

### 3.5 Site 5. Carrowbreck House, Hellesdon

#### Photographs



#### Key Facts

- 3.5.1 Size of the Site: 1.55ha
- 3.5.2 Habitats present: **Lowland meadow, Other neutral grassland, Modified grassland; Individual trees, Developed land; sealed surface, Other woodland; Mixed, Bramble scrub, Native hedgerow with trees.**
- 3.5.3 Tree Preservation Orders, Conservation Areas, County Wildlife Sites (CWS), Roadside Nature Reserves, Priority Habitats, Statutory Designated Sites present on site? **Strategic Areas over woodland habitats only.**
- 3.5.4 Recommended habitat measures in LNRS: **Deciduous Woodland Restoration over part of the woodland on Site.**

#### Baseline Habitat Description and BNG Calculation

- 3.5.5 Carrowbreck House consists of a mosaic of diverse grassland and woodland habitats already offering significant biodiversity value.
- 3.5.6 It contained an area of Priority Habitat – lowland meadow in the north-west corner of the Site and good quality ‘other neutral grassland’ to the west of Carrowbreck House which had been left long with footpaths mown through it.
- 3.5.7 The lowland meadow was in **moderate condition** and situated on an earth bund with a flattened top. The grassland was left long and contained approximately nine vascular plant species per average square metre and meets the following UKHab criteria for

lowland meadow: more than 30% cover of broadleaved herbs and sedges; and <10% cover of perennial ryegrass and white clover. The grassland also contained four lowland meadow indicator species: bird's foot trefoil *Lotus corniculatus*, salad burnet *Poterium sanguisorba*, lady's bedstraw *Galium verum* and black knapweed *Centaurea nigra*. The only condition criteria failed and preventing this habitat from being classified in good condition was Criterion F which requires the grassland to have 10 or more vascular plant species per square metre on average.

- 3.5.8 The other neutral grassland in **moderate condition** was present to the west of Carrowbreck House. This grassland had been left long with footpaths mown through it. This grassland had a diverse floral assemblage with approximately eight vascular plant species per square metre including salad burnet, bird's foot trefoil, field scabious *Knautia arvensis*, lady's bedstraw, cowslip *Primula veris*, common knapweed and yellow rattle *Rhinanthus minor*. Similarly to the lowland meadow, the only reason the other neutral grassland was in moderate condition was it did not meet Criterion F of more than 10 vascular plant species per square metre however given time and continued hay cutting, this grassland is likely to achieve good condition over time.
- 3.5.9 Modified grassland in **poor condition** was present in strips along the south-west boundary of the Site and to the north of Carrowbreck House. These areas of grassland were mown short and dominated by coarse grasses such as perennial ryegrass with infrequent common wildflowers.
- 3.5.10 Mixed woodland in **poor condition** was present on the Site. The woodland consisted of an overstorey of beech, lime, pine *Pinus sylvestris*, sycamore, cherry, horse chestnut and oak. It had an understorey of holly, bramble, horse chestnut, ash and oak and a field layer of common nettle, herb Robert *Geranium robertianum*, false oat grass *Arrhenatherum elatius*, wood avens *Geum urbanum*, cocksfoot and bramble. The woodland was in poor condition due to a lack of diverse ground flora due to a lack of light to the woodland floor. The shrub layer was also absent in places, there was limited deadwood on the ground and signs of disturbance from recreational pressure and deer were frequent. Grass clippings were also present within the woodland.
- 3.5.11 Other habitats on Site included small areas of bramble scrub and individual trees in **moderate and good condition** including willow *Salix sp.* Oak, ash, cypress, pine and beech.
- 3.5.12 Two lengths of native hedgerow with trees in **moderate condition** were present to the west of Carrowbreck House.
- 3.5.13 In total, the habitats on Site represent **10.29 Habitat Units and 2.10 Hedgerow Units** as shown in Tables 8 and 9 below.

**Table 8. Baseline BNG Calculation for Habitats**

Habitat	Area (hectares)	Ecological Distinctiveness	Condition	Habitat Units (HU)
Lowland meadow	0.0891	Very high	Moderate	1.43
Modified grassland	0.2215	Low	Poor	0.44
Other neutral grassland	0.3455	Medium	Moderate	2.76
Bramble scrub	0.0222	Medium	N/A	0.09
Developed land; sealed surface	0.1485	Very Low	N/A	0.00
Other woodland; mixed	0.4731	Medium	Poor	1.89
Other woodland; mixed	0.2549	Medium	Poor	1.02
Individual trees	0.1425	Medium	Moderate	1.14
Individual trees	0.1262	Medium	Good	1.51
<b>Total</b>	<b>1.55 (excluding trees)</b>			<b>10.29</b>

**Table 9. Baseline BNG Calculation of Hedgerows**

Habitat	Length (kilometres)	Ecological Distinctiveness	Condition	Hedgerow Units (HeU)
Native hedgerow with trees	0.262	Medium	Moderate	2.10
<b>Total</b>	<b>0.262</b>			<b>2.10</b>

3.5.14 A map of the baseline habitats is provided in Figure 5, Appendix 1.

### Proposed Biodiversity Enhancements

- Continue existing management of grasslands; and
- Enhanced woodland management including:
  - Clear some of the bramble in glades;
  - More logpiles and deadwood on the floor and in the canopies of trees;
  - Thin trees in dense areas to promote more light to woodland floor;
  - Encourage natural regeneration of broadleaved species in thinned areas and remove non-native seedlings/saplings; and

- Encourage more of a shrub layer/supplement with native shrub planting such as midland hawthorn *Crataegus laeviagata*, field maple, rowan, hazel. Protect new planting with dead hedging from brash or bramble removal or alternatively fencing.

3.5.15 A map of the proposed habitats is shown in Figure 5, Appendix 2.

### **Specification of Management Actions**

#### Grassland:

3.5.16 The existing other neutral grassland and lowland meadow on the Site must continue to be managed for biodiversity in order to maintain and enhance their floral diversity and abundance. The following management measures are advised for these grassland habitats as shown in Figure 5, Appendix 2:

- The first cut will be undertaken in late February/early March each year. The grassland will be cut to a height of approximately 50mm and the cuttings removed from the Site or placed in a designated compost heap.
- For the second cut, timing is very important. The second cut will be undertaken once wildflowers have flowered and set seed (it typically takes 6-8 weeks from flowering to seed set). Setting of the seed is crucial to encourage a greater abundance of wildflowers. The second cut timing will likely vary slightly from year to year but it should generally be undertaken in late August/early September when conditions are dry. The cut should be undertaken with a scythe, strimmer or other suitable mowing equipment that can cut vegetation to a height of 50mm. Cuttings must be left in situ for 1-7 days to allow seed to shed. The cuttings must then be removed offsite or to a designated compost heap. Note: cuttings may be used as a top of mulch for the scrub.
- Small areas, selected at random of the long sward (10-20%) may be left long over winter to provide shelter for invertebrates.
- Following the second cut, the sward must be kept short throughout the winter, particularly given the milder winters and increased growing season lengths so further 'cut and collect' mowing is likely to be required from late September – November.
- No herbicides, fertilisers or commercially bought grass seed will be applied to the grassland at any time.
- Occasional areas of bare earth will be created annually using hand tools/scarifying (1-5% of the grassland area) to promote greater floral diversity.
- Paths through the long grass may be mown as regularly as is necessary.

### Woodland:

- Large areas of dense bramble will be reduced in size and spread with the aim of not removing bramble entirely but reducing its prevalence in order to allow more light to the woodland floor and encourage more abundant and diverse ground flora.
- At least 10 woodpiles will be created from deadwood/brash within the two other woodland; mixed areas (five woodpiles in each). Each woodpile should be a minimum of 2m length x 2m width x 1m height and located in both cool shaded areas in the woodland and at the woodland edge to create a variety of microclimates. A variety of large, medium and small diameter logs in the pile should be used as well as bark, dead leaves and twigs to create a 'holey' but closely interwoven structure that can be left in perpetuity to rot down.
- Young and semi mature trees in densely treed areas will be thinned to encourage more light and ground flora. Non-native species such as pine, sycamore and horse chestnut should be preferentially thinned, holly may also need to be thinned if producing a dense understorey. Thinning is best undertaken heavily in a few specific large (>30m diameter) areas to create more open areas (almost glades) and a greater diversity in light levels across the woodland. Thinning should also be undertaken in areas lacking any understorey.
- Encourage natural regeneration of broadleaved species in thinned areas and remove non-native seedlings/saplings. Not all non-native saplings need to be removed, particularly if no native regeneration is apparent. Key areas to target non-native sapling removal are where native regeneration (young trees) exist and are competing with non-native saplings close by, removing direct competition should encourage the native regeneration to thrive and succeed.
- Supplementary plant native shrubs in the understorey (in recently thinned areas) such as midland hawthorn *Crataegus laeviagata*, field maple, rowan, hazel. Plant whips from November – March inclusive with a cane, guard and tie. Mulch generously and water. Protect new planting from deer browsing with dead hedging from brash or bramble removal or alternatively fencing.

### Five Year Biodiversity Enhancement Plan

3.5.17 Following the management specification and guidance above, the Table below provides the timing of management actions over 5 years.

Habitat	Management Action and Timing				
	2025/2026	2027	2028	2029	2030
<b>Grassland</b>	First cut and collect in late February/ early March. Second cut in late August/early September. Remove arisings offsite or to compost pile.	Same as 2025/2026.	Same as 2025/2026.	Same as 2025/2026.	Same as 2025/2026.
<b>Woodland</b>	Thin tree canopy to increase light penetration. Remove dense areas of bramble. Create 10 deadwood piles.	Supplementary understorey planting within thinned areas. Protected by dead hedging/fencing.	Water whips in hot dry spells. Top up mulch.  Remove non-native saplings.	Water whips in hot dry spells. Top up mulch.	Remove cables/ties/guards from whips, replace any dead/dying individuals.  Remove non-native saplings.

### Annual Monitoring Checklist

3.5.18 The checklist below is devised as a quick annual check to be carried out and completed by the responsible Community Asset Manager to ensure that the recommended enhancements measures above have taken place. The items in the checklist below have been replicated in a separate Annual Monitoring excel spreadsheet for ease of completion.

#### Annual Monitoring Checklist for Carrowbreck House

Habitat	Management Action	Tick relevant column if completed				
		2025/2026	2027	2028	2029	2030
<b>Other neutral grassland and lowland meadow</b>	First cut and collect undertaken?					
	Second cut and collect undertaken?					
	Winter mowing undertaken?					
	1-5% bare ground created?					
<b>Woodland</b>	Thinning undertaken?					
	Minimum 10 woodpiles created?					

Habitat	Management Action	Tick relevant column if completed				
		2025/2026	2027	2028	2029	2030
	Supplementary understorey native shrub planting undertaken?					
	Shrub whip watering and maintenance undertaken?					

### Post-enhancement BNG Calculation and Map

- 3.5.21 The proposed enhancements will produce a BNG uplift of **20.40%** in Habitat Units over **10 years**. No uplift in Hedgerow Units will occur.
- 3.5.22 The uplift in BNG on the Site is derived solely from the woodland enhancement whereby the other woodland; mixed will be enhanced from poor to moderate condition.