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Bramford to Twinstead Reinforcement

Volume 6: Environmental Information

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Contents

1.	Introduction	1
1.1	Overview	1
1.2	Purpose of this Report and Definitions	1
1.3	Structure of this Report	1
2.	Methodology	3
2.1	Desk Study	3
2.2	Field Surveys	4
3.	Designated Ancient Woodland	6
3.1	Desk Study	6
3.2	Field Survey (Hintlesham Woods)	8
4.	Potential Ancient Woodland	10
4.1	Desk Study	10
4.2	Field Survey	10
5.	Ancient and Veteran Trees	20
5.1	Desk Study	20
5.2	Field Survey	20
6.	Conclusion	22
6.1	Designated Ancient Woodland	22
6.2	Potential Ancient Woodland	22
6.3	Ancient and Veteran Trees	22
	Annex A: Hintlesham Little Wood Botanical Survey Results	23
	Annex B: Botanical Survey Results	25

1. Introduction

1.1 Overview

- 1.1.1 National Grid Electricity Transmission plc (here on referred to as National Grid) is making an application for development consent to reinforce the transmission network between Bramford Substation in Suffolk, and Twinstead Tee in Essex. The Bramford to Twinstead Reinforcement ('the project') would be achieved by the construction and operation of a new electricity transmission line over a distance of approximately 29km (18 miles), the majority of which would follow the general alignment of the existing overhead line network.
- 1.1.2 This appendix has been produced to support the application for development consent and the accompanying Environmental Statement (ES) under the Planning Act 2008.

1.2 Purpose of this Report and Definitions

- 1.2.1 This appendix report sets out baseline information on ancient woodland, areas of potential ancient woodland, veteran trees and ancient trees within and adjacent to the Order Limits, gathered from desk study and field surveys.
- 1.2.2 The Standing Advice 'Ancient Woodland, Ancient Trees and Veteran Trees: protecting them from development' (Natural England and the Forestry Commission, 2022) defines Ancient Woodland as '*any area that's been wooded continuously since at least 1600 AD*'. It includes:
- Ancient Semi-Natural Woodland (ASNW) – mainly made up of trees and shrubs native to the site, usually arising from natural regeneration; and
 - Plantations on Ancient Woodland Sites (PAWS) – replanted with conifer or broadleaved trees that retain ancient woodland features, such as undisturbed soil, ground flora and fungi.
- 1.2.3 Natural England maintains an Ancient Woodland Inventory (AWI), a dataset which records information about Ancient Woodland in England. The AWI comprises woodland sites which are a minimum of two hectares in extent on the Ordnance Survey's First Series 1:25,000 maps.
- 1.2.4 This report identifies potential ancient woodland within the study area, which is defined as woodland that has been identified through desktop and / or field surveys and that correspond to the definition of designated Ancient Woodland in the Standing Advice and is not on the Ancient Woodland Inventory.

1.3 Structure of this Report

- 1.3.1 The report is structured as summarised in Table 1.1.

Table 1.1 – Structure of this Report

Chapter	Content
1: Introduction	This section introduces the purpose for this report and provides the definition for Ancient Woodland and potential ancient woodland.
2: Methodology	This section describes the study area used for the assessment. It also describes the desk study and field surveys to identify potential ancient woodland and ancient and veteran trees on the project.
3: Designated Ancient Woodland	This section describes the designated Ancient Woodland found on the Ancient Woodland Inventory. It also described Hintlesham Woods in more detail as the only area of designated Ancient Woodland within the Order Limits.
4: Potential Ancient Woodland	This section describes the desk study and field surveys undertaken to identify potential ancient woodland that is not listed on the Ancient Woodland Inventory. It outlines the survey results and concludes whether areas of woodland within and adjacent to the Order Limits are likely to be of ancient origin.
5: Ancient and Veteran Trees	This section describes the findings of the desk study and field survey in relation to ancient and veteran trees.
6: Conclusion	This section sets out the conclusion of the report including confirmation as to which potential ancient woodland are likely to be of ancient origin for consideration within the assessment.
Annex A: Hintlesham Little Wood Botanical Survey Results	This annex presents the results of the Hintlesham Little Wood botanical survey.
Annex B: Botanical Survey Results	This annex presents the results of the botanical surveys.

2. Methodology

2.1 Desk Study

2.1.1 This chapter sets out the methodology used to identify Ancient Woodland, potential ancient woodland, ancient trees and veteran trees that could be affected by the project. A desk study was undertaken using a 50m study area around the Order Limits. 50m is the accepted distance at which potential impacts on ecological receptors, including Ancient Woodland and ancient and veteran trees, can occur resulting from construction dust (Institute of Air Quality Management (IAQM), 2014).

2.1.2 AWI sites within 50m of the Order Limits were identified using the Natural England database (Natural England, 2022).

2.1.3 Potential ancient woodland within the Order Limits and up to 50m from it were identified using the following criteria:

- Criteria 1: areas of woodland identified on the following historical maps that appear to have had continual woodland cover since:
 - First edition Ordnance Survey (OS) Six Inch map series 1888-1913 (National Library of Scotland, 2022);
 - Tithe maps (1840s) (Suffolk County Council, 2023); The map of Essex (Chapman and Andre, 1777 at Suffolk County Council, 2023);
 - Survey of the parish of Hintlesham for Nicholas Timperley IV (Wright, 1595 at Suffolk County Council, 2023); and
 - Map of the Estate of the Honourable Richard Powys Esq. (Anon., 1721 at Suffolk County Council, 2023).
- Criteria 2: areas of existing woodland within or connected to Local Wildlife Sites (LoWS) in Essex designated under criteria HC1 (AW Sites). *'Replanted ancient woodland sites in Essex will only be excluded if the intensity and duration of that replanting has totally and seemingly irreversibly effaced all the ecological interest of the site. This is likely to only apply to conifer plantations'* (Essex Local Wildlife Sites Partnership, 2016);
- Criteria 3: areas of existing woodland within or connected to County Wildlife Sites (CWS) in Suffolk designated under criteria 4.1,1 which states that *'Ancient woodland with predominantly native broadleaf trees and/or; [...] historical records qualify even where they have been replanted with conifers'* (Suffolk Biodiversity Information Service (SBIS), 2022a); and
- Criteria 4: areas of existing woodland within the study area that are directly adjacent or are connected to an AW site via another woodland habitat or a hedgerow.

2.1.4 A minimum area of 0.25ha was set for the identification of potential ancient woodland. This is consistent with the approach taken in McKernan and Goldberg (2011), who undertook a Natural England review of the AWI in south-east England.

2.1.5 Veteran and ancient trees were identified using information supplied by SBIS in June 2022, Essex Wildlife Trust in 2021 and the Woodland Trust's Ancient Tree Inventory (ATI).

2.2 Field Surveys

Habitat Surveys

UK Habitat Classification Survey

- 2.2.1 A UK Habitat Classification (UKHab) survey in accordance with The UKHab Classification User Manual Version 1.1 (Butcher *et al.*, 2020) was undertaken within the Order Limits that intersect with Hintlesham Woods Site of Special Scientific Interest (SSSI) plus a 50m survey area comprising all contiguous woodland. All potential ancient woodland within or contiguous to the Order Limits were also surveyed. Mapping was at the fine scale minimum mapping unit i.e. 25m² polygons.
- 2.2.2 Dominant and notable plant species were recorded, with plant abundance categorised using the DAFOR scale; Dominant (D), Abundant (A), Frequent (F), Occasional (O) and Rare (R). Botanical taxonomic nomenclature follows that of the New Flora of the British Isles; Fourth Edition (Stace, 2019).
- 2.2.3 The survey included noting whether Ancient Woodland Indicator species (Rose, 2006) were present and additional notes made of any archaeological and historical management field evidence indicative of ancient origin, including:
- Banks and ditches at the edge or within the woodland;
 - Pits, humps, bumps and lines (indicative of former charcoal production, mine pits, ore roasting hearths, furnaces etc.);
 - Gaps in woodland cover (e.g. ridge and furrow marks); and
 - Evidence of past coppicing and pollarding.
- 2.2.4 Each habitat was assessed on their condition using the criteria set out in the Natural England (2021b) Biodiversity Metric 3.0 Guidance that was current at the time of survey. The v3.1 criteria was later applied to the data collected and, where necessary, a precautionary approach used to define condition. Habitat condition is a score based on the quality of the habitat, judged against the perceived ecological optimum state for that particular habitat.

National Vegetation Classification Survey

- 2.2.5 Where the UKHab survey identified ancient woodland features within a potential ancient woodland site (PoAWS), a more detailed botanical investigation was conducted. Woodlands were surveyed using the National Vegetation Classification (NVC) methodology (Rodwell *et al.*, 1998 Hall *et al.*, 2004 and Rodwell, 2006). The NVC survey took place during the spring, the optimal time for NVC survey of woodland habitats.
- 2.2.6 Woodland habitats were sampled with the use of up to five 5m x 5m quadrats for the ground layer and a 10-15m area around each ground layer sample for the trees and shrubs (Hall *et al.*, 2004). Within each sample, a quantitative measure of the abundance or cover of every species was made using the Domin scale (Table 2.1). A measure of frequency of occurrence of each species was provided by the number of quadrats in which it was encountered. Characteristic species which occur throughout are described as constants.
- 2.2.7 Interpretation of the NVC survey results was informed by the UK Centre for Ecology and Hydrology's (CEH) Tablefit programme (UK CEH, 2016).

Table 2.1 – Domin Scale

Domin Scale	Range	Domin Scale	Range
10	91-100	5	11-25
9	76-90	4	5-10
8	51-75	3	1-4
7	34-50	2	<1
6	26-33	1	<1

Arboriculture Survey

- 2.2.8 The arboricultural survey comprised a walkover survey following British Standard 5837:2012 *Trees in relation to design, demolition and construction – Recommendations* (BS 5837:2012). The study area comprised the Order Limits and a buffer of up to 15m. This was based on the maximum radius for a root protect area outlined in BS 5837:2012. Only the arboricultural survey results relevant to Hintlesham Woods SSSI and areas identified as PoAWS are presented in this appendix. Additionally, consideration was given to the identification of ancient and veteran trees.
- 2.2.9 Further details on the arboricultural survey, including the methodology used, can be found in the Arboricultural Impact Assessment (**application document 5.10**).

Limitations

- 2.2.10 PoAWS6 was only surveyed in accordance with UKHab methodology due to access restrictions. However, this survey provided a detailed botanical list with physical landscape features also noted, allowing an informed conclusion on ancient woodland potential to be made.
- 2.2.11 PoAWS10 was surveyed in the main, to the east side of the existing overhead line wayleave with a reduced survey area to the west. This was due to access restrictions and fencing that could not be physically crossed by surveyors. However, sufficient information was collected to the east and north to enable a robust conclusion on likelihood of ancient origin.
- 2.2.12 BS 5837:2012 provides an approach to assessing trees in relation to design, demolition and construction. The methodology may be applied to trees and tree groups in any setting and is a measure of the constraint to development. However, it does not capture the interactions between trees and other species of plants and animals or with the environment, particularly soils. In this way, the sub-set of information provided by BS 5837:2012 is secondary to the more holistic ecological assessment applied to woodland habitats, particularly Ancient Woodland and to potential ancient woodland. For PoAWS the species and age of trees are less likely to provide evidence of long establishment than the presence of species in the herb layer and whilst that association may be recorded in the arboricultural survey field notes it does not factor in the quality categorisation of BS 5837:2012.

3. Designated Ancient Woodland

3.1 Desk Study

3.1.1 Hintlesham Little Wood is located within the Order Limits (Table 3.1).

3.1.2 There are twelve additional AWI sites located on the immediate boundary of the Order Limits (Table 3.1). All AWI have an additional nature conservation designation i.e. SSSI, LoWS, or CWS. There are no further AWI sites within the 50m study area. All AWI sites within the study area are shown in Figure 7.4.1: Ancient Woodland and Veteran Trees (**application document 6.4**).

Table 3.1 – Ancient Woodland Inventory Sites Located Within or Immediately Adjacent to the Order Limits

Project Section	AWI Site	Site ID Number	Woodland Type	Designated Site Status	Location Relative to Order Limits
A/B	Hintlesham Woods: Hintlesham Little Wood Hintlesham Great Wood	1117096	ASNW	SSSI	Within Adjacent
A/B	Ramsey Wood	1411366	ASNW	SSSI	Adjacent
A/B	Keeble’s Grove/ Wolves Wood	1117088	ASNW	SSSI	Adjacent
A/B	Tom’s/Broad oak Wood	1117090	PAWS	CWS	Adjacent
D	Millfield Wood – North	1116957	ASNW	CWS	Adjacent
D	Millfield Wood – South	1411358	ASNW	CWS	Adjacent
E	Broom Hill Wood	1116953	ASNW	CWS	Adjacent
E	Bushy Park Wood	1411357	ASNW	CWS	Adjacent
F	Leadenhall Wood	1411352	ASNW	CWS	Adjacent
H	Butler’s Wood	1116843	ASNW	LoWS	Adjacent
H	Waldegrave Wood	1420162	ASNW	LoWS	Adjacent

Hintlesham Woods SSSI

SSSI Citation

3.1.3 Hintlesham Woods SSSI comprises multiple woodland stands including five SSSI Units; Wolves Wood (Unit 1), Keeble’s Grove (Unit 2), Ramsey Wood (Unit 3), southwest of Ramsey Wood (Unit 4) and Hintlesham Great Wood (Unit 5) see Figure 7.1.8: Proposed Works Around Hintlesham Woods (**application document 7.4**). Unit 5 is split into Hintlesham Great Wood to the east and Hintlesham Little Wood to the west.

3.1.4 The Hintlesham Woods SSSI citation (Natural England, 1986) states that:

‘...these woods are one of the largest remaining areas of ancient coppice-with-standards woodland in Suffolk. Historical and archaeological evidence show the woods to have been in existence at least since the 12th century. Ramsey Wood is an intact ancient wood,

linked to Hintlesham Wood by secondary woodland established between the 16th and 19th centuries.

The woods lie on a boulder clay plateau overlain in places by glacial sands and drift. They contain a range of tree communities reflecting the variation in soil type and drainage. Acid pedunculate oak-hazel-ash woodland occurs extensively on light boulder clay, grading into wet ash-maple woodland on heavier, slightly calcareous soils. There are in addition, examples of pedunculate oak-hornbeam and maple-ashlime woodland with various types of elm woodland, both invasive and local in origin. Secondary woodland consists chiefly of sycamore and sweet chestnut with some spruce, and trees that have spread from primary woodland. Keebles Grove in marked contrast, consists of wet ash-maple coppice-with-standards.

Mature standard trees are predominantly of oak with some ash and birch. The birch tends to be rather short-lived and is present mainly as maiden poles which have grown up since coppicing ceased about 70 years ago. Large wild cherry, hornbeam and small-leaved lime trees are unusually frequent in these woods and in wetter areas, field maple, aspen, willow (*Salix caprea*) and alder are common. The coppice layer consists mainly of ash, silver birch and hazel with areas of field maple, hornbeam, small-leaved lime, elm and oak. Beneath, are a variety of shrubs which are particularly abundant on heavy boulder clay soils amongst the more notable species are Wild Crab Apple (*Malus sylvestris*), Spindle (*Euonymus europaeus*), Buckthorn (*Rhamnus catharticus*), Alder Buckthorn (*Frangula alnus*), Midland Hawthorn (*Crataegus laevigata*) and the uncommon Wild Service Tree (*Sorbus torminalis*).

The ground flora is dominated by bramble with patches of Dog's Mercury (*Mercurialis perennis*), Bluebell (*Hyacinthoides non-scripta*) and Bracken (*Pteridium aquilinum*). Other plants occurring frequently throughout the woods include Enchanter's Nightshade (*Circaea lutetiana*), Primrose (*Primula vulgaris*), Wood Sorrel (*Oxalis acetosella*) and Wood Anemone (*Anemone nemorosa*).

There is a large colony of Green Helleborine (*Helleborus viridus*) in Hintlesham Woods and other notable species include the fern (*Polypodium australe*), Violet Helleborine (*Epipactis purpurata*), Bird's-nest Orchid (*Neottia nidus-avis*) Wood Spurge (*Euphorbia amygdaloides*) and Herb Paris (*Paris quadrifolia*).

Many of the rides are densely shaded and overgrown by Bramble. In wet areas, particularly where light penetrates, are a number of characteristic wet woodland species including Meadowsweet (*Filipendula ulmaria*), Pendulous Sedge (*Carex pendula*), Bittersweet (*Solanum dulcamara*) and Brooklime (*Veronica beccabunga*).

A variety of birds breed in these woods, encouraged by the recent resumption of coppicing in Wolves Wood. Species include Woodcock, Nightingale, Tawny Owl, Nuthatch and Whitethroat'.

- 3.1.5 Hintlesham Woods SSSI was last assessed on its condition in 2022 for Unit 1 (Wolves Wood), in 2011 for Unit 2 (Keeble's Grove), in 2012 for Unit 4 (southwest Ramsey Wood) and in 2021 for Units 3 and 5 (Ramsey Wood and the Hintlesham Great Wood) (Natural England, 2022a). Units 3 and 5 were assessed as being of 'favourable' condition and Units 1 and 2 was assessed as having 'unfavourable – no change' condition. The unfavourable condition assessment at Unit 1 was due to not meeting the target British Trust for Ornithology bird assemblage score. The unfavourable condition assessment at Unit 2 was due to deer grazing pressure resulting in reduced levels of habitat regeneration. Unit 4 was assessed as having 'unfavourable – recovering' condition due to deer management.

Ancient Woodland Extent

- 3.1.6 The extent of Hintlesham Woods was substantially different in the centuries prior to the first edition OS map in 1886. Maps from Anon. (1721) and Wright (1595) held on Suffolk Council's Historic Environment Record (HER) show the woodland covering a much larger area than the present day, as shown on ES Figure 7.4.2: Hintlesham Woods - Non-designated Archaeological Assets (**application document 6.4**). By the time of the first edition OS map the extent the woodland area was greatly reduced.
- 3.1.7 The current woodland extent is greater than that shown on the AWI, particularly along the eastern boundary of Ramsey Wood, which at that time was more of an extension of Hintlesham Little Wood and scarcely linked to the bulk of Ramsey Wood. It is unclear why this area was omitted from the AWI.

3.2 Field Survey (Hintlesham Woods)

UKHab Survey

- 3.2.1 A UKHab Survey of Hintlesham Woods was undertaken on 28 September 2021 and 05 May 2022. The woodland within the Order Limits, which lies directly beneath the existing 400kV overhead lines, was a 20m wide strip dominated by silver birch (*Betula pendula*) and willow (*Salix*) spp. regrowth to 4m high, with some areas of tall herbaceous vegetation. This formed approximately 50% of the vegetation within the Order Limits boundary and is the result of regular maintenance cutting to prevent interference with the power lines overhead. Dead wood was abundant due to past felling.
- 3.2.2 A noticeably different ground flora, with fewer ancient woodland indicators and more ruderal species was present in this location compared to the wider woodland. This included bramble (A) (*Rubus fruticosus* agg.), marsh thistle (F) (*Cirsium palustre*), wild teasel (*Dipsacus fullonum*), perforated St John's-wort (O) (*Hypericum perforatum*), wood sedge (O), dog's mercury (O), hogweed (O) (*Heracleum sphondylium*) and enchanter's nightshade (R) (*Circaea lutetiana*), bristly oxtongue (R) (*Helminthotheca echioides*), bird's-foot-trefoil (R) (*Lotus corniculatus*), common ragwort (R) (*Senecio jacobaea*), water mint (R) (*Mentha aquatica*), wood spurge (R) and creeping thistle (R) (*Cirsium arvense*).
- 3.2.3 The south-western side of the cleared strip was almost indistinguishable from the main woodland, transitioning immediately after a bank at the edge of the regrowth. The north-eastern side, separated from the regrowth by a wooden fence, was dominated by blackthorn (*Prunus spinosa*) growing in often dense stands with occasional ash and silver birch growing to 8m high.
- 3.2.4 The woodland to the north and south of the cleared strip was dominated by pedunculate oak and ash (*Fraxinus excelsior*) in the canopy, with a hazel (*Corylus avellana*) understorey of which coppiced individuals were occasional. A variety of ancient woodland ground flora indicator species were identified including dog's mercury (F), wood millet (O) (*Milium effusum*), wood sedge (*Carex sylvatica*), wood spurge and wood speedwell (*Veronica montana*).
- 3.2.5 Both the area under the pylons and the wider woodland were identified under UKHab survey methodology as Other Lowland Mixed Deciduous Woodland (w1f7), but while the area beneath the existing overhead lines was assessed to be moderate in condition, the wider woodland was in good condition.

NVC Survey

- 3.2.6 A detailed NVC survey was undertaken on 05 May 2022 in Hintlesham Little Wood and Ramsey Wood. The results of this are shown in ES Figure 7.4.1: Ancient Woodland and Veteran Trees (**application document 6.4**) and detailed in Annex A: Hintlesham Little Wood Botanical Survey Results. An interpretation of these results indicates an affinity with NVC category W8 *Fraxinus excelsior* – *Acer campestre* – *Mercurialis perennis* woodland.
- 3.2.7 The full species list can be found in Annex A: Hintlesham Little Wood Botanical Survey Results. Ancient woodland indicator species were recorded throughout the quadrats. Those in most abundance were field maple, wood anemone, dog's mercury, and early dog violet. Other species recorded in the woodland but located outside of the quadrats comprised:
- Canopy: Scot's pine (*Pinus sylvestris*) and larch (*Larix* sp.);
 - Understorey: hawthorn, holly and large-leaved lime (*Tilia platyphyllos*); and
 - Ground layer: wood spurge, yellow pimpernel (*Lysimachia nemorum*), common figwort (*Scrophularia nodosa*), broad buckler-fern (*Dryopteris dilatata*), wild strawberry (*Fragaria vesca*), soft rush (*Juncus effusus*), green hellebore, greater stitchwort (*Stellaria holostea*), bugle (*Ajuga reptans*), bearded couch (*Elymus caninus*) and primrose.
- 3.2.8 The result from Hintlesham Little Wood is likely reflective of that found within the connected Hintlesham Great Wood with variation associated with the areas identified as potential ancient woodland which are discussed in Chapter 4. No NVC survey was undertaken in the existing wayleave due to the dense vegetation making it inaccessible.

Arboriculture

- 3.2.9 The arboricultural walkover survey at Hintlesham Woods provided grouped tree data and determined it to be a high-quality woodland. The collective assessment of the woodland as high quality does not mean that all trees are high quality specimens.
- 3.2.10 The area of survey was of high canopy woodland and areas of coppice with standard trees. The principal species of canopy woodland were oak and ash with a diverse mixture of native woodland trees and shrub species. Ash dieback was present and progressing, but the intimate mixture of tree species was such that continuity of the woodland high canopy and mosaic of understorey species could be managed.
- 3.2.11 A further survey was undertaken to understand the density of high-quality specimen trees. Most of these trees were oak and were scattered naturalistically but relatively evenly throughout the Order Limits. Further details can be found in the Arboricultural Impact Assessment (**application document 5.10**)

4. Potential Ancient Woodland

4.1 Desk Study

4.1.1 Eleven PoAWS were identified during the desk-based study, see Table 4.1 and Figure 7.4.1: Ancient Woodland and Veteran Trees (**application document 6.4**). Of these sites, seven are located within the Order Limits, two are immediately adjacent and a further two, although located beyond the Order Limits are contiguous with woodland within the Order Limits. The selection criteria relevant for each of these sites is given in Table 4.1.

Table 4.1 – Potential Ancient Woodland

ID	Project Section	Site Name	Site Status	Central OS Location	Relative Location to Order Limits	Selection Criteria			
						1	2	3	4
PoAWS1	A/B	-	none	608800,244700	Within	X	-	-	-
PoAWS2	A/B	Square Pastures Covert	none	607700,244000	Within	X	-	-	-
PoAWS3	A/B	-	none	607600,243800	Within	X	-	-	-
PoAWS4	A/B	Hintlesham Woods	SSSI	606600,243200	Within	X	-	-	X
PoAWS5	A/B	-	none	606400,243500	Within (contiguous with PoAWS4)	X	-	-	X
PoAWS6	E	The Dollops	CWS	598900,239100	Within	X	-	X	-
PoAWS7	E	Alder Carr	none	596800,238200	Immediately adjacent	X	-	-	-
PoAWS8	F	Ash Ground	none	592200,237100	Within 50m study area, but contiguous woodland habitat lies within the Order Limits	X	-	-	X
PoAWS9	G	Alphamstone Complex	LoWS	587300,235400	Beyond 50m study area, but contiguous woodland habitat lies within the Order Limits	X	-	-	X
PoAWS10	G	Ansell's Grove	LoWS	587000,236100	Within	X	X	-	-
PoAWS11	F	Chestnut Grove	none	592500,236800	Within	X	-	-	-

4.2 Field Survey

4.2.1 Each PoAWS is described in the following text and a summary is presented in Table 4.2.

Table 4.2 - Summary of PoAWS Surveys

Reference and Date of Survey	Ancient or Veteran Trees present?	Woodland Archaeology	Woodland Indicator Species (Rose, 2006) and Frequency (DAFOR)		Ancient Woodland
			Trees and Shrubs	Ground Flora	
PoAWS1 19/04/2022	Veteran	No	Field maple (F)	Ramsons (A), Wood anemone (F), Wood sedge (R), Bluebell (R), Dog's mercury (O), Wood forget-me-not (R), Primrose (R)	Unlikely
PoAWS2 06/04/2022	None	Old Coppice or Pollarding. Enclosed by ditches.	Hornbeam (<i>Carpinus betulus</i>) (F), Holly (F)	Dog's mercury (D)	Unlikely
PoAWS3 07/04/2022	None	Old Coppice or Pollarding Ditch boundary	Hornbeam (R), Holly (O) Wild Cherry (F)	Wood anemone (F), Giant Fescue (R), Dog's mercury (A), Primrose (R)	Unlikely
PoAWS4 05/04/2022 and 05/05/2022	None	Old Coppice or Pollarding	Field maple (O), Wild Apple (<i>Malus sylvestris</i>) (O)	Moschatel (R), Ramsons (R), Wood anemone (O), Pale sedge (<i>Carex pallescens</i>) (R), Pendulous sedge (<i>Carex pendula</i>) (R), Remote sedge (<i>Carex remota</i>) (O), Wood sedge (<i>Carex sylvatica</i>) (O), Green hellebore (<i>Helleborus viridis</i>) (R), Bluebell (<i>Hyacinthoides non-scripta</i>) (F), Hairy St.John's-wort (<i>Hypericum hirsutum</i>) (F), Yellow archangel (R), Hairy wood-rush (<i>Luzula pilosa</i>) (R), Great wood-rush (<i>Luzula sylvatica</i>) (R), Dog's mercury (A), Wood forget-me-not (F), Wood sorrel (<i>Oxalis acetosella</i>) (R), Barren strawberry (R), Primrose (R), Black bryony (<i>Tamus communis</i>) (R), Wood speedwell (<i>Veronica montana</i>) (R), Early dog violet (<i>Viola reichenbachiana</i>) (O)	Likely
PoAWS5 06/04/2022 and 05/05/2022	None	Old Coppice or Pollarding	Holly (O), Field maple (F), Spindle (<i>Euonymus europaeus</i>) (R)	Dog's mercury (R), Primrose (R), Wood sedge (O), Wood millet (R), Wood forget-me-not (O), Black bryony (O), Goldilocks buttercup (R), Early dog violet (R).	Likely

Reference and Date of Survey	Ancient or Veteran Trees present?	Woodland Archaeology	Woodland Indicator Species (Rose, 2006) and Frequency (DAFOR)		Ancient Woodland
			Trees and Shrubs	Ground Flora	
PoAWS6 06/09/2022	None	None (Coppicing evidence but recent)	Wild Cherry	Dog's mercury (LA), Bluebell (LA), Yellow archangel (R)	Unlikely
PoAWS7 16/06/2022	None	Old Coppice or Pollarding Ditch boundary	Holly (R), Wild Cherry (O)	Wood speedwell (R), Yellow pimpernel (R)	Unlikely
PoAWS8 16/06/2022	None	None	Wild Cherry (R)	Moschatel (R), Wood anemone (O), Giant Fescue (R), Bluebell (R), Yellow archangel (R), Dog's mercury (A), Wood millet (R), Greater chickweed (<i>Stellaria neglecta</i>)(R), Wood speedwell (R)	Unlikely
PoAWS9 19/04/2022	Veteran	Old Coppice or Pollarding	Field maple (O), Alder buckthorn (<i>Frangula alnus</i>) (R), Redcurrant (<i>Ribes rubrum</i>) (R)	Hairy brome (<i>Bromopsis ramosa</i>) (R), Opp-lvd golden-saxifrage (<i>Chrysosplenium oppos.</i>) (R), Scaly male-fern (<i>Dryopteris affinis</i>) (R), Bluebell (O), Yellow archangel (R), Dog's mercury (D), Primrose (R), Wood speedwell (O)	Unlikely
PoAWS10 04/05/2022	Ancient	Old Coppice or Pollarding	Field maple (O), Hornbeam (O), Holly (O), Wild Cherry (O), Redcurrant (A)	Moschatel (O), Ramsons (F), Wood anemone (O), Remote sedge (R), Wood sedge (R), Opp-lvd golden-saxifrage (<i>Chrysosplenium oppositifolium</i>) (O), Scaly male-fern (R), Bluebell (R), Yellow archangel (O), Dog's mercury (A), Three-veined sandwort (O), Primrose (R), Wood speedwell (R).	Likely
PoAWS11 04/05/2022	None	Old Coppice or Pollarding	Field maple (R), Hornbeam (F), Holly (F), Redcurrant (<i>Ribes rubrum</i>) (O)	Remote sedge (R), Bluebell (D), Dog's mercury (O), Three-veined sandwort (O), Wood speedwell (O)	Unlikely

PoAWS1

Habitat

- 4.2.2 The woodland was on a slope with a river at its base. Fallen deadwood was found. The woodland was a mix of nutrient enriched areas with little ground flora diversity and other areas that remained nutrient poor with a range of ancient woodland indicator species.
- 4.2.3 The habitat was identified to be lowland mixed deciduous woodland (w1f) in moderate condition, with a smaller area of other woodland; broadleaved (w1g) in poor condition, due to being a plantation of white poplar (*Populus alba*). Species present included elder, (*Sambucus nigra*), alder, blackthorn, willow, ash, field maple, honeysuckle (*Lonicera periclymenum*), common nettle, ground ivy, dog's mercury, hedge woundwort (*Stachys sylvatica*), traveller's joy (*Clematis vitalba*), bramble, pedunculate oak, hazel, wood avens (*Geum urbanum*), creeping thistle and common hogweed. The site held a ground flora of common species and those indicative of disturbed ground or impacted by nutrient enrichment.
- 4.2.4 Eight ancient woodland indicator species were identified (see Table 4.2) but with no evidence of woodland archaeology. Although recorded on the 1886 OS map this woodland is unlikely to be of ancient origin but a result of riverside woodland habitat being allowed to develop due to its unsuitability for agriculture.

Arboriculture

- 4.2.5 The arboricultural survey identified the trees to be of very low quality.

PoAWS2 – Square Pasture Covert

Habitat

- 4.2.6 This woodland was a linear strip, part of the larger Square Pastures Covert to the north. The UKHab survey identified this woodland as Other Lowland mixed deciduous woodland (w1f7) of moderate condition. Clearance of vegetation where an existing electricity pylon was located within the woodland had not resulted in a significantly different woodland species composition.
- 4.2.7 The woodland comprised semi-mature oak, young lime trees (potentially coppiced), sycamore (*Acer pseudoplatanus*), hornbeam and horse chestnut (*Aesculus hippocastanum*). The understorey comprised hawthorn, holly, and elm. The ground flora was dominated by dog's mercury with common dog violet (R) (*Viola riviniana*), lords and ladies (O), false wood brome (O), but common nettle was locally abundant, with garlic mustard (O), heavy ivy cover, cleavers, hedge bedstraw and cow parsley (*Anthriscus sylvestris*).
- 4.2.8 Although the woodland had some woodland archaeology in the form of boundary ditches and evidence of historic coppicing, the few ancient woodland indicators recorded (see Table 4.2) and naming of the woodland i.e. 'covert' which relates to hunting, suggests that this woodland is not of ancient origin and was created for hunting purposes relating to the adjacent Hintlesham Hall.

Arboriculture

- 4.2.9 PoAWS2 lies outside of the 15m arboricultural survey study area and was not surveyed.

PoAWS3

Habitat

- 4.2.10 The UKHab Survey of this PoAWS identified Other Lowland mixed deciduous woodland (w1f7) of moderate condition. There was an area of young and semi-mature trees where the canopy comprised coppiced lime (*Tilia* sp.) species, oak, sycamore, red oak (*Quercus rubra*), hornbeam, cherry (*Prunus avium*), Scot's pine and Leyland Cypress (*Cupressus x leylandii*). The understorey contained holly, hazel and hawthorn. On the northern border of the woodland there was a line of hazel and hawthorn indicating an old hedgerow. The ground flora comprised abundant dog's mercury, wood anemone (F) wood avens (R), lords-and-ladies (R), lesser celandine (O), ground ivy (R), primrose (R), chickweed (R) (*Stellaria media*), wood false brome (R), giant fescue (R) (*Festuca gigantea*). Nettle and cleavers were locally abundant and bramble frequent in woodland clearing to the east.
- 4.2.11 Seven ancient woodland indicators were identified (see Table 4.2) and although this woodland is mapped on the 1886 OS Map it is unlikely to be of ancient origin with purpose likely tied to the adjacent Square Pastures Covert and has been planted with non-native ornamental trees.

Arboriculture

- 4.2.12 The arboricultural survey identified the woodland group as being of moderate quality.

PoAWS4 – Hintlesham Woods

Habitats

- 4.2.13 PoAWS4 comprised two large linear areas; one within Ramsey Wood and one separating Hintlesham Little Wood and Hintlesham Great Wood (see ES Figure 7.4.1: Ancient Woodland and Veteran Trees (**application document 6.4**)). The part within Ramsey Wood appeared to have been planted in the 19th century, filling in the gap between Ramsey Wood and the north-western part of Hintlesham Woods. It comprised a small number of planted conifer tree species and birch with self-seeded ash. Ancient woodland indicators were scarcely present although there was abundant dog's mercury present in the ground flora. This infill woodland was categorised as Other Lowland mixed deciduous woodland (w1f7).
- 4.2.14 The eastern strip of PoAWS4 between Hintlesham Little Wood and Hintlesham Great Wood comprised a linear strip of historic coppicing through Hintlesham Woods which was likely to have been cleared in the 19th century to create a vista for the nearby Hintlesham Hall. The western side of the strip comprised an area of cleared woodland with bramble scrub present. Hawthorn and hazel scrub were also present with scattered ash, oak and silver birch trees and was categorised in the UKHab survey as Mixed scrub (h3h). The ground flora comprised primrose (A), barren strawberry (O), wood speedwell (O), ribwort plantain (F) (*Plantago lanceolata*), wood false-brome (F), creeping buttercup (F) (*Ranunculus repens*), common dog-violet (O), early dog-violet (O), dog's mercury (A), false oat-grass (O), cock's-foot (O) (*Dactylis glomerata*), lords-and-ladies (O), creeping cinquefoil (R) (*Potentilla reptans*), wood forget-me-not (R) (*Myosotis sylvatica*), spear thistle (R) (*Cirsium vulgare*) and bugle (O).
- 4.2.15 There was evidence of felled trees within the eastern part of the coppiced strip which transitioned into Other Lowland mixed deciduous woodland (w17f). The ground flora

supported low numbers of ancient indicator species including primrose, wood false-brome, dog's-mercury, lords-and-ladies and wood avens (see Table 4.2). Other species included creeping cinquefoil, soft rush and forget-me-not species and bramble. Emergent young scrub species were also dominant within the ground flora and comprised hawthorn, hazel and blackthorn. Young and semi-mature trees including sycamore and silver birch were also present.

- 4.2.16 A subsequent NVC survey was undertaken (see Annex B, Table B1) resulting in a clear affiliation to W8a *Fraxinus excelsior* – *Acer campestre* – *Mercurialis perennis*; *Primula vulgaris* – *Glechoma hederacea* sub-community sub-community. Other species recorded during the NVC but outside of the quadrats are presented in Table B2.
- 4.2.17 Although just one tree ancient woodland indicator was identified during the surveys, 22 ground flora ancient woodland indicators were recorded (see Table 4.2). The historic mapping (Suffolk HER) would strongly suggest that PoAW4 has ancient woodland origin with the habitat recorded on site exemplifying an area of pre-19th century vegetation clearance where the mature trees of that time have gone but the ground flora diversity has remained.

Arboriculture

- 4.2.18 The arboricultural survey identified this as high-quality woodland.

PoAWS5

Habitats

- 4.2.19 PoAWS5 was formed of a belt of trees following a footpath/track to Hintlesham Woods to the south. As the habitat was wider than 5m and would not be able to be returned to a stockproof barrier it is more consistent with woodland than hedgerow although this may have been its origin. A double line of trees planted on both sides of the path is likely to have formed the original access route through to the woodland, linking with areas of settlements and the wider arable landscape. The UKHab category recorded was Other Lowland mixed deciduous woodland (w1f7) of moderate condition.
- 4.2.20 The species present included frequent mature oak and field maple trees showing some evidence of historic coppicing. Scrub species were also present and included hawthorn, holly, elder, dog-rose and yew. Dog's mercury was abundant in the ground flora with primrose (O), common dog-violet (R), early dog-violet (R), red campion (R) (*Silene dioica*), herb Robert (R), cow parsley (A), cleavers (F), wood false-brome (F), broad leaved dock (F) (*Rumex obtusifolius*) and curled dock (F) (*Rumex crispus*), locally abundant bramble, wood sedge (O), early purple orchid (O), wood avens (O), wild strawberry (R) and Goldilocks buttercup (R) (*Ranunculus auricomus*). A comprehensive species list was also collected and this is presented in Annex B, Table B3. The ground flora had some ancient woodland indicator species but a high proportion of the vegetation was ruderal species and species indicative of nutrient enrichment.
- 4.2.21 The ten ancient woodland indicators identified, evidence of old coppice works and 1886 OS map indicate this habitat has ancient origin. A precautionary conclusion of likely ancient woodland is given.

Arboriculture

- 4.2.22 PoAWS5 extends northward from PoAWS4 but is separate from Ramsey Wood. It was part surveyed (where within 15m of the Order Limits) and is of moderate quality.

PoAWS6 - The Dollops CWS

Habitats

- 4.2.23 The area within the Order Limits comprised a steep sided valley, supporting Other Lowland mixed deciduous woodland (w1f7) of moderate to good condition on the slopes and wet woodland (w1d) which could not be accessed in the centre. The w1f7 woodland was dominated by pedunculate oak, with frequent downy birch and occasional silver birch. Coppiced hornbeam was abundant in places, together with some coppiced hazel and wild cherry. The ground flora included abundant bracken and bramble, with locally abundant bluebell. Other species included garlic mustard, common mouse-ear (*Cerastium fontanum*), dog's mercury, cow parsley, ground ivy, red campion and yellow archangel (*Lamium galeobdolon*). An earth bank was present, running north to south along the stream.
- 4.2.24 Although the CWS designation covering this area is for ancient woodland the field survey did not suggest woodland of ancient origin. Limited ancient woodland indicator species were found and the wet woodland present comprising birch species suggests self-seeded mature scrub around mature oaks that have remained in situ because of their position on a steep slope which is suboptimal for agricultural uses.

Arboriculture

- 4.2.25 The woodland was surveyed as a group arboricultural feature. The mature canopy and coppice understorey was identified as high quality.

PoAWS7 – Alder Carr

Habitats

- 4.2.26 The UKHab survey of PoAWS7 identified wet woodland (w1d) of moderate condition present with a ditch running along the northern boundary. The species present comprised alder (D) with hybrid poplar (O), willow sp. (O), oak (R) and wild cherry (O) in the canopy. The understorey comprised elder (D), hazel (O) and hawthorn (R). Nettle (D), cleavers (A), brooklime (O), cranesbill (O), herb Robert (R), creeping buttercup (F), soft rush (R) and yellow pimpernel (R) were also present in the ground flora.
- 4.2.27 The field survey identified a clear habitat of wet woodland but this is not likely to be of ancient origin due to the limited ancient woodland indicators present, and none of those typical of ancient wet woodlands e.g. opposite leaved golden saxifrage (*Chrysosplenium oppositifolium*).

Arboriculture

- 4.2.28 The arboricultural survey identified the wet woodland as moderate quality.

PoAWS8 – Ash Ground

Habitats

- 4.2.29 PoAWS8 supported a mosaic of wet woodland (w1d) habitats of moderate condition comprising willow carr with a stream flowing through the centre. The northern half of the woodland formed part of a woodland complex occupying a small and constrained stream valley. The vegetation was dominated by grey willow with ash (R) and hazel (O). The ground flora consisted of nettle (D), dog's mercury (A), floating sweet-grass (A) (*Glyceria fluitans*), cleavers (F), yellow archangel (O), lords-and-ladies (R), bluebell (O), lesser celandine (R), greater stitchwort (R) and moschatel (R) (*Adoxa moschatellina*). The central section was more open resembling a fen with dead bracken matter, marsh valerian (O) (*Valeriana dioica*), meadowsweet (O) (*Filipendula ulmaria*) and marsh thistle (O).
- 4.2.30 The slopes appeared to support transient W6 *Alnus glutinosa* – *Urtica dioica*/W8 *Fraxinus excelsior* – *Acer campestre* – *Mercurialis perennis* woodland with the bottom of the valley occupied by good quality W1 *Salix cinerea* – *Galium palustre* willow carr and fully developed W6 *Alnus glutinosa* – *Urtica dioica* woodland. A detailed botanical list is presented in Annex B, Table B4.
- 4.2.31 There was an area of permanently wet willow carr to the south, with visible upwelling of water and a permanent, small stream present. The NVC of this area is presented in Annex B, Table B5 which concludes with a poor fit to W6 *Alnus glutinosa* – *Urtica dioica* woodland.
- 4.2.32 The southern half of the woodland comprised well-developed alder woodland in a floodplain, with transition to more circum-neutral woodlands on the slopes. There was some visible flushing from the valley side in places which visibly influenced the vegetation giving rise to a W7 *Alnus glutinosa* – *Fraxinus excelsior* – *Lysimachia nemorum* /W6 *Alnus glutinosa* – *Urtica dioica* appearance. Some parts appeared to be drying-up resulting in a transition to W8 *Fraxinus excelsior* – *Acer campestre* – *Mercurialis perennis*. Annex A, Table A6 details the NVC survey undertaken at this location.
- 4.2.33 There is very high confidence in concluding that PoAWS8 is wet woodland habitat. While there were some ancient woodland indicators present, there was an absence of the ancient woodland indicators that have most affinity with wet woodland (e.g. sedge species and opposite-leaved golden saxifrage). Taken in conjunction with the absence of ancient and/or veteran trees or any woodland archaeology, this woodland habitat is unlikely to be of ancient origin.

Arboriculture

- 4.2.34 PoAWS8 lies outside of the 15m arboricultural survey study area and was not surveyed.

PoAWS9 – Alphamstone Complex LWS

Habitats

- 4.2.35 This habitat is no longer within the study area but is included for completeness.
- 4.2.36 PoAWS9 supported Alder woodland on floodplains (H91E0) (w1d5) with a stream running through the area. In the north-west side of the stream, alder was dominant. The understorey comprised elder, blackthorn and hazel. The ground flora was dominated by nettle with occasional fern and dog's mercury. To the south-east of the stream, the area

was much wetter with deep organic soils. The area was dominated by willow with open stands of lesser pond sedge (*Carex acutiformis*) and frequent giant horsetail (*Equisetum telmateia*).

- 4.2.37 The upper parts of the woodland supported either W8 *Fraxinus excelsior* – *Acer campestre* – *Mercurialis perennis* or transitional W6 *Alnus glutinosa* – *Urtica dioica*/W8 *Fraxinus excelsior* – *Acer campestre* – *Mercurialis perennis*. The bottom of the stream valley had a visible but shallow layer of 'peat'. The vegetation was typical of W6 *Alnus glutinosa*-*Urtica dioica* community, with visible transition to W8 *Fraxinus excelsior* – *Acer campestre* – *Mercurialis perennis* in its upper parts, typical for Suffolk and Essex. The NVC survey results are presented in Annex B, Table B6.
- 4.2.38 The woodland is considered as not likely to be ancient, based on historical disturbance of this area (in mid-20th century).

Arboriculture

- 4.2.39 The arboricultural survey captured only the woodland edge, which was of moderate quality.

PoAWS10 – Ansell’s Grove

Habitats

- 4.2.40 PoAWS10 supported a mosaic of woodland structures, all being Lowland mixed deciduous woodland (w1f) of moderate condition. Where the overhead line of the existing electricity infrastructure crossed the woodland, it appeared to have been recently felled. The remaining field layer was typical of NVC W10, with changing affinity to NVC W8 species on the lower slope.
- 4.2.41 The woodland habitat beyond the existing wayleave comprised ash (A) and oak (A) with locally abundant sweet chestnut (*Castanea sativa*), wild cherry (O), elm sp.(R), field maple (O) and hornbeam (O). The understorey comprised hazel (A), holly (O) and hawthorn (O). The ground flora consisted of bracken (F), bramble (F), bluebell (A), ramsoms (A), three-veined sandwort (R) (*Moehringia trinervia*), garlic mustard (O), red campion (R), wood avens (R) and locally abundant dog’s mercury and ground ivy.
- 4.2.42 The northern part of the woodland lay along the bottom of a valley, with a permanent stream and few man-made ponds. This part of the woodland had a less natural appearance and alder trees were present which had been coppiced in the past. There were some open patches with wetland vegetation. The slopes gradually transitioned into W8 woodland in the eastern part of the site and into W10 *Quercus robur* – *Pteridium aquilinum* – *Rubus fruticosus* woodland in the south-west, where the vegetation on the upper slopes and area above the valley phased into former coppice. The ground flora was relatively species-rich with patches dominated by bluebell and/or dog's mercury. The north-eastern part comprised W6 *Alnus glutinosa*-*Urtica dioica* woodland. NVC survey results are presented in Annex B, Tables B7 and B8.
- 4.2.43 The multiple ancient woodland indicator species, presence of ancient trees and evidence of historic coppicing (Table 4.2) suggests that this woodland could be of ancient origin.

Arboriculture

- 4.2.44 The arboriculture survey of the woodland identified moderate quality woodland.

PoAWS11 – Chestnut Grove

Habitats

- 4.2.45 The north-eastern side of the woodland identified the presence of UKHab category Other Lowland mixed deciduous woodland (w1f7). The site was dominated by sweet chestnut with open glades, and patches of dense leaf debris with little ground flora. Species included holly (F), field maple (R), silver birch (O), ash (R) and hawthorn (R). The ground flora was dominated by bluebell with nettle (F), garlic mustard (A), cleavers (F), alkanet (O) (*Pentaglottis sempervirens*), laurel (R) (*Prunus laurocerasus*), ground-ivy (R), foxglove (R) (*Digitalis purpurea*), bracken (R), broom (R) (*Cytisus scoparius*), three-veined sandwort (R), creeping buttercup (R), broad leaved dock (O), chickweed (R) and wild gooseberry (R) (*Ribes uva-crispa*). There was a pond to the south-east of the woodland. The ground-flora within the lowland mixed deciduous woodland was similar to that typical of W10 *Quercus robur* – *Pteridium aquilinum* – *Rubus fruticosus*, in line with remnants of uncoppiced W10 to the south of the stream running through the woodland. The stream valley and flushed slopes below the coppice to the south-west and appeared to be in transition to W6 *Alnus glutinosa* – *Urtica dioica* woodland with pockets of W1 *Salix cinerea* – *Galium palustre* willow carr. The results of the NVC survey is presented in Annex B, Table B9.
- 4.2.46 The south-western side of the woodland supported Wet woodland - Spring (w1d) habitat. The area comprised goat willow (A), grey willow (R) and hazel (O). The ground flora was dominated by common nettle with cleavers and rough meadow grass (A). Other species included herb Robert (A), bluebell (R), bulbous buttercup (R) (*Ranunculus bulbosus*), wood speedwell (R), lesser celandine (O), marsh thistle (O), Yorkshire fog (O), dog's mercury (R) and water mint (R). There was a belt of alder trees to the south of the wet woodland area acting as a margin to the adjacent grassland habitat to the south and included oak (O), hawthorn (R), holly (R), blackthorn, elder bramble and nettle. There was a pond within the wet woodland area. The wet woodland was flushed by a spring located at the bottom of the well-drained slope. This was relatively dense W6 *Alnus glutinosa* – *Urtica dioica* woodland, occasionally grazed by cattle, with some open glades around the permanently soaked areas (see Annex B, Table B10 for a detailed species list).
- 4.2.47 Although historic coppicing was identified at the site this is not believed to be ancient and no evidence of woodland archaeology was identified. 'Grove' when used in wood names may indicate a more recently planted woodland particularly where the site is associated with a large house and/or cultivated land. As such, the woodland is not likely to be of ancient woodland origin.

Arboriculture

- 4.2.48 The arboricultural survey captured only the woodland edge, which was of moderate quality.

5. Ancient and Veteran Trees

5.1 Desk Study

5.1.1 The presence of veteran or ancient trees on the Woodland Trust's ATI within 15m of the Order Limits was reviewed on 13 February 2023. The following trees were identified:

- Veteran oak tree with a girth of 6.35m on a road near Hintlesham Hall (TM 08294 43572 - Section AB – likely to be coincident with VT_01 in Table 5.1);
- Veteran pedunculate oak with a girth of 4.5m south of the A1071 (TM 06524 43859 – Section AB – likely to be coincident with VT_03 in Table 5.1);
- Veteran tree (undefined species) with a girth of 5.73m in Hintlesham Great Wood (TM 06777 42877 – Section AB); and
- Ancient pedunculate oak tree with a girth of 4.5m south of Assington (TL93704 37027 – Section F).

5.1.2 Four veteran trees were identified in the study area were identified in data received from SBIS. These are shown in ES Figure 7.4.1: Ancient Woodland and Veteran Trees (**application document 6.4**) and detailed in Table 5.1. All four trees are located beyond the Order Limits but within the wider 15m study area.

Table 5.1 – Veteran Tree Desk Study Results

Tree ID	Project Section	Species	Details
VT_01	A/B	Pedunculate oak (<i>Quercus robur</i>)	Maiden tree. Measured girth: 5.28m
VT_02	A/B	Pedunculate oak	Maiden tree. Measured girth: 6.35m
VT_03	A/B	Pedunculate oak	Maiden tree. Measured girth: 4.5m
VT_04	F	Elm	Measured girth: 1.9m

5.2 Field Survey

5.2.1 The full Arboricultural Survey results can be found in the Arboricultural Impact Assessment (**application document 5.10**). The arboricultural survey did not identify any ancient trees within the Order Limits or within the 15m buffer.

5.2.2 Twelve veteran trees have been identified within the Order Limits or within the 15m buffer (Table 5.2). Veteran trees are category A (high quality) and sub-category 3 (recognising their cultural significance) within the classification in BS 5837:2012. It is noted that a number of the trees identified during the field survey have a lower life expectancy than the minimum 40 years recommended by BS 5837:2012 but have been given A category status because of their ecological value.

Table 5.2 – Veteran Trees Identified in the Field Survey

Tree ID	Grid Ref	Species	Details
T196	TL 99092 39665	Ash	Very large stem. Lapsed pollard at 4m. Lapsed open basal cavity. Large, decayed pollard arms. Slender regrowth. Large deadwood within crown
T378	TL 90166 36776	Pedunculate oak	Historic primary union failure at 3m; evident internal hollowing within large cavities. Moderate ivy to upper crown. Moderate deadwood to a diameter of approximately 100mm
T256	TL96534 37741	Pedunculate oak	Historic pollard. Multiple leaders from 3m. Minor instances of deadwood to a diameter of approximately 110mm
T264	TL95149 37543	Pedunculate oak	Several basal cavities between basal flaring. Lower stem swelling indicative of compensatory growth to internal decay
T272	TL94863 37483	Pedunculate oak	Significant decay and bark necrosis to lower stem. Remaining canopy growing only from western primary leader
T615	TL83690 37051	Pedunculate oak	Historically reduced to 4m. Multiple stems from 4m. Cavity to approximately 800mm diameter on eastern side from 1.5m, indicative of historic failure of primary leader. Significant internal hollowing
T628	TL83201 37041	Pedunculate oak	Fungal fruiting bodies of <i>Ganoderma applanatum</i> and <i>Meripilus giganteus</i> present throughout stem and poor structural condition
T548	TL85970 37031	Pedunculate oak	Large stem size at 1770mm diameter. Other veteran characteristics of stem fracture, internal hollowing to 3m historic branch fractures
T551	TL85966 37016	Pedunculate oak	Number of veteran features; historic branch failures, large cavity and hollowing into stem, significant deadwood
T613	TL83736 36998	Pedunculate oak	Historically reduced to 4m. Multiple leaders from 4m. Eastern stem fracture exhibiting extensive historic hollowing and decay throughout stem
T363	TL90918 36926	Pedunculate oak	Historic pollard. Basal cavity to west stem side. Multiple leaders from a height of 3m
T596	TL84129 36658	Pedunculate oak	Large diameter, squat tree characteristic of veteran

6. Conclusion

6.1 Designated Ancient Woodland

6.1.1 There are 12 areas of designated Ancient Woodland within or immediately adjacent to the Order Limits. Hintlesham Little Wood is the only one located within the Order Limits. All of the areas of designated Ancient Woodland have an additional nature conservation designation.

6.2 Potential Ancient Woodland

6.2.1 The desk study identified 11 areas of woodland that could be potential ancient woodland. These were surveyed to identify indicator species and other features representative of ancient woodland origin. The site surveys identified three sites to contain such features and therefore are likely to be ancient woodland and will be treated as such within the assessment. These are:

- PoAWS4 – Hintlesham Woods;
- PoAWS5 – a linear feature to the north of Hintlesham Woods; and
- PoAWS10 – Ansell's Grove.

6.2.2 The remaining woodland areas have not been identified as ancient woodland and therefore will be treated the same as other woodland features within the study area in the assessment.

6.3 Ancient and Veteran Trees

6.3.1 No ancient trees have been identified within the Order Limits or within the 15m buffer. Eleven oak and one ash trees have been identified as veteran. Structural condition of the veteran trees includes three in poor condition and with limited life expectancy.

Annex A: Hintlesham Little Wood Botanical Survey Results

Species	Common Name	Layer	Number of Quadrats	Abundance (DOMIN)
<i>Quercus robur</i>	Pedunculate oak	Canopy	4/5	4-8
<i>Tilia europaea</i>	Common lime	Canopy	3/5	1-5
<i>Fraxinus excelsior</i>	Ash	Canopy	5/5	5-8
<i>Acer campestre</i>	Field maple	Canopy	4/5	1-5
<i>Betula pubescens</i>	Downy birch	Canopy	4/5	1-4
<i>Corylus avellana</i>	Hazel	Understorey	5/5	6/8
<i>Acer campestre (sapling)</i>	Field maple	Understorey	2/5	4
<i>Tilia europaea (sapling)</i>	Common lime	Understorey	1/1	1
<i>Mercurialis perennis</i>	Dog's mercury	Ground layer	4/5	8-9
<i>Hyacinthoides non-scripta</i>	Bluebell	Ground layer	2/5	2-5
<i>Anemone nemorosa</i>	Wood anemone	Ground layer	5/5	5-8
<i>Lamium galeobdolon</i>	Yellow archangel	Ground layer	3/5	1-4
<i>Ficaria verna</i>	Lesser celandine	Ground layer	4/5	1-5
<i>Poa trivialis</i>	Rough meadow grass	Ground layer	5/5	3-4
<i>Brachythecium rutabulum</i>	Rough-stalked feather-moss	Ground layer	3/5	1-3
<i>Glechoma hederacea</i>	Ground ivy	Ground layer	1/5	1
<i>Allium ursinum</i>	Ramsons	Ground layer	1/5	2
<i>Millium effusum</i>	Wood millet	Ground layer	1/5	1
<i>Fraxinus excelsior</i>	Ash	Ground layer	1/5	1
<i>Viola reichenbachiana</i>	Early dog violet	Ground layer	4/5	1-2
<i>Orchis mascula</i>	Early purple orchid	Ground layer	2/5	1-3
<i>Kindbergia praelonga</i>	Common feather-moss	Ground layer	2/5	1
<i>Isoetes macrospora</i>	Slender mouse-tail moss	Ground layer	2/5	1
<i>Tamus communis</i>	Black bryony	Ground layer	1/5	1
<i>Arum maculatum</i>	Lords and ladies	Ground layer	2/5	1
<i>Holcus lanatus</i>	Yorkshire fog	Ground layer	3/5	1
<i>Carex sylvatica</i>	Wood sedge	Ground layer	1/5	2
<i>Brachypodium sylvaticum</i>	False wood brome	Ground layer	3/5	1-4

Species	Common Name	Layer	Number of Quadrats	Abundance (DOMIN)
<i>Veronica montana</i>	Wood speedwell	Ground layer	1/5	1
<i>Acer campestre (seedling)</i>	Field maple	Ground layer	1/5	1
<i>Geum urbanum</i>	Wood Avens	Ground layer	2/5	1
<i>Rubus fruticosus</i>	Bramble	Ground layer	2/5	2-3
<i>Circaea lutetiana</i>	Enchanter's nightshade	Ground layer	1/5	3
<i>Lonicera periclymenum</i>	Honeysuckle	Ground layer	2/5	1
<i>Urtica dioica</i>	Common nettle	Ground layer	1/5	2
<i>Fraxinus excelsior</i>	Ash	Ground layer	1/5	4
<i>Viola riviniana</i>	Common dog-violet	Ground layer	1/5	2
<i>Atrichium undulatum</i>	Undulate atrichum moss	Ground layer	1/5	2
<i>Holcus mollis</i>	Creeping soft grass	Ground layer	1/5	1
<i>Potentilla sterilis</i>	Barren strawberry	Ground layer	1/5	1
<i>Luzula forsteri</i>	Southern wood-rush	Ground layer	1/5	2

Annex B: Botanical Survey Results

Table B1 – PoAWS4 – Species List (NVC Survey) – Coppiced Strip

Species	Common Name	Layer	Number of Quadrats	Abundance (DOMIN)
<i>Quercus robur</i>	Pedunculate oak	Canopy	3/3	4-7
<i>Fraxinus excelsior</i>	Ash	Canopy	3/3	4-8
<i>Acer campestre</i>	Field maple	Canopy	3/3	2-3
<i>Betula pubescens</i>	Downy birch	Canopy	3/3	3-8
<i>Pinus sylvestris</i>	Scot's pine	Canopy	3/3	1-4
<i>Larix sp.</i>	Larch species	Canopy	1/3	1
<i>Corylus avellana</i>	Hazel	Understorey	3/3	5
<i>Acer campestre (sapling)</i>	Field maple	Understorey	1/3	3
<i>Crataegus monogyna</i>	Hawthorn	Understorey	3/3	4-5
<i>Mercurialis perennis</i>	Dog's mercury	Ground layer	3/3	10
<i>Poa trivialis</i>	Rough meadow grass	Ground layer	1/3	3
<i>Brachythecium rutabulum</i>	Rough-stalked feather-moss	Ground layer	2/3	3-5
<i>Millium effusum</i>	Wood millet	Ground layer	3/3	1
<i>Kindbergia praelonga</i>	Common feather-moss	Ground layer	1/3	3
<i>Isoetecium myosuroides</i>	Slender mouse-tail moss	Ground layer	3/3	1-3
<i>Brachypodium sylvaticum</i>	False-brome	Ground layer	1/3	1
<i>Geum urbanum</i>	Wood avens	Ground layer	2/3	1
<i>Urtica dioica</i>	Common nettle	Ground layer	2/3	2-4
<i>Plagiomnium undulatum</i>	Hart's tongue moss	Ground layer	1/3	1
<i>Galium aparine</i>	Cleavers	Ground layer	2/3	1-2
<i>Dryopteris filix-mas</i>	Male fern	Ground layer	1/3	1

W8 *Fraxinus excelsior* – *Acer campestre* – *Mercurialis perennis* woodland

W8a *Primula vulgaris* – *Glechoma hederacea* sub-community (Tablefit W8a 57 poor – 74 good)

Table B2 – PoAWS4 – Species List (not recorded within NVC quadrats) – Coppiced Strip

Species	Common Name	Layer
<i>Fraxinus excelsior</i>	Ash	Ground layer
<i>Viola riviniana</i>	Common dog-violet	Ground layer
<i>Atrichium undulatum</i>	Undulate atrichum moss	Ground layer

Species	Common Name	Layer
<i>Holcus mollis</i>	Creeping soft grass	Ground layer
<i>Potentilla sterilis</i>	Barren strawberry	Ground layer
<i>Luzula forsteri</i>	Southern wood-rush	Ground layer
<i>Circaea lutetiana</i>	Enchanter's nightshade	Ground layer
<i>Lonicera periclymenum</i>	Honeysuckle	Ground layer
<i>Tamus communis</i>	Black bryony	Ground layer
<i>Arum maculatum</i>	Lords and ladies	Ground layer
<i>Holcus lanatus</i>	Yorkshire fog	Ground layer
<i>Carex sylvatica</i>	Wood sedge	Ground layer
<i>Veronica montana</i>	Wood speedwell	Ground layer
<i>Acer campestre (seedling)</i>	Field maple	Ground layer
<i>Fraxinus excelsior</i>	Ash	Ground layer
<i>Viola reichenbachiana</i>	Early dog violet	Ground layer
<i>Orchis mascula</i>	Early purple orchid	Ground layer
<i>Hyacinthoides non-scripta</i>	Bluebell	Ground layer
<i>Anemone nemorosa</i>	Wood anemone	Ground layer
<i>Lamium galeobdolon</i>	Yellow archangel	Ground layer
<i>Ficaria verna</i>	Lesser celandine	Ground layer
<i>Glechoma hederacea</i>	Ground-ivy	Ground layer
<i>Allium ursinum</i>	Ramsons	Ground layer
<i>Rubus fruticosus</i>	Bramble	Ground layer
<i>Tilia europaea (sapling)</i>	Common lime	Understorey
<i>Tilia europaea</i>	Common lime	Canopy

Table B3 – PoAWS5 – Species List

Species	Common Name	Layer
<i>Brachypodium sylvaticum</i>	False-brome	Ground layer
<i>Acer campestre</i>	Field maple	Canopy
<i>Rosa arvensis</i>	Field rose	Ground layer
<i>Quercus robur</i>	Pedunculate oak	Canopy
<i>Mercurialis perennis</i>	Dog's mercury	Ground layer
<i>Anthriscus sylvestris</i>	Cow parsley	Ground layer

Species	Common Name	Layer
<i>Rumex sanguineus</i>	Wood dock	Ground layer
<i>Myosotis sylvatica</i>	Wood forget-me-not	Ground layer
<i>Veronica chamaedrys</i>	Germander speedwell	Ground layer
<i>Geum urbanum</i>	Wood avens	Ground layer
<i>Carex sylvatica</i>	Wood sedge	Ground layer
<i>Tamus communis</i>	Black bryony	Ground layer
<i>Rosa canina</i>	Dog rose	Ground layer
<i>Viola riviniana</i>	Common dog-violet	Ground layer
<i>Viola reichenbachiana</i>	Early dog violet	Ground layer
<i>Primula vulgaris</i>	Primrose	Ground layer
<i>Euonymus europaeus</i>	European spindle	Ground layer
<i>Arum maculatum</i>	Lords and ladies	Ground layer
<i>Prunus spinosa</i>	Blackthorn	Ground layer
<i>Corylus avellana</i>	Hazel	Understorey
<i>Cornus sanguinea</i>	Common dogwood	Ground layer
<i>Geranium robertianum</i>	Herb Robert	Ground layer
<i>Galium aparine</i>	Cleavers	Ground layer
<i>Fraxinus excelsior</i>	Ash	Canopy
<i>Ulmus minor</i>	Field elm	Canopy
<i>Viola odorata</i>	Sweet violet	Ground layer
<i>Fragaria vesca</i>	Wild strawberry	Ground layer
<i>Ranunculus auricomus</i>	Goldilocks buttercup	Ground layer
<i>Hedera helix</i>	Common ivy	Ground layer

Table B4 – PoAWS8 – Species List

Species	Common Name	Layer
<i>Fraxinus excelsior</i>	Ash	Canopy
<i>Mercurialis perennis</i>	Dog's mercury	Ground layer
<i>Lamiastrum galeobdolon subsp. galeobdolon</i>	Yellow archangel	Ground layer
<i>Glechoma hederacea</i>	Ground ivy	Ground layer
<i>Crataegus monogyna</i>	Hawthorn	Understorey

Species	Common Name	Layer
<i>Urtica dioica</i>	Common nettle	Ground layer
<i>Poa trivialis</i>	Rough meadow grass	Ground layer
<i>Galium aparine</i>	Cleavers	Ground layer
<i>Ranunculus repens</i>	Creeping buttercup	Ground layer
<i>Hyacinthoides non-scripta</i>	Bluebell	Ground layer
<i>Stachys sylvatica</i>	Hedge woundwort	Ground layer
<i>Anthriscus sylvestris</i>	Cow parsley	Ground layer
<i>Arum maculatum</i>	Lords and ladies	Ground layer
<i>Rubus fruticosus</i>	Bramble	Ground layer
<i>Corylus avellana</i>	Hazel	Understorey
<i>Alnus glutinosa</i>	Alder	Canopy

Table B5 – PoAWS8 – Species List – Wet willow carr

Species	Common Name	Layer	Number of Quadrats	Abundance (DOMIN)
<i>Salix cinerea</i>	Grey willow	Understorey	1/1	10
<i>Fraxinus excelsior</i>	Ash	Canopy	1/1	1
<i>Mercurialis perennis</i>	Dog's mercury	Ground layer	1/1	9
<i>Chrysosplenium oppositifolium</i>	Opposite-leaved golden-saxifrage	Ground layer	1/1	7
<i>Cardamine amara</i>	Large bittercress	Ground layer	1/1	1
<i>Silene dioica</i>	Red campion	Ground layer	1/1	1
<i>Galium palustre</i>	Marsh bedstraw	Ground layer	1/1	3
<i>Holcus lanatus</i>	Yorkshire fog	Ground layer	1/1	1
<i>Solanum dulcamara</i>	Bittersweet	Ground layer	1/1	1
<i>Angelica sylvestris</i>	Wild angelica	Ground layer	1/1	1
<i>Ranunculus ficaria</i>	Lesser celandine	Ground layer	1/1	2
<i>Plagiomnium undulatum</i>	Hart's tongue moss	Ground layer	1/1	1
<i>Lamiastrum galeobdolon subsp. galeobdolon</i>	Yellow archangel	Ground layer	1/1	4
<i>Poa trivialis</i>	Rough meadow grass	Ground layer	1/1	5
<i>Glyceria fluitans</i>	Floating sweet-grass	Ground layer	1/1	4
<i>Arum maculatum</i>	Lords and ladies	Ground layer	1/1	1

Species	Common Name	Layer	Number of Quadrats	Abundance (DOMIN)
<i>Galium aparine</i>	Cleavers	Ground layer	1/1	4
<i>Adoxa moschatellina</i>	Moschatel	Ground layer	1/1	2
<i>Circaea lutetiana</i>	Enchanter's nightshade	Ground layer	1/1	1
<i>Glechoma hederacea</i>	Ground ivy	Ground layer	1/1	4
<i>Hyacinthoides non-scripta</i>	Bluebell	Ground layer	1/1	2
<i>Kindbergia praelonga</i>	Common feather-moss	Ground layer	1/1	1
W6 <i>Alnus glutinosa</i> – <i>Urtica dioica</i> woodland (Tablefit W6 46 – very poor)				

Table B6 – PoAWS8 – Species List – Alder woodland

Species	Common Name	Layer	Number of Quadrats	Abundance (DOMIN)
<i>Fraxinus excelsior</i>	Ash	Canopy	1/2	1
<i>Alnus glutinosa</i>	Alder	Understorey	2/2	8
<i>Corylus avellana</i>	Hazel	Understorey	2/2	5-7
<i>Sambucus nigra</i>	Elder	Understorey	2/2	4-5
<i>Crataegus monogyna</i>	Hawthorn	Understorey	1/2	1
<i>Hyacinthoides non-scripta</i>	Bluebell	Ground layer	2/2	1-3
<i>Stellaria holostea</i>	Greater stitchwort	Ground layer	2/2	1-5
<i>Lamiastrum galeobdolon</i> <i>subsp. galeobdolon</i>	Yellow archangel	Ground layer	2/2	5
<i>Poa trivialis</i>	Rough meadow grass	Ground layer	2/2	4-7
<i>Glyceria fluitans</i>	Floating sweet-grass	Ground layer	2/2	1-3
<i>Ficaria verna</i>	Lesser celandine	Ground layer	2/2	8
<i>Galium aparine</i>	Cleavers	Ground layer	2/2	4-7
<i>Urtica dioica</i>	Common nettle	Ground layer	2/2	5
<i>Stachys sylvatica</i>	Hedge woundwort	Ground layer	1/2	1
<i>Mercurialis perennis</i>	Dog's mercury	Ground layer	1/2	8
<i>Arum maculatum</i>	Lords and ladies	Ground layer	2/2	1-3
<i>Anemone nemorosa</i>	Wood anemone	Ground layer	2/2	1-4
<i>Glechoma hederacea</i>	Ground ivy	Ground layer	1/2	2
<i>Ranunculus repens</i>	Meadow buttercup	Ground layer	2/2	1-3
<i>Silene dioica</i>	Red campion	Ground layer	2/2	1

Species	Common Name	Layer	Number of Quadrats	Abundance (DOMIN)
<i>Chrysosplenium oppositifolium</i>	Opposite-leaved golden-saxifrage	Ground layer	1/2	7
<i>Angelica sylvestris</i>	Wild angelica	Ground layer	1/2	1
<i>Stellaria neglecta</i>	Greater chickweed	Ground layer	1/2	1
<i>Galium palustre</i>	Marsh bedstraw	Ground layer	1/2	3
<i>Cardamine amara</i>	Large bittercress	Ground layer	1/2	4
<i>Milium effusum</i>	Wood millet	Ground layer	1/2	1

W8 *Fraxinus excelsior* – *Acer campestre* – *Mercurialis perennis* woodland (Tablefit W8 63 fair)

W7 *Alnus glutinosa* – *Fraxinus excelsior* – *Lysimachia nemorum* woodland - W7a *Urtica dioica* sub-community (Tablefit W7a 52 poor – 63 fair)

Table B7 – PoAWS9 – Species List

Species	Common Name	Layer	Number of Quadrats	Abundance (DOMIN)
<i>Alnus glutinosa</i>	Alder	Canopy	2/2	1-2
<i>Salix fragilis</i>	Crack willow	Canopy	2/2	9
<i>Corylus avellana</i>	Hazel	Understorey	2/2	4
<i>Prunus spinosa</i>	Blackthorn	Understorey	1/2	2
<i>Sambucus nigra</i>	Elder	Understorey	2/2	1-2
<i>Salix cinerea</i>	Grey willow	Understorey	2/2	1-2
<i>Mercurialis perennis</i>	Dog's mercury	Ground layer	2/2	6-10
<i>Glechoma hederacea</i>	Ground ivy	Ground layer	2/2	2-7
<i>Urtica dioica</i>	Common nettle	Ground layer	2/2	1-8
<i>Arum maculatum</i>	Lords and ladies	Ground layer	1/2	1
<i>Dryopteris filix-mas</i>	Male fern	Ground layer	1/2	1
<i>Dryopteris dilatata</i>	Broad buckler-fern	Ground layer	2/2	1
<i>Poa trivialis</i>	Rough meadow grass	Ground layer	2/2	1-9
<i>Galium aparine</i>	Cleavers	Ground layer	1/2	4
<i>Ficaria verna</i>	Lesser celandine	Ground layer	1/2	2
<i>Equisetum telmateia</i>	Great horsetail	Ground layer	1/2	2
<i>Dryopteris affinis</i>	Scaly male fern	Ground layer	1/2	1
<i>Alliaria petiolata</i>	Garlic mustard	Ground layer	1/2	1
<i>Circaea lutetiana</i>	Enchanter's nightshade	Ground layer	1/2	3

Species	Common Name	Layer	Number of Quadrats	Abundance (DOMIN)
<i>Chrysosplenium oppositifolium</i>	Opposite-leaved golden-saxifrage	Ground layer	1/2	4
<i>Geranium robertianum</i>	Herb Robert	Ground layer	1/2	1
<i>Galium palustre</i>	Marsh bedstraw	Ground layer	1/2	1
<i>Cardamine amara</i>	Large bittercress	Ground layer	1/2	1
<i>Kindbergia praelonga</i>	Common feather-moss	Ground layer	1/2	1
<i>Plagiomnium undulatum</i>	Hart's tongue moss	Ground layer	1/2	1

W6 *Alnus glutinosa* – *Urtica dioica* woodland (Tablefit W6 54 poor – 66 fair)

Table B8 – PoAWS10 – Species List – South side of valley

Species	Common Name	Layer	Number of Quadrats	Abundance (DOMIN)
<i>Alnus glutinosa</i>	Alder	Canopy	4/4	8-9
<i>Fraxinus excelsior</i>	Ash	Canopy	4/4	5-7
<i>Quercus robur</i>	Pedunculate oak	Canopy	1/4	3
<i>Sambucus nigra</i>	Elder	Understorey	2/4	1-2
<i>Salix cinerea</i>	Grey Willow	Understorey	1/4	1
<i>Crataegus monogyna</i>	Hawthorn	Understorey	3/4	1
<i>Alnus glutinosa (sapling)</i>	Alder	Understorey	2/4	4
<i>Prunus spinosa</i>	Blackthorn	Understorey	3/4	7-8
<i>Corylus avellana</i>	Hazel	Understorey	4/4	4-8
<i>Rubus fruticosus</i>	Bramble	Understorey	2/4	1
<i>Ribes rubrum</i>	Redcurrant	Understorey	2/4	4-5
<i>Rubus idaeus</i>	Red raspberry	Understorey	1/4	4
<i>Ilex aquifolium</i>	Holly	Understorey	2/4	1-3
<i>Hyacinthoides non-scripta</i>	Bluebell	Ground layer	3/4	1
<i>Brachypodium sylvaticum</i>	False-brome	Ground layer	1/4	4
<i>Moehringia trinerva</i>	Three-nerved sandwort	Ground layer	2/4	1-3
<i>Glechoma hederacea</i>	Ground ivy	Ground layer	3/4	1-5
<i>Galium aparine</i>	Cleavers	Ground layer	3/4	4
<i>Poa trivialis</i>	Rough meadow grass	Ground layer	2/4	8
<i>Dryopteris dilatata</i>	Broad buckler-fern	Ground layer	1/4	4

Species	Common Name	Layer	Number of Quadrats	Abundance (DOMIN)
<i>Mnium hornum</i>	Swan's neck thyme moss	Ground layer	1/4	4
<i>Silene dioica</i>	Red campion	Ground layer	1/4	3
<i>Geum urbanum</i>	Wood Avens	Ground layer	4/4	1
<i>Urtica dioica</i>	Common nettle	Ground layer	3/4	4-8
<i>Dryopteris affinis</i>	Scaly male fern	Ground layer	1/4	1
<i>Bromopsis ramosa</i>	Hairy-brome	Ground layer	1/4	1
<i>Circaea lutetiana</i>	Enchanter's nightshade	Ground layer	3/4	2-4
<i>Alliaria petiolata</i>	Garlic mustard	Ground layer	1/4	1
<i>Juncus effusus</i>	Soft rush	Ground layer	1/4	1
<i>Crataegus monogyna</i> (seedling)	Hawthorn	Ground layer	2/4	1
<i>Fraxinus excelsior</i> (seedling)	Ash	Ground layer	1/4	1
<i>Prunus spinosa</i> (seedling)	Blackthorn	Ground layer	2/4	1-2
<i>Chrysosplenium oppositifolium</i>	Opposite-leaved golden-saxifrage	Ground layer	2/4	1-7
<i>Arum maculatum</i>	Lords and ladies	Ground layer	3/4	1
<i>Mercurialis perennis</i>	Dog's mercury	Ground layer	3/4	8-9
<i>Equisetum telmateia</i>	Great horsetail	Ground layer	1/4	4
<i>Ranunculus repens</i>	Meadow buttercup	Ground layer	2/4	1
<i>Kindbergia praelonga</i>	Common feather-moss	Ground layer	1/4	2
<i>Plagiomnium undulatum</i>	Hart's tongue moss	Ground layer	2/4	2-3
<i>Cardamine flexuosa</i>	Wood bitter-cress	Ground layer	1/4	1
<i>Cardamine amara</i>	Large bittercress	Ground layer	2/4	1-4
<i>Allium ursinum</i>	Ramsons	Ground layer	2/4	5
<i>Anemone nemorosa</i>	Wood anemone	Ground layer	2/4	3-8
<i>Ficaria verna</i>	Lesser celandine	Ground layer	1/4	7
<i>Geranium robertianum</i>	Herb Robert	Ground layer	2/4	1
<i>Narcissus sp.</i>	Daffodil sp.	Ground layer	1/4	2
<i>Veronica montana</i>	Wood speedwell	Ground layer	1/4	2
<i>Adoxa moschatellina</i>	Moschatel	Ground layer	1/4	1
<i>Calliergonella cuspidata</i>	Pointed spear-moss	Ground layer	1/4	1

Species	Common Name	Layer	Number of Quadrats	Abundance (DOMIN)
<i>Ajuga reptans</i>	Bugle	Ground layer	1/4	1
<i>Carex acutiformis</i>	Lesser pond sedge	Ground layer	1/4	5
<i>Filipendula ulmaria</i>	Meadowsweet	Ground layer	1/4	5
<i>Galium palustre</i>	Marsh bedstraw	Ground layer	1/4	2
<i>Lamium galeobdolon</i>	Yellow archangel	Ground layer	1/4	1
<i>Angelica sylvestris</i>	Wild angelica	Ground layer	1/4	1
<i>Valeriana officinalis</i>	Common valerian	Ground layer	1/4	1

W8 *Fraxinus excelsior* – *Acer campestre* – *Mercurialis perennis* woodland (Tablefit W8 56-59 poor)

W8b *Anemone nemorosa* sub-community (Tablefit W8b 67 fair)

W7 *Alnus glutinosa* – *Fraxinus excelsior* – *Lysimachia nemorum* woodland; W7a *Urtica dioica* sub-community (Tablefit W7a 52 poor – 70 good)

W6 *Alnus glutinosa* – *Urtica dioica* woodland; W6a Typical sub-community (Tablefit W6a 46 very poor- 54 poor)

Table B9 – PoAWS10 – Species List – North side of Valley

Species	Common Name	Layer	Number of Quadrats	Abundance (DOMIN)
<i>Quercus robur</i>	Pedunculate oak	Canopy	3/3	7-8
<i>Fraxinus excelsior</i>	Ash	Canopy	3/3	7
<i>Acer campestre</i>	Field maple	Canopy	3/3	4-6
<i>Castanea sativa</i>	Sweet chestnut	Canopy	1/2	4
<i>Carpinus betulus</i>	European hornbeam	Canopy	2/2	3
<i>Acer campestre</i> (sapling)	Field maple	Understorey	2/2	1-4
<i>Crataegus monogyna</i>	Hawthorn	Understorey	2/2	2-3
<i>Rubus fruticosus</i>	Bramble	Understorey	2/2	2-5
<i>Ilex aquifolium</i>	Holly	Understorey	1/1	1
<i>Corylus avellana</i>	Hazel	Understorey	1/1	2
<i>Hyacinthoides non-scripta</i>	Common bluebell	Ground layer	3/3	3-9
<i>Galium aparine</i>	Cleavers	Ground layer	3/3	4-6
<i>Glechoma hederacea</i>	Ground ivy	Ground layer	3/3	1-5
<i>Pteridium aquilinum</i>	Bracken	Ground layer	1/3	8
<i>Moehringia trinerva</i>	Three-nerved sandwort	Ground layer	3/3	2-3
<i>Veronica hederifolia</i>	Ivy-leaved speedwell	Ground layer	1/3	1
<i>Silene dioica</i>	Red campion	Ground layer	1/3	1

Species	Common Name	Layer	Number of Quadrats	Abundance (DOMIN)
<i>Circaea lutetiana</i>	Enchanter's nightshade	Ground layer	1/3	1
<i>Dactylis glomerata</i>	Cock's-foot	Ground layer	1/3	1
<i>Geum urbanum</i>	Wood avens	Ground layer	2/3	2
<i>Brachypodium sylvaticum</i>	False brome	Ground layer	2/3	1-4
<i>Alliaria petiolata</i>	Garlic mustard	Ground layer	2/3	1-4
<i>Poa trivialis</i>	Rough meadow grass	Ground layer	2/3	1
<i>Mercurialis perennis</i>	Dog's mercury	Ground layer	1/3	9
<i>Anemone nemorosa</i>	Wood anemone	Ground layer	1/3	1

W8 *Fraxinus excelsior* – *Acer campestre* – *Mercurialis perennis* woodland; W8a *Primula vulgaris* – *Glechoma hederacea* sub-community (Tablefit W8a 57 poor – 60 fair)

W10 *Quercus robur* – *Pteridium aquilinum* *Rubus fruticosus* woodland (Tablefit W10 73 good)

Table B10 – PoAWS11 - Species List– Chestnut Grove (North)

Species	Common Name	Layer	Number of Quadrats	Abundance (DOMIN)
<i>Castanea sativa</i>	Sweet chestnut	Canopy	3/3	9
<i>Betula pendula</i>	Silver birch	Canopy	3/3	1
<i>Carpinus betulus</i>	European hornbeam	Canopy	3/3	1
<i>Ilex aquifolium</i>	Holly	Understorey	3/3	1-7
<i>Crataegus monogyna</i>	Hawthorn	Understorey	3/3	2-4
<i>Acer campestre</i>	Field maple	Understorey	2/3	1-3
<i>Ribes uva-crispa</i>	Wild gooseberry	Understorey	1/3	4
<i>Sambucus nigra</i>	Elder	Understorey	1/3	1
<i>Hyacinthoides non-scripta</i>	Bluebell	Ground layer	3/3	4-9
<i>Ilex aquifolium (seedling)</i>	Holly	Ground layer	3/3	1-3
<i>Galium aparine</i>	Cleavers	Ground layer	2/3	7
<i>Poa trivialis</i>	Rough meadow grass	Ground layer	1/3	4
<i>Poa annua</i>	Annual meadow grass	Ground layer	1/3	3
<i>Silene dioica</i>	Red campion	Ground layer	1/3	1
<i>Alliaria petiolata</i>	Garlic mustard	Ground layer	1/3	5
<i>Stellaria media</i>	Chickweed	Ground layer	2/3	1-3
<i>Crataegus monogyna (seedling)</i>	Hawthorn	Ground layer	1/3	1

Species	Common Name	Layer	Number of Quadrats	Abundance (DOMIN)
<i>Fraxinus excelsior</i> (seedling)	Ash	Ground layer	1/3	1
<i>Rumex sanguineus</i>	Wood dock	Ground layer	1/3	1
<i>Narcissus x odorus</i>	Daffodil species	Ground layer	1/3	1
<i>Glechoma hederacea</i>	Ground Ivy	Ground layer	1/3	1
<i>Moehringia trinerva</i>	Three-nerved sandwort	Ground layer	1/3	1
<i>Lolium perenne</i>	Perennial rye grass	Ground layer	1/3	4
<i>Rumex obtusifolius</i>	Broad leaved dock	Ground layer	1/3	1
<i>Holcus lanatus</i>	Yorkshire fog	Ground layer	1/3	1
<i>Arum maculatum</i>	Lords and ladies	Ground layer	1/3	1

W10 *Quercus robur* – *Pteridium aquilinum* *Rubus fruticosus* woodland

W10b *Anemone nemorosa* sub-community (Tablefit W10b 20 – 45 very poor)

Table B11 – PoAWS11 – Species list – Chestnut Grove (South)

Species	Common Name	Layer
<i>Fraxinus excelsior</i>	Ash	Canopy
<i>Common hawthorn</i>	Hawthorn	Understorey
<i>Corylus avellana</i>	Hazel	Understorey
<i>Salix caprea</i>	Goat willow	Understorey
<i>Salix cineria</i>	Grey willow	Understorey
<i>Poa trivialis</i>	Rough meadow grass	Ground Layer
<i>Silene dioica</i>	Red campion	Ground Layer
<i>Urtica dioica</i>	Common nettle	Ground Layer
<i>Ficaria verna</i>	Lesser celandine	Ground Layer
<i>Geranium robertianum</i>	Herb Robert	Ground Layer
<i>Arum maculatum</i>	Lords and ladies	Ground Layer
<i>Rumex sanguineus</i>	Wood dock	Ground Layer
<i>Cardamine pratensis</i>	Cuckoo flower	Ground Layer
<i>Cirsium palustre</i>	Marsh thistle	Ground Layer
<i>Ranunculus sardous</i>	Hairy buttercup	Ground Layer
<i>Veronica montana</i>	Wood speedwell	Ground Layer
<i>Angelica sylvestris</i>	Wild angelica	Ground Layer
<i>Holcus lanatus</i>	Yorkshire fog	Ground Layer

Species	Common Name	Layer
<i>Mercurialis perennis</i>	Dog's mercury	Ground Layer
<i>Mentha aquatica</i>	Water mint	Ground Layer
<i>Cardamine amara</i>	Large bittercress	Ground Layer

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