 2025 following the 2024 revision of Nationally Rare and Nationally Scarce vascular plant taxa. List updated to Stace IV nomenclature, October 2019.

Scientific Name	Common Name	NR/NS	Red List	
			GB	England
<i>Adonis annua</i>	Pheasant's-eye	Scarce	EN	EN
<i>Ajuga chamaepitys</i>	Ground-pine	Scarce	EN	EN
<i>Alisma gramineum</i>	Ribbon-leaved Water-plantain	Rare	CR	CR
<i>Artemisia campestris</i>	Field Wormwood	Rare	EN	EN
<i>Bolboschoenus laticarpus</i>	Inland Club-rush	Scarce		
<i>Brassica oleracea</i>	Cabbages	Scarce		
<i>Bunium bulbocastanum</i>	Great Pignut	Rare		
<i>Bupleurum tenuissimum</i>	Slender Hare's-ear	Scarce	VU	VU
<i>Carex appropinquata</i>	Fibrous Tussock-sedge	Scarce	NT	
<i>Carex ericetorum</i>	Rare Spring-sedge	Scarce	VU	VU
<i>Cerastium pumilum</i>	Dwarf Mouse-ear	Scarce	NT	
<i>Cicuta virosa</i>	Cowbane	Scarce		
<i>Cirsium tuberosum</i>	Tuberous Thistle	Scarce	NT	NT
<i>Clinopodium nepeta</i>	Lesser Calamint	Scarce		
<i>Cuscuta europaea</i>	Greater Dodder	Scarce		
<i>Dactylorhiza incarnata</i> subsp. <i>ochroleuca</i>	Early Marsh-orchid subsp.	Rare	CR	CR
<i>Dactylorhiza praetermissa</i> subsp. <i>schoenophila</i>	Narrow-leaved Marsh-orchid	Scarce		
<i>Daphne mezereum</i>	Mezereon	Scarce	VU	VU
<i>Dianthus armeria</i>	Deptford Pink	Scarce	EN	EN
<i>Dianthus deltoides</i>	Maiden Pink	Scarce	NT	VU
<i>Erophila majuscula</i>	Hairy Whitlowgrass	Scarce		
<i>Ervum gracile</i>	Slender Tare	Scarce	VU	VU
<i>Eryngium campestre</i>	Field Eryngo	Rare	NT	NT
<i>Euphrasia pseudokernerii</i>	Chalk Eyebright	Scarce	VU	VU
<i>Filago lutescens</i>	Red-tipped Cudweed	Scarce	EN	EN

Scientific Name	Common Name	NR/NS	Red List	
			GB	England
<i>Filago pyramidata</i>	Broad-leaved Cudweed	Scarce	EN	EN
<i>Fumaria parviflora</i>	Fine-leaved Fumitory	Scarce	VU	NT
<i>Fumaria vaillantii</i>	Few-flowered Fumitory	Scarce	EN	EN
<i>Galeopsis angustifolia</i>	Red Hemp-nettle	Scarce	CR	CR
<i>Galium tricornutum</i>	Corn Cleavers	Rare	CR	CR
<i>Gentianella amarella</i> subsp. <i>anglica</i>	Autumn Gentian	Scarce	VU	
<i>Herminium monorchis</i>	Musk Orchid	Scarce	VU	EN
<i>Herniaria glabra</i>	Smooth Rupturewort	Rare		
<i>Himantoglossum hircinum</i>	Lizard Orchid	Scarce		
<i>Hordelymus europaeus</i>	Wood Barley	Scarce		
<i>Hordeum marinum</i>	Sea Barley	Scarce	VU	VU
<i>Hypochaeris maculata</i>	Spotted Cat's-ear	Rare	VU	VU
<i>Iberis amara</i>	Wild Candytuft	Scarce	VU	VU
<i>Isatis tinctoria</i>	Woad	Scarce		
<i>Jacobaea paludosa</i>	Fen Ragwort	Rare	CR	CR
<i>Lathyrus aphaca</i>	Yellow Vetchling	Scarce	VU	VU
<i>Lathyrus palustris</i>	Marsh Pea	Scarce	NT	NT
<i>Lepidium latifolium</i>	Dittander	Scarce		
<i>Linum perenne</i>	Perennial Flax	Rare	VU	
<i>Luzula pallescens</i>	Fen Wood-rush	Rare	CR	CR
<i>Lysimachia foemina</i>	Blue Pimpernel	Scarce		DD
<i>Lythrum hyssopifolia</i>	Grass-poly	Scarce	EN	EN
<i>Medicago minima</i>	Bur Medick	Scarce	VU	VU
<i>Medicago polymorpha</i>	Toothed Medick	Scarce		
<i>Medicago sativa</i> subsp. <i>falcata</i>	Sickle Medick	Scarce		
<i>Melampyrum cristatum</i>	Crested Cow-wheat	Scarce	EN	EN
<i>Mentha pulegium</i>	Pennyroyal	Scarce	EN	CR
<i>Mentha suaveolens</i>	Round-leaved Mint	Scarce	DD	NT
<i>Neotinea ustulata</i>	Burnt Orchid	Scarce	EN	EN
<i>Nymphoides peltata</i>	Fringed Water-lily	Scarce		
<i>Oenanthe fluviatilis</i>	River Water-dropwort	Scarce		
<i>Oenanthe silaifolia</i>	Narrow-leaved Water-dropwort	Scarce		
<i>Orchis anthropophora</i>	Man Orchid	Scarce	EN	EN
<i>Orchis simia</i>	Monkey Orchid	Rare	VU	VU
<i>Ornithogalum pyrenaicum</i>	Spiked Star-of-Bethlehem	Scarce		
<i>Oxybasis glauca</i>	Oak-leaved Goosefoot	Scarce	VU	VU
<i>Oxybasis urtica</i>	Upright Goosefoot	Scarce	CR	CR
<i>Parapholis strigosa</i>	Hard-grass	Scarce		
<i>Persicaria mitis</i>	Tasteless Water-pepper	Scarce	VU	VU
<i>Phleum phleoides</i>	Purple-stem Cat's-tail	Rare		
<i>Potamogeton coloratus</i>	Fen Pondweed	Scarce		
<i>Potamogeton compressus</i>	Grass-wrack Pondweed	Scarce	EN	EN
<i>Potentilla verna</i>	Spring Cinquefoil	Scarce		
<i>Primula elatior</i>	Oxlip	Scarce		
<i>Pulsatilla vulgaris</i>	Pasqueflower	Scarce	VU	VU
<i>Rosa agrestis</i>	Small-leaved Sweet-briar	Scarce	NT	NT
<i>Rosa tomentella</i>	Round-leaved Dog-rose	Scarce		
<i>Sabulina tenuifolia</i>	Fine-leaved Sandwort	Scarce	EN	EN
<i>Salicornia dolichostachya</i>	Long-spiked Glasswort	Scarce		
<i>Salvia pratensis</i>	Meadow Clary	Scarce	NT	NT
<i>Selinum carvifolia</i>	Cambridge Milk-parsley	Rare	EN	EN
<i>Seseli libanotis</i>	Moon Carrot	Rare	NT	NT

Scientific Name	Common Name	NR/NS	Red List	
			GB	England
<i>Silene conica</i>	Sand Catchfly	Scarce	VU	EN
<i>Silene otites</i>	Spanish Catchfly	Rare	EN	EN
<i>Sium latifolium</i>	Greater Water-parsnip	Scarce	EN	EN
<i>Sonchus palustris</i>	Marsh Sow-thistle	Scarce		
<i>Stratiotes aloides</i>	Water-soldier	Scarce		
<i>Tephrosieris integrifolia</i> subsp. <i>integrifolia</i>	Field Fleawort	Scarce	VU	VU
<i>Teucrium scordium</i>	Water Germander	Rare	EN	EN
<i>Thelypteris palustris</i>	Marsh Fern	Scarce		
<i>Thesium humifusum</i>	Bastard-toadflax	Scarce		
<i>Thymus serpyllum</i>	Breckland Thyme	Rare		
<i>Thysselinum palustre</i>	Milk-parsley	Scarce	VU	VU
<i>Tilia platyphyllos</i>	Large-leaved Lime	Scarce		
<i>Torilis arvensis</i>	Spreading Hedge-parsley	Scarce		EN
<i>Trifolium ochroleucon</i>	Sulphur Clover	Scarce	VU	VU
<i>Turritis glabra</i>	Tower Mustard	Scarce	EN	EN
<i>Utricularia australis</i>	Bladderwort	Scarce		
<i>Utricularia vulgaris</i>	Greater Bladderwort	Scarce		
<i>Valerianella rimosa</i>	Broad-fruited Cornsalad	Scarce	EN	EN
<i>Verbascum lychnitis</i>	White Mullein	Scarce		
<i>Verbascum pulverulentum</i>	Hoary Mullein	Scarce		
<i>Veronica spicata</i> subsp. <i>spicata</i>	Breckland Spiked Speedwell	Rare		
<i>Veronica triphyllos</i>	Fingered Speedwell	Rare	CR	CR
<i>Viola canina</i> subsp. <i>ruppii</i>	Heath Dog-violet	Rare	EN	EN
<i>Viola stagnina</i>	Fen Violet	Rare	CR	CR
<i>Vulpia ciliata</i>	Bearded Fescue	Scarce		
<i>Vulpia ciliata</i> subsp. <i>ambigua</i>	Purple Fescue	Scarce		

*Red Data List status key:*

- EX – Extinct
- EW – Extinct in the wild
- CR – Critically endangered
- EN – Endangered
- VU – Vulnerable
- NT – Near threatened
- DD – Data deficient
- NE – Not evaluated

Where the field is left blank the species is considered to be of Least Concern (LC).

## APPENDIX 4B

### SCORING SYSTEM FOR THE SELECTION OF SITES WITH OUTSTANDING ASSEMBLAGES OF ARABLE PLANTS

This system was developed by Plantlife and is a scoring system that tallies the weighted individual score of each species present based on its rarity and decline across Britain. Weightings for England are used here and the threshold scores for different geological substrates are as follows:

Substrate	County importance	National importance	International importance
Sandy and other free draining non-calcareous soils	20 - 34	35 - 69	70 +
Heavier clay soils	20 - 29	30 - 69	70 +
Dry calcareous soils on chalk and limestone	30 - 44	45 - 89	90 +

Due to the sporadic nature of arable plants any records from the last 10 years can be used in the calculation of the score and where survey effort is limited records from back to 1985 may be included.

A much higher score may identify a site as of National or European importance and the thresholds for these are given as per the Plantlife document *Important Arable Plant Areas* (Byfield and Wilson, 2005).

List created from Plantlife's IAPA List and Scores, February 2023.

Scientific name	Common name	England Score
<i>Adonis annua</i>	Pheasant's-eye	8
<i>Agrostemma githago</i>	Corncockle	9
<i>Ajuga chamaepitys</i>	Ground Pine	8
<i>Althaea hirsuta</i>	Hairy Mallow or Rough Marsh-mallow	6
<i>Anthemis arvensis</i>	Corn Chamomile	8
<i>Anthemis cotula</i>	Stinking Chamomile	7
<i>Anthriscus caucalis</i>	Bur Chervil	3
<i>Apera interrupta</i>	Dense Silky-bent	4
<i>Apera spica-venti</i>	Loose Silky-bent	6
<i>Aphanes australis</i>	Slender Parsley-piert	1
<i>Arnoseris minima</i>	Lamb's-succory	9
<i>Avena strigosa</i>	Bristle Oat	5
<i>Brassica nigra</i>	Black Mustard	2
<i>Briza minor</i>	Lesser Quaking-grass	5
<i>Bromus interruptus</i>	Interrupted Brome	6
<i>Bromus secalinus</i>	Rye Brome	7
<i>Buglossoides arvensis</i>	Corn Gromwell	8
<i>Bunium bulbocastanum</i>	Greater Pignut	6
<i>Bupleurum rotundifolium</i>	Thorow-wax	9
<i>Camelina sativa</i>	False Flax	5
<i>Caucalis platycarpos</i>	Small Bur-parsley	9
<i>Centaurea cyanus</i>	Cornflower	8
<i>Chaenorhinum minus</i>	Small Toadflax	1
<i>Chenopodium hybridum</i>	Maple-leaved Goosefoot	3
<i>Chenopodium murale</i>	Nettle-leaved Goosefoot	8
<i>Chenopodium ficifolium</i>	Fig-leaved Goosefoot	2
<i>Descurainia sophia</i>	Tansy Mustard or Flixweed	3
<i>Echium plantagineum</i>	Purple Bugloss	6
<i>Erodium cicutarium</i>	Common Stork's-bill	1

<i>Erodium moschatum</i>	Musk Stork's-bill	4
<i>Ervum gracile</i>	Slender Tare	7
<i>Ervum tetraspermum</i>	Smooth Tare	2
<i>Erysimum cheiranthoides</i>	Treacle Mustard	6
<i>Euphorbia exigua</i>	Dwarf Spurge	7
<i>Euphorbia platyphyllos</i>	Broad-leaved Spurge	3
<i>Filago germanica</i>	Common Cudweed	6
<i>Filago lutescens</i>	Red-tipped Cudweed	8
<i>Filago pyramidata</i>	Broad-leaved Cudweed	8
<i>Fumaria bastardii</i>	Tall Ramping-fumitory	2
<i>Fumaria capreolata</i>	White Ramping-fumitory	3
<i>Fumaria densiflora</i>	Dense-flowered Fumitory	3
<i>Fumaria muralis ssp. neglecta</i>	Common Ramping-fumitory	7
<i>Fumaria occidentalis</i>	Western Fumitory	5
<i>Fumaria parviflora</i>	Fine-leaved Fumitory	7
<i>Fumaria purpurea</i>	Purple Ramping-fumitory	7
<i>Fumaria reuteri</i>	Martin's Ramping-fumitory	6
<i>Fumaria vaillantii</i>	Few-flowered Fumitory	8
<i>Galeopsis angustifolia</i>	Red Hemp-nettle	9
<i>Galeopsis bifida</i>	Bifed hemp-nettle	1
<i>Galeopsis segetum</i>	Downy Hemp-nettle	9
<i>Galeopsis speciosa</i>	Large-flowered Hemp-nettle	7
<i>Galium spurium</i>	False Cleavers	6
<i>Galium tricornutum</i>	Corn Cleavers	9
<i>Gastridium ventricosum</i>	Nit-grass	5
<i>Geranium columbinum</i>	Long-stalked Crane's-bill	2
<i>Geranium pusillum</i>	Small-flowered Crane's-bill	2
<i>Glebionis segetum</i>	Corn Marigold	7
<i>Holosteum umbellatum</i>	Jagged Chickweed	6
<i>Hyoscyamus niger</i>	Henbane	7
<i>Hypochaeris glabra</i>	Smooth Cat's-ear	7
<i>Iberis amara</i>	Wild Candytuft	7
<i>Kickxia elatine</i>	Sharp-leaved Fluellen	2
<i>Kickxia spuria</i>	Round-leaved Fluellen	3
<i>Lamium amplexicaule</i>	Henbit Dead-nettle	1
<i>Lamium confertum</i>	Northern Dead-nettle	8
<i>Lamium hybridum</i>	Cut-leaved Dead-nettle	1
<i>Lathyrus aphaca</i>	Yellow Vetchling	7
<i>Lavatera cretica</i>	Small Tree-mallow	6
<i>Legousia hybrida</i>	Venus's-looking-glass	3
<i>Legousia speculum-veneris</i>	Greater Venus's-looking-glass	6
<i>Lepidium campestre</i>	Field Pepperwort	6
<i>Lipandra polysperma</i>	Many-seeded Goosefoot	2
<i>Logfia gallica</i>	Narrow-leaved Cudweed	9
<i>Lolium temulentum</i>	Darnel	9
<i>Lycopsis arvensis</i>	Small Bugloss	1
<i>Lysimachia foemina</i>	Blue Pimpernel	5
<i>Lythrum hyssopifolium</i>	Grass-poly	8
<i>Malva neglecta</i>	Common Mallow	2
<i>Melampyrum arvense</i>	Field Cow-wheat	8
<i>Melilotus altissimus</i>	Tall Melilot	1
<i>Mentha arvensis</i>	Corn Mint	6
<i>Mercurialis annua</i>	Annual Mercury	2
<i>Microthlaspi perfoliatum</i>	Perfoliate Penny-cress	7
<i>Misopates orontium</i>	Weasel's-snout	7
<i>Myosurus minimus</i>	Mousetail	7
<i>Nepeta cataria</i>	Cat-mint	7
<i>Orobanche minor</i>	Common Broomrape	2
<i>Oxybasis urbica</i>	Upright Goosefoot	9
<i>Papaver argemone</i>	Prickly Poppy	8
<i>Papaver dubium</i>	Long-headed Poppy	1
<i>Papaver lecoqii</i>	Babington's Poppy	2

<i>Papaver rhoeas</i>	Common Poppy	1
<i>Polycarpon tetraphyllum</i>	Four-leaved Allseed	5
<i>Polygonum boreale</i>	Northern Knotgrass	4
<i>Polygonum rurivagum</i>	Cornfield Knotgrass	3
<i>Ranunculus arvensis</i>	Corn Buttercup	9
<i>Ranunculus muricatus</i>	Rough-fruited Buttercup	6
<i>Ranunculus parviflorus</i>	Small-flowered buttercup	3
<i>Ranunculus sardous</i>	Hairy Buttercup	3
<i>Raphanus raphanistrum</i> subsp. <i>Raphanistrum</i>	Wild Radish	1
<i>Reseda lutea</i>	Wild Mignonette	1
<i>Roemeria hispida</i>	Rough Poppy	3
<i>Rhinanthus angustifolius</i>	Greater Hay-rattle	6
<i>Scandix pecten-veneris</i>	Shepherd's Needle	9
<i>Scleranthus annuus</i>	Annual Knawel	8
<i>Sherardia arvensis</i>	Field Madder	1
<i>Silene gallica</i>	Small-flowered Catchfly	8
<i>Silene noctiflora</i>	Night-flowering Catchfly	7
<i>Sinapis alba</i>	White Mustard	2
<i>Sison segetum</i>	Corn Parsley	3
<i>Spergula arvensis</i>	Corn Spurrey	7
<i>Stachys arvensis</i>	Field Woundwort	6
<i>Teucrium botrys</i>	Cut-leaved Germander	6
<i>Thlaspi arvense</i>	Field Penny-cress	1
<i>Torilis arvensis</i>	Spreading Hedge-parsley	8
<i>Torilis nodosa</i>	Knotted Hedge-parsley	3
<i>Valerianella dentata</i>	Narrow-fruited Cornsalad	8
<i>Valerianella eriocarpa</i>	Hairy-fruited Cornsalad	6
<i>Valerianella rimosa</i>	Broad-fruited Cornsalad	8
<i>Veronica agrestis</i>	Green Field-speedwell	1
<i>Veronica polita</i>	Grey Field-speedwell	2
<i>Veronica praecox</i>	Breckland Speedwell	6
<i>Veronica triphyllos</i>	Fingered Speedwell	9
<i>Veronica verna</i>	Spring Speedwell	8
<i>Viola tricolor</i> ssp. <i>tricolor</i>	Wild Pansy	6

## APPENDIX 5A

### ESTIMATED NATIONAL NUMBERS OF BIRDS BREEDING AND WINTERING IN BRITAIN - SPECIES RELEVANT TO CAMBRIDGESHIRE

	Breeding pairs	Wintering individuals
Little Grebe	9-14K	8K+
Great Crested Grebe	3-3.4K	5-15K
Red-necked Grebe	0-1k	100-170
Slavonian Grebe	70-80	400
Black-necked Grebe	<20	100
Cormorant	6.2K	15-20K
Bittern	47-51	50-150
Grey Heron	3.5-8.5K	25K
Mute Swan	3.1K	18K
Bewicks Swan	-	5K
Whooper Swan	0-1	4.5K
Greylag Goose	600-1000	100K
Canada Goose	10K	40K
Shelduck	15K	75K
Wigeon	300-500	200K
Gadwall	260	4K
Teal	3.5-6K	100K
Mallard	40K	500K
Pintail	16-41	25K
Garganey	<55	-
Shoveler	500	9K
Pochard	200	50K
Tufted Duck	1.5-2K	60K
Goldeneye	>40	15K
Red-breasted Merganser	1-2K	10K
Marsh Harrier	20-23	?
Hen Harrier	400	750
Montagu's Harrier	1-3	-
Sparrowhawk	15-20K	75-130K
Kestrel	30-40K	75K
Hobby	1K	-
Grey Partridge	100-200K	?
Water Rail	1.5-3K	?
Moorhen	200K	1M
Coot	40-80K	150K
Oystercatcher	33-43K	280K
Stone Curlew	150	-
Little Ringed Plover	475	-
Ringed Plover	8600	23K
Golden Plover	23K	200K
Lapwing	180K	1M

## APPENDIX 5B

### BREEDING BIRD INDICES

This list covers only those species which have bred or are likely to breed in Cambridgeshire; other species can be used from the relevant list if they occur.

Calculate the total score by adding up the Index score if indicated by an asterisk for that species in the habitat. Thresholds for each habitat are given at the end of the table.

- A - Lowland Damp Grassland
- B - Lowland Fen Without Water
- C - Lowland Open Water and Margins
- D - Scrub
- E – Woodland

Species	Index score	A	B	C	D	E
Little Grebe	2.5		*	*		
Great Crested Grebe	3			*		
Bittern	5		*	*		
Grey Heron	3			*	*	
Mute Swan	3	*		*		
Shelduck	2	*		*		
Gadwall	4	*	*	*		
Teal	3	*	*	*		
Garganey	5	*	*	*		
Shoveler	4	*	*	*		
Pochard	4		*	*		
Tufted Duck	3			*		
Marsh Harrier	5	*	*	*		
Montagu's Harrier	6		*	*		
Sparrowhawk	2					*
Hobby	4					*
Quail	5	*				
Water Rail	3		*	*		
Woodcock	2					*
Lapwing	1	*				
Avocet	4			*		
Ruff	5	*				
Little Ringed Plover	4			*		
Ringed Plover	3			*		
Snipe	2	*	*	*		
Black-tailed Godwit	5	*				
Curlew	2	*				
Redshank	2	*		*		
Common Tern	3			*		
Turtle Dove	1.5				*	
Stock Dove	1					*
Cuckoo	2	*	*	*	*	*
Tawny Owl	2					*
Long-eared Owl	3				*	*



<b>Species</b>	<b>Index score</b>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>
Short-eared Owl	3	*				
Nightjar	3				*	*
Green Woodpecker	2					*
Greater Spotted Woodpecker	2					*
Lesser Spotted Woodpecker	3					*
Kingfisher	3			*		
Yellow Wagtail	1	*		*		
Grey Wagtail	2			*		
Tree Pipit	1.5				*	*
Nightingale	3				*	*
Redstart	1					*
Whinchat	2	*	*		*	
Stonechat	2				*	
Cetti's Warbler	4		*	*		
Grasshopper Warbler	2	*	*	*	*	
Whitethroat	2				*	
Lesser Whitethroat	2				*	
Garden Warbler	1					*
Blackcap	1				*	*
Wood Warbler	2					*
Chiffchaff	1					*
Goldcrest	1					*
Savi's Warbler	5		*	*		
Sedge Warbler	1	*	*	*		
Reed Warbler	2		*	*		
Marsh Warbler	5		*	*		
Spotted Flycatcher	1					*
Pied Flycatcher	2					*
Long-tailed Tit	1					*
Marsh Tit	1					*
Willow Tit	2					*
Coal Tit	1					*
Red-backed Shrike	5				*	
Bearded Tit	4		*	*		
Nuthatch	2					*
Tree Creeper	1					*
Reed Bunting	1	*		*		
Linnet	1				*	
Golden Oriole	5					*
Jay	1					*
Siskin	2					*
Redpoll	1					*
<b><i>Index threshold required</i></b>		<b>11</b>	<b>13</b>	<b>24</b>	<b>10</b>	<b>26</b>

## **APPENDIX 5C**

### **RARE BREEDING BIRDS IN CAMBRIDGESHIRE**

Garganey  
Pochard  
Marsh Harrier  
Hobby  
Quail  
Stone Curlew  
Black-tailed Godwit  
Long-eared Owl  
Short-eared Owl  
Tree Pipit  
Grey Wagtail  
Black Redstart  
Redstart  
Wheatear  
Cetti's Warbler  
Wood Warbler  
Pied Flycatcher  
Bearded Tit  
Nuthatch  
Golden Oriole  
Hawfinch

## APPENDIX 6

### SCORING SYSTEM FOR THE SELECTION OF SITES WITH ASSEMBLAGES OF AMPHIBIANS

		<i>Low Population</i>	<i>Good Population</i>	<i>Exceptional Population</i>
		Score 1	Score 2	Score 3
<b>Great Crested Newt</b>	Seen or netted during the day	<5	5-50	>50
	Counted or bottle trapped at night	<10	10-100	>100
<b>Smooth Newt</b>	Netted in day	<10	10-100	>100
	Counted at night			
<b>Palmate Newt</b>	Netted in day	<10	10-100	>100
	Counted at night			
<b>Common Toad</b>	Estimated	<500	500-5000	>5000
	Counted	<100	100-1000	>1000
<b>Common Frog</b>	Spawn clumps counted	<50	50-100	>500

Scores must be for breeding sites observed during the breeding season. Daytime netting should be made during a 15-minute period for sites with less than 50m of water's edge, for 30 minutes for sites with 50-100m and so on. To compute the total score for a site, add the scores for individual species and add one point for four species present and two points for five species.

## APPENDIX 7A

### REGIONAL RED LIST ASSESSMENT FOR BUTTERFLIES

Based on Fox, R., Dennis, E.B., Brown, A.F. and Curson, J. (2022). *A revised Red List of British Butterflies*. *Insect Conservation and Diversity* 15(5): 485-495.

[Previous Red Listing from Fox, R., Warren, M.S., and Brereton, T.M. (2010). *A New Red List of British Butterflies*, *Species Status* 12; 1-32. Joint Nature Conservation Committee, Peterborough.]

List edited to show species present in Cambridgeshire which are listed on the current UK Red List.

*List updated October 2023. Silver-spotted Skipper, Swallowtail, Wood White, Duke of Burgundy and Brown Hairstreak have been removed as they are not currently present in the county. Dingy Skipper and Purple Emporer have been removed as they are now regarded as Least Concern.*

Species	2022 UK Red Listing	2010 UK Red Listing
Wall	Endangered	Near Threatened
Black Hairstreak	Endangered	Endangered
Grizzled Skipper	Vulnerable	Vulnerable
Small Heath	Vulnerable	Near Threatened
White Admiral	Vulnerable	Vulnerable
White-letter Hairstreak*	Vulnerable	Endangered
Chalkhill Blue	Vulnerable	Near Threatened
Dark Green Fritillary	Near Threatened	Least Concern
Small Blue	Near Threatened	Near Threatened

\*White-letter Hairstreak is relatively widespread in Cambridgeshire (2023), sites should only be selected for this species if they are locally notable.

## APPENDIX 7B

### THE ODONATA RED DATA LIST FOR GREAT BRITAIN

From Daguet, C.A., French, G.C. and Taylor, P. (2008). *The Odonata Red Data List for Great Britain*. Species Status 11; 1-34. Joint Nature Conservation Committee, Peterborough.

List edited to show only species present in Cambridgeshire and surrounding counties as of March 2014.

List produced March 2014.

#### **Endangered**

*Aeshna isosceles* (Norfolk Hawker)

#### **Near Threatened**

*Lestes dryas* (Scarce Emerald Damselfly)

*Ischnura pumilio* (Scarce Blue-tailed Damselfly)

*Coenagrion pulchellum* (Variable Damselfly)

*Libellula fulva* (Scarce Chaser)

## APPENDIX 7C

### BEETLES INDICATIVE OF CONTINUITY OF SAPROXYLIC HABITATS, AND THE METHOD OF CALCULATION OF THE INDEX OF ECOLOGICAL CONTINUITY

From Alexander, K.N.A., *Revision of the Index of Ecological Continuity as used for saproxylic beetles*, English Nature Research Report No. 574, 2004, Peterborough.

For detail on the derivation of this method, see:

- Harding P. and Rose F., *Pasture Woodlands in Lowland Britain*, Institute of Terrestrial Ecology, 1986
- Alexander, K.N.A., 1988. The development of an index of ecological continuity for deadwood associated beetles. *In*: R.C. Welch. Insect indicators of ancient woodland. *Antenna*, **12**, pp. 69-70
- Harding, P.T. & Alexander, K.N.A., 1994. The use of saproxylic invertebrates in the selection and evaluation of areas of relic forest in pasture-woodlands. *British Journal of Entomology and Natural History*, **7** (Suppl. 1), pp. 21-26

For information on rarity, see the JNCC spreadsheet “Conservation Designations for UK Taxa”. Available from <http://jncc.defra.gov.uk/> (12/06/2013).

To calculate the Index of Ecological Continuity: score 3 for Grade 1 species, score 2 for Grade 2 and 1 for Grade 3 and then add the scores. All admissible records for a site must be post-1950.

Family	Species	Continuity grade	Other names in common usage
Histeridae	<i>Plegaderus dissectus</i>	2	
Histeridae	<i>Abraeus granulum</i>	1	
Histeridae	<i>Aeletes atomarius</i>	1	
Ptiliidae	<i>Ptenidium gressneri</i>	2	
Ptiliidae	<i>Ptenidium turgidum</i>	2	
Ptiliidae	<i>Micridium halidaii</i>	1	
Ptiliidae	<i>Ptinella limbata</i>	2	
Scydmaenidae	<i>Eutheia formicetorum</i>	1	
Scydmaenidae	<i>Eutheia linearis</i>	1	
Scydmaenidae	<i>Stenichnus bicolor</i>	3	
Scydmaenidae	<i>Stenichnus godarti</i>	2	
Scydmaenidae	<i>Microscydmus minimus</i>	1	
Scydmaenidae	<i>Microscydmus nanus</i>	2	
Scydmaenidae	<i>Euconnus pragensis</i>	1	
Scydmaenidae	<i>Scydmaenus rufus</i>	3	
Omalinae	<i>Phyllodrepa nigra</i>	1	
Staphylininae	<i>Xantholinus angularis</i>	2	
Staphylininae	<i>Velleius dilatatus</i>	1	
Staphylininae	<i>Quedius aetolicus</i>	3	
Staphylininae	<i>Quedius maurus</i>	3	
Staphylininae	<i>Quedius microps</i>	3	
Staphylininae	<i>Quedius scitus</i>	2	
Staphylininae	<i>Quedius truncicola</i>	3	<i>ventralis</i>
Staphylininae	<i>Quedius xanthopus</i>	3	
Aleocharinae	<i>Euryusa optabilis</i>	2	
Aleocharinae	<i>Euryusa sinuata</i>	2	

Family	Species	Continuity grade	Other names in common usage
Aleocharinae	<i>Tachyusida gracilis</i>	1	
Pselaphidae	<i>Bibloporus minutus</i>	2	
Pselaphidae	<i>Euplectus nanus</i>	1	
Pselaphidae	<i>Euplectus punctatus</i>	1	
Pselaphidae	<i>Plectophloeus nitidus</i>	1	
Pselaphidae	<i>Batrisodes adnexus</i>	1	<i>buqueti</i>
Pselaphidae	<i>Batrisodes delaporti</i>	1	
Pselaphidae	<i>Batrisodes venustus</i>	1	
Scirtidae	<i>Prionocyphon serricornis</i>	3	
Scarabaeidae	<i>Gnorimus nobilis</i>	1	
Scarabaeidae	<i>Gnorimus variabilis</i>	1	
Eucnemidae	<i>Melasis buprestoides</i>	3	
Eucnemidae	<i>Microrhagus pygmaeus</i>	3	
Eucnemidae	<i>Eucnemis capucina</i>	1	
Throscidae	<i>Aulonothroscus brevicollis</i>	1	
Elateridae	<i>Lacon querceus</i>	1	
Elateridae	<i>Calambus bipustulatus</i>	3	
Elateridae	<i>Limoniscus violaceus</i>	1	
Elateridae	<i>Stenagostus rhombeus</i>	3	<i>villosus</i>
Elateridae	<i>Ampedus cardinalis</i>	1	
Elateridae	<i>Ampedus cinnabarinus</i>	1	
Elateridae	<i>Ampedus elongantulus</i>	3	
Elateridae	<i>Ampedus nigerrimus</i>	1	
Elateridae	<i>Ampedus pomorum</i>	3	
Elateridae	<i>Ampedus quercicola</i>	1	<i>pomonae</i>
Elateridae	<i>Ampedus ruficeps</i>	1	
Elateridae	<i>Ampedus rufipennis</i>	1	
Elateridae	<i>Ischnodes sanguinicollis</i>	2	
Elateridae	<i>Megapenthes lugens</i>	1	
Elateridae	<i>Procræus tibialis</i>	1	
Elateridae	<i>Elater ferrugineus</i>	1	
Lycidae	<i>Pyropterus nigroruber</i>	3	
Lycidae	<i>Platycis cosnardi</i>	1	
Lycidae	<i>Platycis minutus</i>	3	
Cantharidae	<i>Malthodes crassicornis</i>	1	
Dermestidae	<i>Globicornis rufitarsis</i>	1	<i>nigripes</i>
Dermestidae	<i>Trinodes hirtus</i>	1	
Bostrichidae	<i>Lyctus brunneus</i>	3	
Anobiidae	<i>Xestobium rufovillosum</i>	3	
Anobiidae	<i>Gastrallus immarginatus</i>	1	
Anobiidae	<i>Dorcatoma ambjoerni</i>	2	
Anobiidae	<i>Dorcatoma chrysomelina</i>	3	
Anobiidae	<i>Dorcatoma dresdensis</i>	2	
Anobiidae	<i>Dorcatoma flavicornis</i>	3	
Anobiidae	<i>Dorcatoma serra</i>	2	
Anobiidae	<i>Anitys rubens</i>	1	
Ptininae	<i>Ptinus subpilosus</i>	2	
Lymexylidae	<i>Hylecoetus dermestoides</i>	3	
Lymexylidae	<i>Lymexylon navalis</i>	2	
Phloiophilidae	<i>Phloiophilus edwardsii</i>	3	
Trogossitidae	<i>Thymalus limbatus</i>	2	
Cleridae	<i>Tillus elongatus</i>	3	

Family	Species	Continuity grade	Other names in common usage
Cleridae	<i>Opilo mollis</i>	3	
Cleridae	<i>Thanasimus formicarius</i>	3	
Cleridae	<i>Korynetes caeruleus</i>	3	
Melyridae	<i>Aplocnemus impressus</i>	2	<i>pini</i>
Melyridae	<i>Aplocnemus nigricornis</i>	2	
Melyridae	<i>Hypebaeus flavipes</i>	1	
Nitidulidae	<i>Carpophilus sexpustulatus</i>	3	
Nitidulidae	<i>Eपुरaea angustula</i>	3	
Rhizophagidae	<i>Rhizophagus nitidulus</i>	3	
Rhizophagidae	<i>Rhizophagus oblongicollis</i>	1	
Silvanidae	<i>Silvanus bidentatus</i>	2	
Silvanidae	<i>Silvanus unidentatus</i>	3	
Silvanidae	<i>Uleiota planata</i>	2	
Cucujidae	<i>Pediacus depressus</i>	2	
Cucujidae	<i>Pediacus dermestoides</i>	3	
Laemophloeidae	<i>Notolaemus unifasciatus</i>	2	
Cryptophagidae	<i>Cryptophagus micaceus</i>	1	
Erotylidae	<i>Triplax lacordairii</i>	3	
Erotylidae	<i>Triplax russica</i>	3	
Erotylidae	<i>Triplax scutellaris</i>	3	
Erotylidae	<i>Tritoma bipustulata</i>	3	
Biphyllidae	<i>Biphyllus lunatus</i>	3	
Biphyllidae	<i>Diplocoelus fagi</i>	3	
Cerylonidae	<i>Cerylon fagi</i>	2	
Endomychidae	<i>Symbiotes latus</i>	3	
Lathridiidae	<i>Lathridius consimilis</i>	1	
Lathridiidae	<i>Enicmus brevicornis</i>	3	
Lathridiidae	<i>Enicmus rugosus</i>	2	
Lathridiidae	<i>Corticaria alleni</i>	1	
Mycetophagidae	<i>Pseudotriphyllus suturalis</i>	3	
Mycetophagidae	<i>Triphyllus bicolor</i>	2	
Mycetophagidae	<i>Mycetophagus atomarius</i>	3	
Mycetophagidae	<i>Mycetophagus piceus</i>	2	
Mycetophagidae	<i>Mycetophagus populi</i>	2	
Mycetophagidae	<i>Mycetophagus quadriguttatus</i>	2	
Ciidae	<i>Cis coluber</i>	2	
Tetratomidae	<i>Tetratoma ancora</i>	3	
Tetratomidae	<i>Tetratoma desmaresti</i>	3	
Melandryidae	<i>Hallomenus binotatus</i>	3	
Melandryidae	<i>Orchesia undulata</i>	3	
Melandryidae	<i>Anisoxya fuscula</i>	3	
Melandryidae	<i>Abdera biflexuosa</i>	3	
Melandryidae	<i>Abdera quadrifasciata</i>	1	
Melandryidae	<i>Phloiotrya vaudoueri</i>	2	
Melandryidae	<i>Hypulus quercinus</i>	1	
Melandryidae	<i>Melandrya barbata</i>	1	
Melandryidae	<i>Melandrya caraboides</i>	3	
Melandryidae	<i>Conopalpus testaceus</i>	3	
Mordellidae	<i>Tomoxia bucephala</i>	3	
Mordellidae	<i>Mordellistena neuwaldeggiana</i>	3	
Colydiidae	<i>Synchita humeralis</i>	3	
Colydiidae	<i>Synchita separanda</i>	3	



Family	Species	Continuity grade	Other names in common usage
Colydiidae	<i>Cicones variegata</i>	2	
Colydiidae	<i>Bitoma crenata</i>	3	
Colydiidae	<i>Teredus cylindricus</i>	1	
Colydiidae	<i>Oxylaemus variolosus</i>	2	
Tenebrionidae	<i>Eledona agricola</i>	3	
Tenebrionidae	<i>Corticeus unicolor</i>	2	
Tenebrionidae	<i>Prionychus ater</i>	3	
Tenebrionidae	<i>Prionychus melanarius</i>	1	
Tenebrionidae	<i>Pseudocistela ceramboides</i>	2	
Tenebrionidae	<i>Mycetochara humeralis</i>	2	
Oedemeridae	<i>Ischnomera caerulea</i>	1	
Oedemeridae	<i>Ischnomera cinerascens</i>	3	
Oedemeridae	<i>Ischnomera cyanea</i>	3	
Oedemeridae	<i>Ischnomera sanguinicollis</i>	1	
Pyrochroidae	<i>Pyrochroa coccinea</i>	3	
Aderidae	<i>Aderus brevicornis</i>	1	
Aderidae	<i>Aderus oculatus</i>	3	
Scraptiidae	<i>Scraptia fuscata</i>	1	
Scraptiidae	<i>Scraptia testacea</i>	1	
Scraptiidae	<i>Anaspis septentrionalis</i>	1	<i>schilskyana</i>
Cerambycidae	<i>Prionus coriarius</i>	3	
Cerambycidae	<i>Grammoptera ustulata</i>	1	
Cerambycidae	<i>Grammoptera variegata</i>	3	<i>abdominalis</i>
Cerambycidae	<i>Anoplodera scutellata</i>	1	
Cerambycidae	<i>Anoplodera sexguttata</i>	2	
Cerambycidae	<i>Leptura aurulenta</i>	3	
Cerambycidae	<i>Leptura quadrifasciata</i>	3	
Cerambycidae	<i>Leptura revestita</i>	2	
Cerambycidae	<i>Pyrrhidium sanguineum</i>	1	
Cerambycidae	<i>Phymatodes testaceus</i>	3	
Cerambycidae	<i>Mesosa nebulosa</i>	2	
Cerambycidae	<i>Saperda scalaris</i>	3	
Anthribidae	<i>Platyrhinus resinosus</i>	3	
Anthribidae	<i>Tropideres sepicola</i>	1	
Anthribidae	<i>Tropideres niveirostris</i>	3	
Anthribidae	<i>Platystomos albinus</i>	3	
Rhynchophoridae	<i>Dryophthorus corticalis</i>	1	
Curculionidae	<i>Rhopalomesites tardyi</i>	3	
Curculionidae	<i>Cossonus parallelepipedus</i>	3	
Curculionidae	<i>Stereocorynes truncorum</i>	1	
Curculionidae	<i>Trachodes hispidus</i>	3	
Scolytinae	<i>Ernoporicus caucasicus</i>	2	
Scolytinae	<i>Ernoporicus fagi</i>	3	
Scolytinae	<i>Ernoporus tiliae</i>	2	
Scolytinae	<i>Xyleborinus saxeseni</i>	3	
Scolytinae	<i>Xyleborus dispar</i>	3	
Scolytinae	<i>Xyleborus dryographus</i>	3	
Scolytinae	<i>Trypodendron domesticum</i>	3	
Scolytinae	<i>Trypodendron signatum</i>	3	
Platypodidae	<i>Platypus cylindrus</i>	3	

## APPENDIX 7D

### INVERTEBRATE INDEX SCORES

The Invertebrate Index was developed internally in the old Nature Conservancy Council and appears in various limited circulation reports, such as county Invertebrate Site Register reports from at least the mid-1980s. It does not appear to have an official publication associated with it but is widely accepted and used by entomologists.

IUCN Status	National Rarity Status	Local Status	Score
none	Notable	n/a	50
none	Notable B	n/a	50
none	Notable A	n/a	50
none	Red Data Book 3 (Rare)	n/a	100
none	Red Data Book 2 (Vulnerable)	n/a	100
none	Red Data Book 1 (Endangered)	n/a	100
none	Red Data Book K (Unknown)	n/a	100
none	Red Data Book I (Indeterminate)	n/a	100
Critically Endangered	Nationally Scarce	n/a	100
Critically Endangered	Nationally Rare	n/a	100
Critically Endangered	none	n/a	100
Endangered	Nationally Scarce	n/a	100
Endangered	Nationally Rare	n/a	100
Endangered	none	n/a	100
Vulnerable	Nationally Scarce	n/a	100
Vulnerable	Nationally Rare	n/a	100
Vulnerable	none	n/a	100
Near Threatened	Nationally Scarce	n/a	100
Near Threatened	Nationally Rare	n/a	100
Near Threatened	none	n/a	50
Data Deficient	Nationally Scarce	n/a	50
Data Deficient	Nationally Rare	n/a	100
Data Deficient	none	n/a	0
Least Concern	Nationally Scarce	n/a	50
Least Concern	Nationally Rare	n/a	100
none	none	CPASI	50