



# **Land behind Jason Farm, Highfields Caldecote**

## **Ecology Report**

Produced for Saskia Barker

By Applied Ecology Ltd

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# 1 Introduction

## Background

- 1.1 Applied Ecology Ltd (AEL) was commissioned by Saskia Barker, in January 2021, to carry out a Preliminary Ecological Appraisal (PEA) and botanical survey of six adjoining grassland fields referred to as Land behind Jason Farm, Highfields Caldecote, Cambridgeshire ("the Study Area").
- 1.2 The purpose of the appraisal is to assess the feasibility of delivering a small high quality residential development, which would be restricted to the south-western field, alongside a wider package of habitat improvements to the remaining fields to achieve an overall net biodiversity gain (as demonstrated through the Defra 3.0 metric).
- 1.3 The southern three grassland fields are designated as Jason Farm Grassland County Wildlife Site (CWS) and the northern three grassland fields are not designated for their botanical importance. A plan showing the location of the Study Area is provided in **Figure 1.1**.

## Legislation and Planning Policy

### Legislation

- 1.4 The Wildlife and Countryside Act 1981 (as amended) provides the main legal framework for nature conservation and species protection in the UK. The Site of Special Scientific Interest (SSSI) is the main statutory nature conservation designation in the UK. Such sites are notable for their plants, or animals, or habitats, their geology or landforms, or a combination of these. Natural England is the key statutory agency in England for advising Government, and for acting as the Government's agent in the delivery of statutory nature conservation designations.
- 1.5 Designation of a SSSI is a legal process, by which sites are notified under the Wildlife and Countryside Act 1981. The 1981 Act makes provision for the protection of sites from the effects of changes in land management, and owners and occupiers receive formal notification specifying why the land is of special scientific interest and listing any operations likely to damage the special interest.
- 1.6 The Countryside and Rights of Way Act 2000, and The Natural Environment and Rural Communities (NERC) Act 2006, provide supplementary protected species legislation. Specific protection for badgers *Meles meles* is provided by the Protection of Badgers Act 1992.

### Habitats and Species of Principal Importance in England

- 1.7 The Natural Environment and Rural Communities (NERC) Act came into force on 1 October 2006. Section 41 (S41) of the Act requires the Secretary of State to publish a list of habitats and species which are of principal importance for the conservation of biodiversity in England. The list has been drawn up in consultation with Natural England, as required by the Act.



- 1.8 The S41 list is used to guide decision-makers such as public bodies, including local and regional authorities, in implementing their duty under section 40 of the Natural Environment and Rural Communities Act 2006, to have regard to the conservation of biodiversity in England, when carrying out their normal functions.

### ***Habitats of Principal Importance***

- 1.9 Fifty-six habitats of principal importance are included on the S41 list. These are all the habitats in England that were identified as requiring action in the UK Biodiversity Action Plan (UK BAP) and continue to be regarded as conservation priorities in the subsequent UK Post-2010 Biodiversity Framework. They include terrestrial habitats such as upland hay meadows to lowland mixed deciduous woodland, and freshwater and marine habitats such as ponds and sub-tidal sands and gravels.

### ***Species of Principal Importance***

- 1.10 There are 943 species of principal importance included on the S41 list. These are the species found in England which were identified as requiring action under the UK BAP and which continue to be regarded as conservation priorities under the UK Post-2010 Biodiversity Framework. In addition, the hen harrier *Circus cyaneus* has also been included on the list because without continued conservation action it is unlikely that the hen harrier population will increase from its current very low levels in England.
- 1.11 In accordance with Section 41(4) the Secretary of State will, in consultation with Natural England, keep this list under review and will publish a revised list if necessary.

### **National Planning Policy Framework**

- 1.12 The National Planning Policy Framework (NPPF) was published in March 2012 (and replaced previous planning policy guidance (PPS 9) on biodiversity. The NPPF was updated in July 2018, February 2019, and in July 2021, and states the following in relation to biodiversity and planning:
- 1.13 *“When determining planning applications, local planning authorities should apply the following principles:*
- *if significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;*
  - *development on land within or outside a Site of Special Scientific Interest, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted. The only exception is where the benefits of the development in the location proposed clearly outweigh both its likely impact on the features of the site that make it of special scientific interest, and any broader impacts on the national network of Sites of Special Scientific Interest;*
  - *development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists; and*



- *development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to improve biodiversity in and around developments should be integrated as part of their design, especially where this can secure measurable net gains for biodiversity or enhance public access to nature where this is appropriate.*

1.14 *The following should be given the same protection as habitats sites:*

- *potential Special Protection Areas and possible Special Areas of Conservation;*
- *listed or proposed Ramsar sites; and*
- *sites identified, or required, as compensatory measures for adverse effects on habitats sites, potential Special Protection Areas, possible Special Areas of Conservation, and listed or proposed Ramsar sites.*

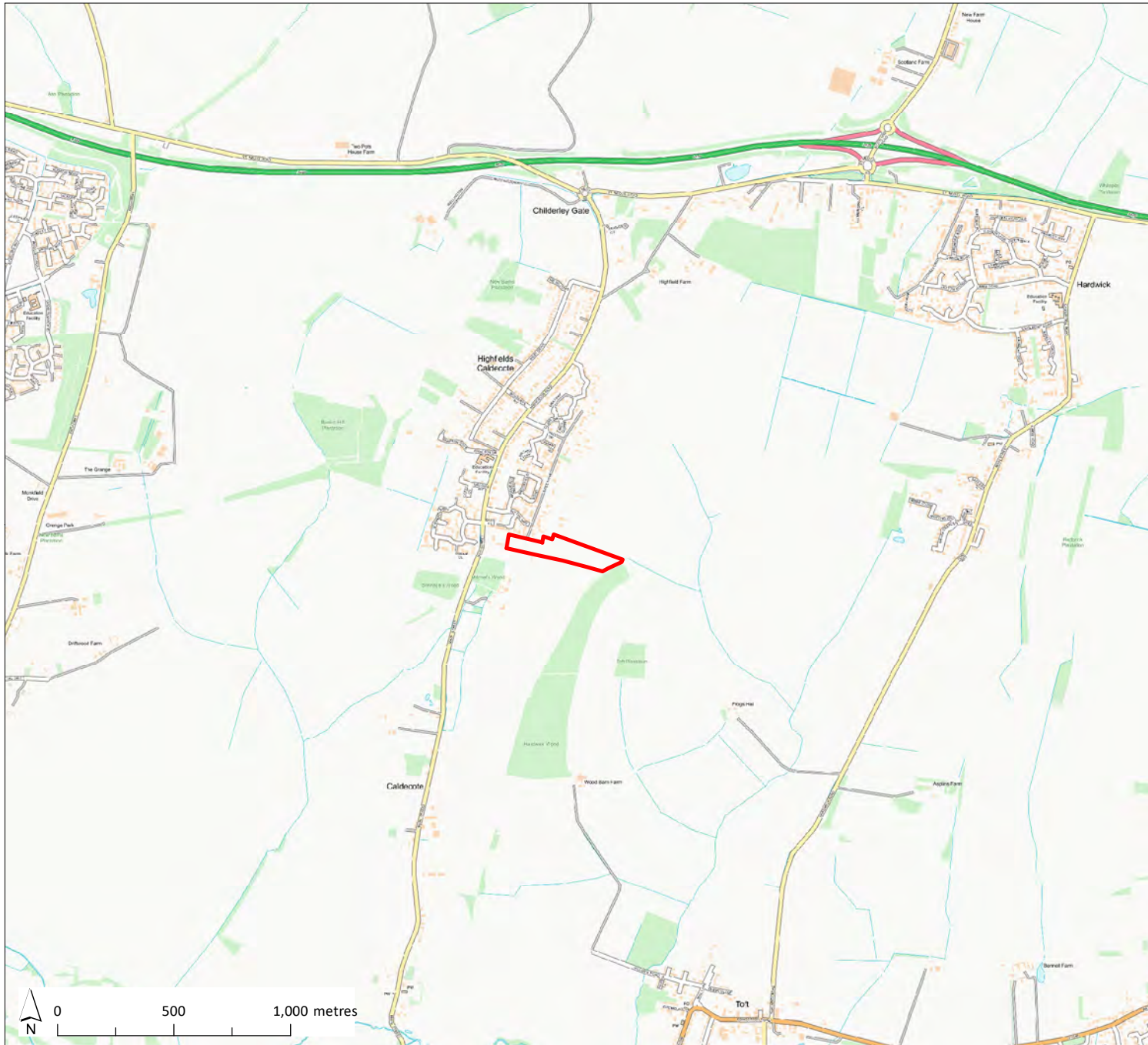
1.15 *The presumption in favour of sustainable development does not apply where the plan or project is likely to have a significant effect on a habitats site (either alone or in combination with other projects) unless an appropriate assessment has concluded that the plan or project will not adversely affect the integrity of the habitats site.”*



# Land behind Jason Farm, Highfields Caldecote


## Study Area

 Study Area



**Figure 1.1**

**Map Scale @ A4: 1:25,000**

Surveyed by: n/a	
Survey date: n/a	
Drawn by: RJH	
Checked by: DP	
Status: Final	



## 2 Review of Existing Information

### Sources of Information

- 2.1 A request for existing biological data, including statutory and non-statutory wildlife sites, and protected and notable species records for the Site and a 1km buffer, was made to the Cambridgeshire & Peterborough Environmental Records Centre (CPERC). The CPERC data report was received on 12 August 2021. Details of statutory wildlife sites beyond the CPERC search area and information relating to SSSI Impact Risk Zones has been retrieved from the Natural England managed MAGIC website<sup>1</sup>.
- 2.2 A previous botanical assessment of the Site was undertaken by other ecological consultants in June/July 2016<sup>2</sup> and has also been reviewed.

### Designated Wildlife Sites

- 2.3 The locations of statutory wildlife sites and ancient woodland in relation to the Study Area are shown on **Figure 2.1**. The locations of non-statutory wildlife sites are shown by the CPERC map included as **Appendix A**.

### Statutory wildlife sites

- 2.4 The closest statutory wildlife site is **Hardwick Wood Site of Special Scientific Interest (SSSI)** which adjoins the Study Area to the east and has a Bridleway known as Mere Way running the length of its western boundary. The wood is characterised by ash and field maple with a mix of oxlip and primrose in the ground layer forming an uncommon woodland type restricted to areas where the range of these species overlaps. The southern and eastern part of the wood is ancient with a substantial and well-preserved wood bank. Hardwick Wood is managed by the Bedfordshire, Cambridgeshire and Northamptonshire Wildlife Trust and is promoted for recreational use.
- 2.5 The entire wood was assessed by Natural England in 2011 as being in Favourable Condition, although it is understood that concerns have been raised by the Wildlife Trust in relation to excessive recreational use and damage to this, and other, sensitive SSSIs locally. The risk of excessive recreational use on the SSSI is reflected by Natural England's Impact Risk Zone (IRZ) classification which states that "*New housing developments will require an assessment of recreational pressure on relevant SSSIs and measures to mitigate adverse impacts e.g. alternative open space provision.*" It is of note that further advice issued by Natural England<sup>3</sup> indicate that "*...developers of residential schemes of 50 or more units should seek to provide sufficient Suitable Alternative Natural Greenspace, (SANG) to avoid and mitigate recreational pressure within and around the SSSI.*"

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<sup>1</sup> <https://magic.defra.gov.uk/>

<sup>2</sup> Green Environmental Consultants Ltd (2016). *L/O East Drive (Jason's Farm) Highfields, Cadlecott, Cambridgeshire – Botanical Assessment*. August 2016. Report number 1135/1.

<sup>3</sup> As reported in: Place Services (2021) *Greater Cambridge Biodiversity Supplementary Planning Document (SPD) – Strategic Environmental Assessment (SEA) & Habitat Regulations Assessment (HRA) Screening Report*. June 2021.



- 2.6 While the proposed scheme would be well below the 50-unit threshold for green space provision, consideration will need to be given to potential concerns relating to a possible increase in recreational pressure on nearby SSSIs, in particular Hardwick Wood SSSI.
- 2.7 **Caldecote Meadows SSSI** is located 150m to the southwest of the Study Area on the far side of Main Street. This SSSI consists of herb-rich grassland which is managed traditionally through a hay cut and aftermath grazing and supports a restricted plant community typical of calcareous loam soils with species including common knapweed, bird's-foot trefoil, agrimony, meadow buttercup, yellow rattle, salad burnet, quaking grass, dropwort, and cowslip. The meadow was assessed by Natural England in 2012 as being in Favourable Condition noting that *“all units looking in great condition, all herb rich with no negative indicators in any quantity”*.
- 2.8 **Kingston Wood and Outliers SSSI** is located 4.2 km to the southwest and **Madingley Wood SSSI** is 4.5km to the northeast.
- 2.9 The closest SSSI with additional Natura 2000 designation is **Eversden and Wimpole Woods SSSI** and **Special Area of Conservation (SAC)**, which is located 4.6km to the south, and is of elevated importance for supporting a maternity roost of the uncommon barbastelle bat *Barbastella barbastellus*. The Study Area is located beyond the area identified in the 2009 Biodiversity SPD<sup>4</sup> as being important for bats associated with the SAC but is within the 5km key conservation area identified by Natural England<sup>5</sup> where *“all development proposals, with the exception of householder applications, should aim to retain mature trees, woods and copses, and to provide new habitat linkages through new tree planting and the integration of existing hedgerow networks with new ones.”*

### Non-statutory wildlife sites

- 2.10 The southern three fields that form part of the Study Area are designated as **Jason Farm Grassland County Wildlife Site (CWS)**. The reasons for CWS designation are that the site supports at least 0.05ha of the NVC community MG5 crested dog's-tail - black knapweed grassland.
- 2.11 Three other CWSs are located within 1km of the Study Area, namely **Bucket Hill Plantation Grassland CWS** (700m to the northwest), **Frogs Hall Drift CWS** (875m to the south) and **Mere Way, south of Hardwick Wood CWS** (980m to the south).

## CPERC Protected and Notable Species Records

- 2.12 A total of 1,578 species records were provided by the CPERC, including the following records from the Study Area: song thrush *Turdus philomelos* (2015), yellowhammer *Emberiza citrinella* (2015), chicory *Cichorium intybus* (2010), hoary plantain *Plantago media* (1992), slender tare *Vicia parviflora* (2010 and 2015) and yellow vetchling *Lathyrus aphaca* (1993). The remaining records can be summarised as follows:

<sup>4</sup> South Cambridgeshire District Council (2009). *Local Development Framework. Biodiversity – Supplementary Planning Document*. Adopted July 2009.

<sup>5</sup> As reported in: Greater Cambridge Shared Planning (2021). *Biodiversity Supplementary Planning Document*. Consultation draft, July 2021.



- 953 records of **birds** including a wide range of woodland and farmland species such as barn owl *Tyto alba*, corn bunting *Emberiza calandra*, grey partridge *Perdix perdix*, skylark *Alauda arvensis* and turtle dove *Streptopelia turtur*.
- 314 **plant** records including a range of notable species mainly associated with grassland and woodland such as adder's-tongue *Ophioglossum vulgatum*, slender tare *Vicia parviflora*, sulphur clover *Trifolium ochroleucon*, oxlip *Primula elatior* and crested cow-wheat *Melampyrum cristatum*.
- 134 **bat** records including common pipistrelle *Pipistrellus pipistrellus* (47 records), Soprano pipistrelle *Pipistrellus pygmaeus* (18), brown long-eared bat *Plecotus auritus* (10), Natterer's bat *Myotis nattereri* (2), noctule bat *Nyctalus noctula* (4) and barbastelle *Barbastella barbastellus* (8).
- 76 records of **other terrestrial mammals** including badger *Meles meles* (53 records), **brown hare** *Lepus europaeus* (13 records), water vole *Arvicola amphibius* and polecat *Mustela putorius* (five records each).
- 63 records of **insects**, including 38 moths, 16 butterflies (mainly of white letter hairstreak *Satyrrium w-album* from Hardwick Wood SSSI) eight beetles, and a single cricket.
- 29 **amphibian** records, including 26 records of great crested newt *Triturus cristatus* (the closest located 470m to the northwest of the Study Area) and four records of common frog *Rana temporaria*.
- Nine records of **reptiles**, all of grass snake *Natrix helvetica*.




## Other Plant Records

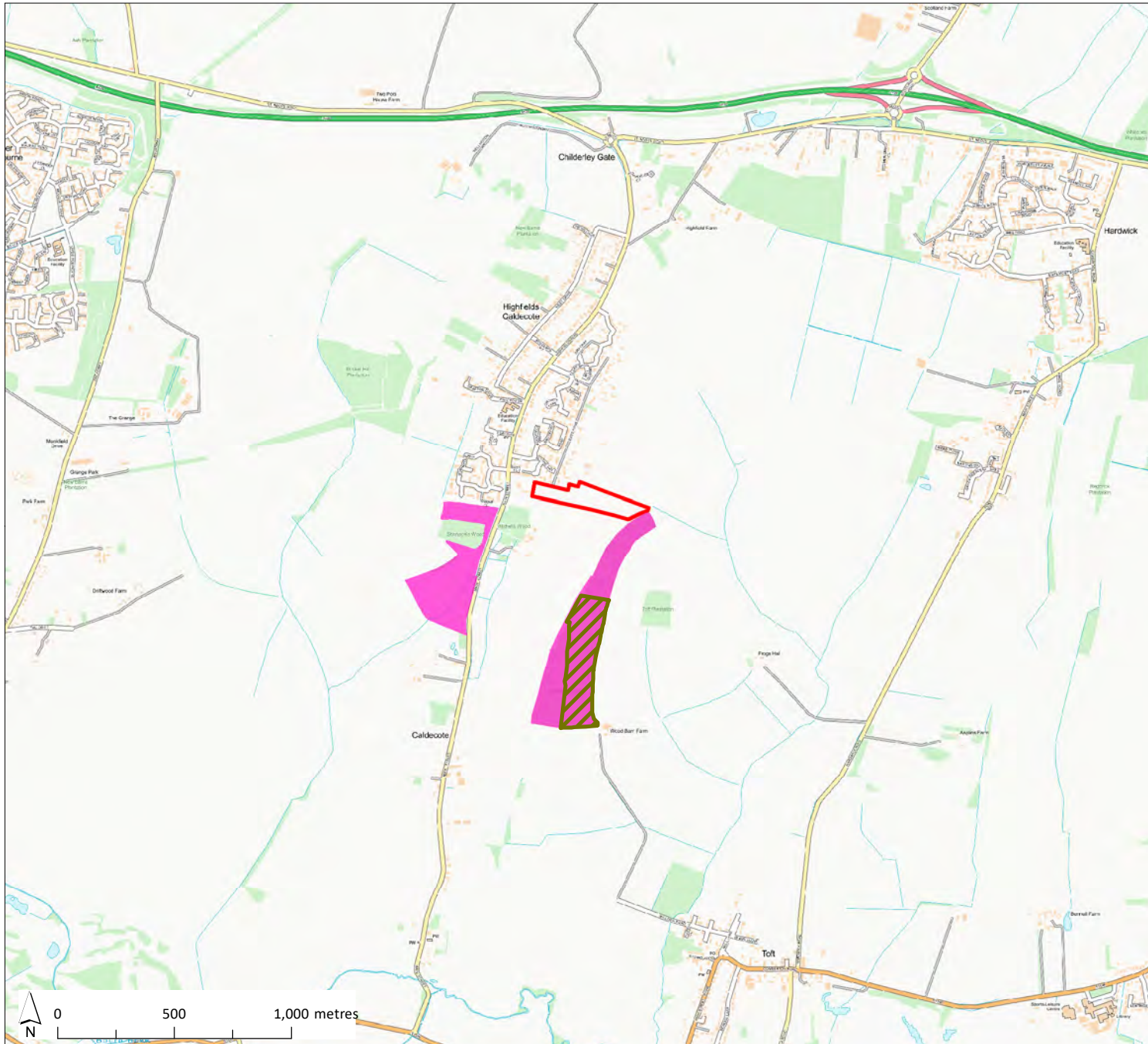
- 2.13 Detailed botanical survey of the Study Area by other consultants in 2016 recorded the presence of wide range of good grassland indicator species, including the UK and England Vulnerable species slender tare *Ervum gracile* (syn. *Vicia parviflora*) in all fields of the CWS and in the central undesignated northern field.



## Land behind Jason Farm, Highfields Caldecote

### Statutory wildlife sites and ancient woodland

-  Study Area
-  SSSI
-  Ancient & Semi-Natural Woodland



**Figure 2.1**

**Map Scale @ A4: 1:25,000**

Surveyed by: n/a

Survey date: n/a

Drawn by: RJH

Checked by: DP

Status: Final



## 3 Field Survey

### Habitat and Botanical Survey

#### Survey Approach

- 3.1 The Study Area is divided into six separate grassland fields that are referred to as 1a-c and 2a-c, as shown by **Figure 3.1**.
- 3.2 A Phase 1 habitat survey of the Study Area was undertaken by Rob Hutchinson MCIEEM (RH) on the 20 April 2021. RH is a Principal Ecologist at AEL and is a highly competent and experienced field botanist<sup>6</sup>.
- 3.3 The methodology adopted followed the standard JNCC approach (JNCC, 2010<sup>7</sup>) by which all habitats were classified and mapped according to standard habitat categories. The habitat map was subsequently digitised using a Geographical Information System (ArcGIS).
- 3.4 Follow-up botanical surveys of the Study Area were undertaken by RH on the 15 June and the 29 July 2021. A list of the higher plant species present and their relative abundance was recorded for each of the six grassland fields. The plant species diversity of each field was also recorded using 1x1m quadrat samples, and notes were made on other habitat parameters relevant to the BNG Metric 3.0 and associated condition assessment.
- 3.5 It is of note that substantial areas in each of the six grassland fields were left un-grazed from the start of the 2021 growing period to facilitate the botanical recording.

#### Survey findings

- 3.6 The Phase 1 habitat map is shown by **Figure 3.2**, and a breakdown of the habitat types, their corresponding UKHAB / Metric 3.0 habitat type and associated condition and coverage within each field is provided in **Table 3.1**.

#### Grassland

- 3.7 The full tabulated results of the botanical surveys are provided in **Appendix B**, and a summary of the plant data for each of the six fields is provided in **Table 3.2**.
- 3.8 The three adjoining northern fields (1a-c) are divided by post and wire fencing and run from west to east to the north of a public bridleway and hedgerow, with the three adjoining southern fields (2a-c) consisting of fenced fields running west to east south of the hedge lined bridleway. The southern three fields (2a-c) are designated as Jason's Farm County Wildlife Site (CWS) and the northern three fields have no wildlife site designation.

<sup>6</sup> RH has an MSc (distinction) in Vegetation Survey & Assessment and holds a Level 5 Field Identification Skills Certificate (equivalent to Very good ID skills) from the Botanical Society of Britain & Ireland.

<sup>7</sup> JNCC (2010) *Handbook for Phase 1 Habitat Survey – A technique for Environmental Audit*. JNCC, Peterborough.



**Table 3.1: Breakdown of habitat types within the Study Area by field.**

Phase 1 habitat type	Corresponding UKHAB/Defra 3.0 habitat and existing condition	Field no. and area in ha					
		1a	1b	1c	2a	2b	2c
Species-rich semi-improved neutral grassland	Other neutral grassland – fairly-good condition	-	-	0.663	-	-	0.695
Species-rich semi-improved neutral grassland	Other neutral grassland – moderate condition	-	0.434	-	0.692	0.802	-
Species-poor improved grassland	Modified grassland – moderate condition	0.079	-	-	0.005	0.006	-
Dense scrub	Mixed scrub – moderate condition	-	-	-	0.117	-	-
Bare ground	Bare ground – poor condition	-	-	-	0.057	-	-
Tall ruderal	Ruderal/ephemeral – moderate condition	0.010	0.016	0.013	-	-	-
<b>Totals</b>		<b>0.089</b>	<b>0.450</b>	<b>0.676</b>	<b>0.808</b>	<b>0.695</b>	

**Table 3.2: Summary of plant data for each field.**

Field ref.	Total no. of plant spp.	Ave. no. of plant spp. in 1m sq.	Scarce / rare plant species	No. of good grassland indicators			
				NG	NG*	CG	CG*
1a	47 <sup>8</sup>	6.0	-	4	0	3	0
1b	50	10.3	-	7	1	6	1
1c	55	14.0	<i>Vicia parviflora</i>	8	4	6	3
2a	22	10.7	-	2	1	1	1
2b	26	8.7	-	3	3	2	3
2c	58	13.7	<i>Vicia parviflora</i>	9	7	6	7

3.9 All six grassland fields are thought to have been arable farmland until the late 1950s / early 1960s<sup>9</sup>, and since their conversion to permanent grassland they have been grazed by sheep and more recently by horses. The fields have avoided significant improvement through reseeding and/or the use of artificial fertilisers to improve sward productivity. The grazing of horses has been carefully controlled and managed by the current owners using electric fencing to restrict forage availability, avoiding grazing in winter and during periods of ground saturation, frequent dung removal and spot treating and pulling of ragwort. There is no evidence that horse grazing has been detrimental to the grassland (e.g. avoidance mosaics in areas of latrine use are not present), although grazing has occurred throughout the summer and this is likely to have restricted flowering, seed set and structural diversity. In addition, long-term grazing throughout the summer could cause a gradual decline in diversity and botanical interest and well as constraining the 'potential value' of the

<sup>8</sup> The relatively high species diversity in this field is largely due to the presence of numerous commonplace tall ruderal and ephemeral species associated with areas of past disturbance and enrichment.

<sup>9</sup> Given the relatively recent conversion from arable land the grasslands are not considered to be unimproved grassland.



grassland for invertebrates and other wildlife. The current owner's observations suggest that a run of very wet winters and dry summers have favoured grasses and mosses at the expense of wildflowers.

- 3.10 The grassland assemblage largely confirms to NVC community MG5 typical of chalky boulder clay with transitions to less interesting MG6 from east to west. All six fields are rather poorly drained and susceptible to saturation in winter. The Study Area slopes gently from west to east, which combined with the shading afforded by Hardwick Wood, means that the eastern fields are likely to be less parched during the summer period.
- 3.11 The small western field north of the bridleway (Field 1a) was dominated by species-poor semi-improved grassland (**modified grassland of moderate condition** according to the Defra metric habitat classification) and dominated by a mix of rough meadow-grass *Poa trivialis* and perennial rye-grass *Lolium perenne* with patches of tall ruderals, ephemeral vegetation, and bare ground, associated with past ground disturbance and land raising. Although this mix of ephemeral habitats significantly increased the overall plant diversity of this paddock, the grassland itself was of low diversity with an average of 6.0 plant species per 1m sq. The field supported a small number of good grassland indicators, albeit all at very low abundance.
- 3.12 The grassland associated with Fields 1b, 2a and 2b was classified as semi-improved grassland (**other neutral grassland of moderate condition**). These fields were typically dominated by common pasture grasses such as crested dog's-tail *Cynosurus cristatus*, red fescue *Festuca rubra*, perennial rye-grass and meadow barley *Hordeum secalinum*, with a wide range of forbs such as meadow buttercup *Ranunculus acris*, red bartsia *Odontites vernus* and field bindweed *Convolvulus arvensis*, with locally abundant hawthorn *Crataegus monogyna* saplings (particularly Field 2a), and a range of good grassland indicators that were typically of rare or occasional occurrence. The average number of plants recorded from these fields per 1m sq. ranged from 8.7 to 10.7 species.
- 3.13 The eastern two fields were also classified as species-rich semi-improved grassland (**other neutral grassland of fairly-good condition**) but supported a more diverse species assemblage, richer in herbs and with a wider range of good grassland indicator species and at greater abundance. Noteworthy species included slender tare, common spotted orchid *Dactylorhiza fuchsii*, adder's-tongue *Ophioglossum vulgatum* and yellow-wort *Blackstonia perfoliata*. The average number of plants recorded Fields 1c and 2c, was 14.0 and 13.7 species, respectively.
- 3.14 The assignment of 'fairly-good' condition to these grassland areas is considered appropriate in recognition that the sward composition and current grazing regime could be significantly improved as part of a future conservation grazing plan to deliver and secure improvements to sward structure and plant diversity.

### **Dense scrub**

- 3.15 A single neglected stand of young, planted trees and shrubs that has developed into mixed dense scrub is present on the northern wide of Field 2a. Woody species include hawthorn, dogwood *Cornus sanguinea*, hazel *Corylus avellana*, goat willow *Salix caprea*, dog-rose *Rosa canina*, oak *Quercus robur* and pine *Pinus* species.



### **Tall ruderal**

- 3.16 Occasional stands of dense tall ruderals such as nettle *Urtica dioica* and creeping thistle *Cirsium arvensis* were present in enriched and rough parts of the paddocks where grazing was restricted.

### **Hedgerows**

- 3.17 Species-rich hedgerows with occasional trees are present along the northern and southern boundaries of the Study Area and to the south of the central Bridleway dividing the northern and southern fields. The dominant species throughout was hawthorn, with a range of other native woody species at lower abundance including ash *Fraxinus excelsior*, dog-rose, dogwood, field maple *Acer campestre*, blackthorn *Prunus spinosa*, oak, hazel, oak, wayfaring tree *Viburnum lanatus*, and buckthorn *Rhamnus cathartica*.

## **Protected Species Walkover**

### **Survey approach**

- 3.18 A walkover survey of the Study Area was undertaken by Dr Duncan Painter<sup>10</sup> in conjunction with the habitat survey on 20 April 2021.
- 3.19 The walkover included a search for evidence of or potential for the presence of protected species or species of nature conservation interest within and close to the study area. This was not a detailed survey for such species but included noting the presence of habitats suitable to support specific protected species, and where seen, any evidence of presence such as droppings, mammal tracks and footprints, shelters (or nests/roosts), hair caught on fence-wire, foraging signs, and so on.
- 3.20 In addition, an ornamental pond was identified in a private garden 77m to the west of the Study Area and was subject to a great crested newt presence / absence survey using an ADAS eDNA kit, with samples collected by DP on the 3 June 2021.

### **Survey findings**

- 3.21 There were no obvious protected species constraints associated with the grassland fields, within no obvious badger setts present in boundary hedgerows, and the grassland itself too short and uniform to be of significant value to reptiles. The hedgerows are likely to support range of common bird species but are unlikely to support significant interest in terms of number of birds and/or species or high conservation importance.
- 3.22 The eDNA analysis undertaken by ADAS confirmed that GCN were absent from the pond.

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<sup>10</sup> Holds three separate licences pertaining to bat survey: WML-CL18; WML-CL21; and WML-CL32 and has been a registered bat roost volunteer visitor for Natural England (WML-CL15). Holds class licences in relation to badger (WML-CL35) and great crested newt (WML-CL09 & WML-CL33), hazel dormouse (WML-CL10A), and native crayfish (WML-CL11). Trained in the use of thermal camera operation and analysis by Dr Kayleigh Fawcett Williams.





## Land behind Jason Farm, Highfields Caldecote

### Field references



**Figure 3.1**

**Map Scale @ A4: 1:2,750**












Surveyed by: n/a	
Survey date: n/a	
Drawn by: RJH	
Checked by: DP	
Status: Final	

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

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## Land behind Jason Farm, Highfields Caldecote

### Habitat map

-  Study Area
-  Field boundaries
-  species-rich semi-improved neutral grassland (fairly good condition)
-  species-rich semi-improved neutral grassland (moderate condition)
-  species-poor semi-improved neutral grassland
-  dense scrub
-  tall ruderal
-  bare ground
-  species-rich intact hedgerow
-  individual tree (indicative location)
-  scattered scrub

**Figure 3.2**

**Map Scale @ A4: 1:2,750**

Surveyed by: RJH

Survey date: April-July 2021

Drawn by: RJH

Checked by: DP

Status: Final



## 4 Evaluation and Recommendations

### Development Proposals

- 4.1 While proposals for future development have not yet been established, the location and extent of land under consideration would be restricted to the south-western field (Field 2a). The remainder of the grassland within the Study Area (off-site land) would be subject to a package of habitat and management improvements with a view to off-setting development impacts and targeting an overall net gain in biodiversity.
- 4.2 The Site boundary, the Development area (extent of development habitat loss) and the extent of the off-site enhancement area used by the current Metric calculations are shown by **Figure 4.1**.

### Biodiversity Impact Calculations

- 4.3 The Defra 3.0 calculator has been submitted as a standalone spreadsheet alongside this report.
- 4.4 The current calculations show that a new residential development within Field 2a amounting to 0.64ha could be delivered while achieving a **significant overall uplift in biodiversity (1.7 units / 24.84% net gain)** by implementing a package of on-site habitat creation (new residential gardens) and off-site habitat improvements. These calculations are based on the following working assumptions:
- The development area (permanent habitat loss) within Field 2a covers a total area of 0.64ha with 0.62ha of grassland and 0.02ha of bare ground (0.02ha). The area of dense scrub along the northern boundary of the Site would be retained.
  - The proposed residential development would consist of 60% buildings and hard-standing and 40% vegetated gardens.
  - All hedgerows would be retained and protected, and separate hedgerow calculations have not been made at this stage.
  - A new pond would be created in Field 1a and it is assumed this would be around 0.02ha in extent and be a permanent standing water body with biodiversity benefits.
  - The moderate condition grassland within Fields 1b and 2b (and a small area in Field 2a) would be enhanced to good condition and maintained by sympathetic management in the long-term.
  - The fairly-good condition grassland within Fields 1c and 2c would be enhanced to good condition and maintained by sympathetic management in the long-term.
  - Areas of existing modified grassland and tall ruderal vegetation would be converted to wildflower grassland and managed as part of the wider biodiversity resource.
  - The areas located within the County Wildlife Site are included in Metric calculations as being “*within area formally identified in local strategy*” under the strategic significance criterion.



- 4.5 Full details of the grassland enhancement and management measures that would need to be implemented to achieve the condition targets would be set out in a detailed enhancement and management plan. However, in outline terms the following options are being considered:
- The removal and reseeded (with commercially available wildflower seed mix or green hay) of existing patches of tall ruderal and their incorporation into the wider grassland resource.
  - Where necessary, the diversification of existing swards using species-rich green hay cut from Fields 1c and 2c, or potentially from other botanically rich local sites that support suitable grassland (subject to landowner agreement).
  - Developing and implementing a long-term conservation led grassland management plan that promotes structural diversity and flowering and fruiting during summer. Possible grassland options include:
    - a combination of autumn hay cutting followed by light aftermath grazing.
    - seasonal grazing with reduced grazing in summer.
    - mixed grazing with a combination of sheep and horses.
- 4.6 In addition, a programme of annual grassland monitoring would be to be undertaken to inform management going forward and ensure that condition targets are being delivered.




## Other Development Enhancements

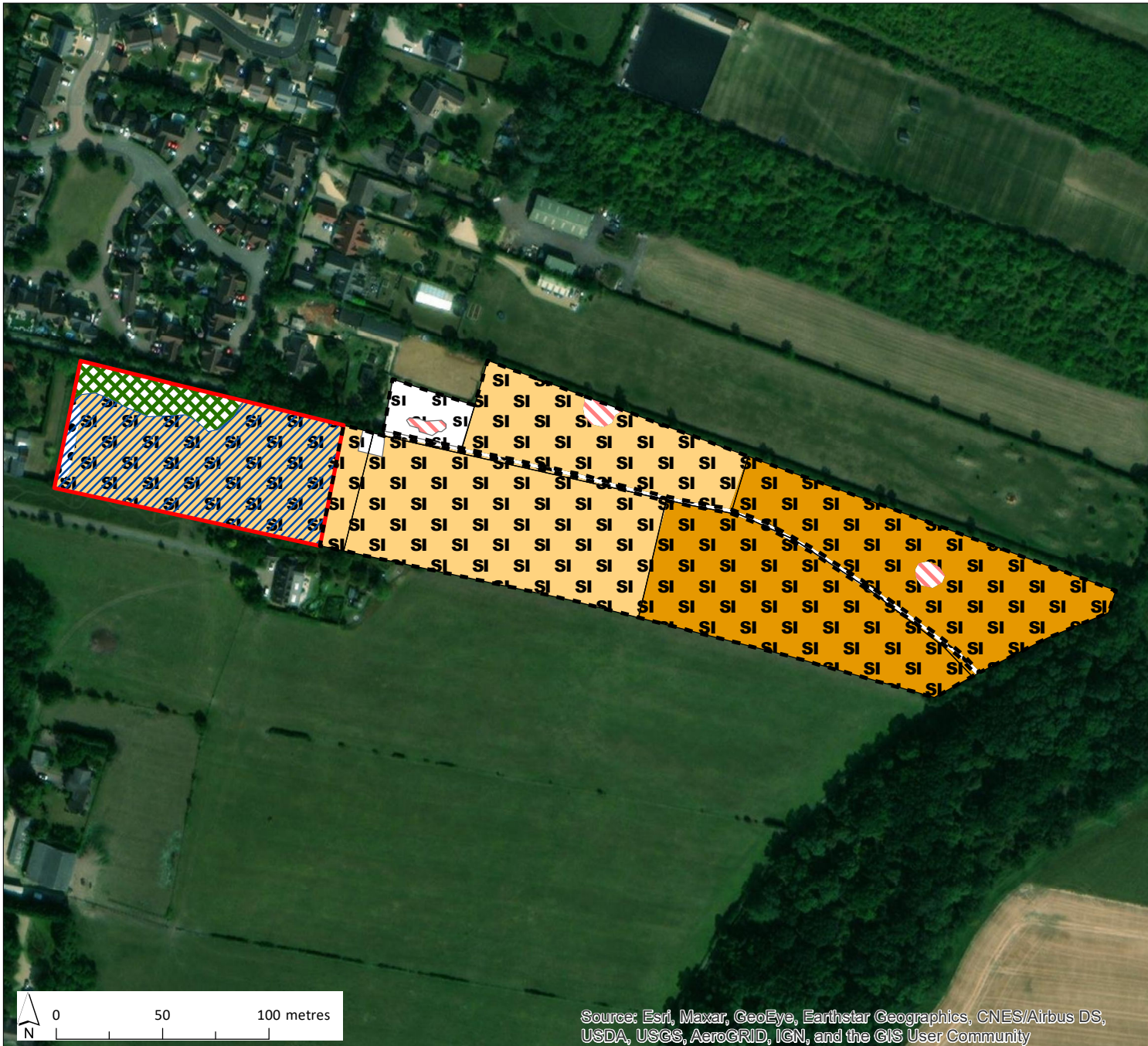
- 4.7 Several other enhancement measures could be incorporated into the new residential development to further enhance biodiversity, including:
- Native and wildlife friendly planting, including trees and shrubs and pollinator mixes.
  - The incorporation of integrated bat and bird boxes into new buildings.
  - Hedgehog friendly boundaries.
  - The creation of a community orchard and/or allotment.
- 4.8 In addition, to avoid negative effects on bats, development design must ensure that light-spill is minimised, and boundary hedgerows are not directly lit after-dark.



## Land behind Jason Farm, Highfields Caldecote

### Site boundary, Development area and extent of off-Site enhancement

-  Site boundary
-  Development area (habitat loss)
-  Off-site land to to be subject to package of habitat creation and enhancement



**Figure 4.1**

Map Scale @ A4: 1:2,750

Surveyed by: RJH

Survey date: April-July 2021

Drawn by: RD

Checked by: RJH

Status: Final



Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



# Appendix A

## CPERC designated sites map



Designated Sites Map

for Applied Ecology

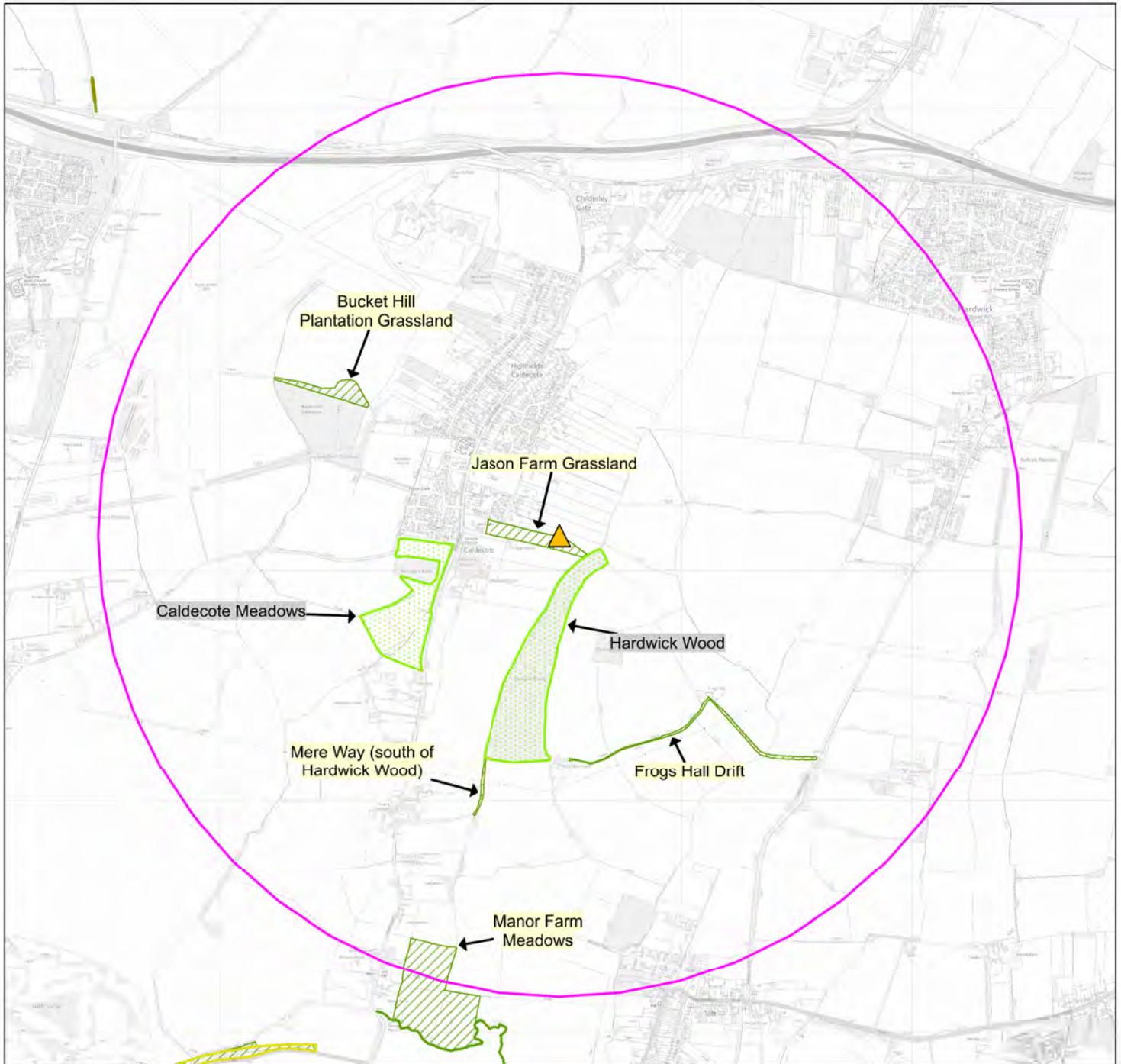
Highfield Caldecote




1:25000





12th August 2021

CPERC  
The Manor House  
Broad Street  
Cambourne  
Cambridgeshire  
CB23 6DH

**CPERC**  
CAMBRIDGESHIRE & PETERBOROUGH  
ENVIRONMENTAL RECORDS CENTRE



	Search Area
	Supplied Grid Reference
	County Boundary

	SSSI
	LNR
	County Wildlife Site
	Protected Road Verge



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Cambridgeshire County Council 100023205 (2021)



# Appendix B

## Plant data



## Plant data – species list and DAFOR by field.

Plant species	CWS	CWS	CWS	Non-CWS	Non-CWS	Non-CWS	Cams NG & CG Indicators (* = strong)			
	West 2a	Middle 2b	East 2c	West 1a	Middle 1b	East 1c	NG	NG*	CG	CG*
<i>Achillea millefolium</i>	-	-	-	R	-	-	-	-	-	-
<i>Agrimonia eupatoria</i>	-	-	R	-	R	R	Y	-	Y	-
<i>Agrostis capillaris</i>	-	-	-	-	-	R	-	-	-	-
<i>Agrostis stolonifera</i>	O	-	LA	A	R	LA	-	-	-	-
<i>Alopecurus pratensis</i>	-	-	R	O	-	R	-	-	-	-
<i>Anagallis arvensis</i>	-	-	R	-	-	-	-	-	-	-
<i>Anthriscus sylvestris</i>	-	-	R	-	-	-	-	-	-	-
<i>Arrhenatherum elatius</i>	-	LA	R	R	O	LA	-	-	-	-
<i>Bellis perennis</i>	R	-	O	O	R	R	-	-	-	-
<i>Blackstonia perfoliata</i>	-	-	R	-	-	-	-	-	-	Y
<i>Brachypodium sylvaticum</i>	-	-	-	-	-	R	-	-	-	-
<i>Bromus commutatus</i>	-	-	-	-	-	R	-	Y	-	-
<i>Carex flacca</i>	R	-	F	-	-	R	-	Y	-	Y
<i>Centaureum erythraea</i>	-	-	R	-	R	R	Y	-	Y	-
<i>Cerastium fontanum</i>	-	-	O	R	-	R	-	-	-	-
<i>Chaerophyllum temulum</i>	-	-	-	-	-	R	-	-	-	-
<i>Cirsium arvense</i>	-	-	-	-	-	R	-	-	-	-
<i>Cirsium vulgare</i>	-	-	R	R	R	R	-	-	-	-
<i>Convolvulus arvensis</i>	O	O	O	-	R	O	-	-	-	-
<i>Cornus sanguinea</i>	-	-	-	R	-	-	-	-	-	-
<i>Crataegus monogyna</i>	F	R	R	R	R	R	-	-	-	-
<i>Crepis capillaris</i>	-	-	-	-	R	-	-	-	-	-
<i>Cynosurus cristatus</i>	D	D	A	A	D	D	-	-	-	-
<i>Dactylis glomerata</i>	O	O	O	O	O	F	-	-	-	-
<i>Dactylorhiza fuchsii</i>	-	-	O	-	-	R	-	Y	-	Y
<i>Daucus carota</i>	-	O	F	-	O	O	-	-	-	-
<i>Elytrigia repens</i>	R	-	R	LA	R	-	-	-	-	-
<i>Epilobium parviflorum</i>	-	-	-	R	-	-	-	-	-	-
<i>Festuca arundinacea</i>	-	-	R	-	-	-	-	-	-	-
<i>Festuca pratensis</i>	-	R	-	-	-	-	-	-	-	-
<i>Festuca rubra</i>	A	A	D	-	A	A	-	-	-	-
<i>Fraxinus excelsior</i>	-	-	-	R	-	-	-	-	-	-
<i>Geranium dissectum</i>	-	-	R	R	-	O	-	-	-	-
<i>Geranium molle</i>	-	-	-	-	-	R	-	-	-	-
<i>Geum urbanum</i>	-	-	-	R	-	-	-	-	-	-
<i>Helminthotheca echioides</i>	-	-	R	R	R	R	-	-	-	-
<i>Heracleum sphondylium</i>	-	-	R	-	-	R	-	-	-	-
<i>Holcus lanatus</i>	O	F	O	O	O	O	-	-	-	-
<i>Hordeum secalinum</i>	O	O	F	R	A	O	Y	-	-	-



Plant species	CWS	CWS	CWS	Non-CWS	Non-CWS	Non-CWS	Cams NG & CG Indicators (* = strong)			
	West 2a	Middle 2b	East 2c	West 1a	Middle 1b	East 1c	NG	NG*	CG	CG*
<i>Lathyrus pratensis</i>	-	-	O	-	-	O	Y	-	-	-
<i>Leontodon autumnalis</i>	-	-	-	-	A	F	-	-	-	-
<i>Leontodon hispidus</i>	-	R	O	-	R	R	-	Y	-	Y
<i>Leucanthemum vulgare</i>	-	-	R	R	F	R	Y	-	Y	-
<i>Linum catharticum</i>	-	R	O	-	-	-	-	Y	-	Y
<i>Lolium perenne</i>	A	O	R	F	R	O	-	-	-	-
<i>Lotus corniculatus</i>	-	-	R	-	R	R	Y	-	Y	-
<i>Matricaria discoidea</i>	-	-	-	R	R	-	-	-	-	-
<i>Medicago lupulina</i>	-	-	F	-	A	O	-	-	-	-
<i>Myosotis arvensis</i>	-	-	-	R	R	-	-	-	-	-
<i>Odontites verna</i>	A	-	O	R	R	O	-	-	-	-
<i>Ononis repens</i>	-	-	R	-	-	-	-	Y	-	Y
<i>Ononis spinosa</i>	-	R	-	-	-	-	-	Y	-	Y
<i>Ophioglossum vulgatum</i>	-	-	O	-	-	-	-	Y	-	-
<i>Persicaria maculosa</i>	-	-	-	R	-	-	-	-	-	-
<i>Phleum bertolonii</i>	-	O	-	R	R	R	-	-	-	-
<i>Phleum pratensis</i>	-	-	-	-	-	R	-	-	-	-
<i>Plantago lanceolata</i>	-	-	R	R	O	R	-	-	-	-
<i>Plantago major</i>	-	-	R	R	R	R	-	-	-	-
<i>Poa annua</i>	R	R	-	-	-	-	-	-	-	-
<i>Poa pratensis</i>	-	-	O	-	-	-	-	-	-	-
<i>Poa trivialis</i>	O	O	R	D	F	O	-	-	-	-
<i>Polygonum arenastrum</i>	-	-	-	R	-	-	-	-	-	-
<i>Potentilla anserina</i>	-	-	R	-	-	-	-	-	-	-
<i>Potentilla reptans</i>	-	O	LA	-	-	-	-	-	-	-
<i>Prunella vulgaris</i>	-	O	O	O	O	O	-	-	-	-
<i>Prunus sp.</i>	-	-	R	R	R	R	-	-	-	-
<i>Pulicaria dysenterica</i>	-	-	R	-	-	-	Y	-	-	-
<i>Quercus robur</i>	R	-	-	-	-	R	-	-	-	-
<i>Ranunculus acris</i>	O	O	F	O	O	O	-	-	-	-
<i>Ranunculus repens</i>	R	R	R	O	O	O	-	-	-	-
<i>Rhinanthus minor</i>	-	-	LA	-	-	-	-	Y	-	Y
<i>Rosa arvensis</i>	-	R	-	-	-	R	-	-	-	-
<i>Rosa canina</i>	R	-	-	-	-	R	-	-	-	-
<i>Rubus fruticosus</i>	-	-	-	R	R	-	-	-	-	-
<i>Rumex crispus</i>	-	-	-	R	R	-	-	-	-	-
<i>Rumex obtusifolius</i>	-	-	R	O	R	-	-	-	-	-
<i>Senecio erucifolius</i>	-	R	O	R	R	R	Y	-	Y	-
<i>Senecio jacobaea</i>	-	-	R	R	R	R	-	-	-	-
<i>Sison amomum</i>	-	-	-	R	R	-	-	-	-	-
<i>Sonchus oleraceus</i>	-	-	-	-	R	-	-	-	-	-
<i>Taraxacum officinale</i>	-	-	R	-	R	-	-	-	-	-



Plant species	CWS	CWS	CWS	Non-CWS	Non-CWS	Non-CWS	Cambs NG & CG Indicators (* = strong)			
	West 2a	Middle 2b	East 2c	West 1a	Middle 1b	East 1c	NG	NG*	CG	CG*
<i>Trifolium campestre</i>	-	R	R	-	-	-	-	-	-	-
<i>Trifolium dubium</i>	-	O	O	O	R	R	-	-	-	-
<i>Trifolium pratense</i>	O	-	F	R	F	O	-	-	-	-
<i>Trifolium repens</i>	O	-	R	O	R	R	-	-	-	-
<i>Trisetum flavescens</i>	R	O	O	R	O	R	Y	-	Y	-
<i>Urtica dioica</i>	-	-	-	LA	-	R	-	-	-	-
<i>Veronica chamaedrys</i>	-	-	-	R	R	-	-	-	-	-
<i>Veronica serpyllifolia</i>	-	-	-	-	R	-	-	-	-	-
<i>Vicia parviflora</i>	-	-	F	-	-	R	-	-	-	-
<i>Vicia sativa</i>	-	-	-	R	R	-	-	-	-	-
<i>Vicia tetrasperma</i>	-	-	-	-	R	-	-	-	-	-



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