



EPR

ECOLOGICAL EXPERTISE, EVOLVED

Land at Rose Farm, Downs Road, Istead Rise

Habitats, Flora and Vegetation Survey Report

Prepared on behalf of

Esquire

Final Report

15 December 2025

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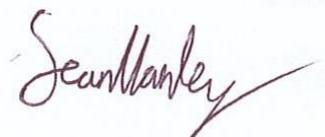
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Land at Rose Farm, Downs Road, Istead Rise

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Land at Rose Farm, Downs Road, Istead Rise

Habitats, Flora and Vegetation Survey Report

Executive Summary

Ecological Planning & Research (EPR) conducted a habitat, vegetation and flora survey in relation to the Proposed Development on Land at Rose Farm, Downs Road, Istead Rise.

The on-site hedgerows and tree lines comprise common and widespread species and are typical examples of Hedgerow S41 Priority Habitat. Therefore, they are of ecological importance at the **Local Level**.

Three on-site fruit trees T61, T89 and T91 do not qualify as veteran trees under the National Planning Policy Framework, but do support veteran features such as deadwood, rot holes and cavities. As such they meet the alternative definition of a veteran tree as set out in the Biodiversity Gain Requirements (Irreplaceable Habitat) Regulations 2024. Therefore, they are considered to be of ecological importance at the **Local Level**.

The mature and over-mature native trees (i.e. Oak, Sweet Chestnut, Ash and Field Maple) within the former Elmlands Shaw, and the very large Lime Tree (T61), have some potential to provide habitat for other taxa and have been present in the landscape of a long period of time, and they are therefore also considered to be of **Local Level** importance

The on-site MG6 *Lolium perenne*-*Cynosurus cristatus* grasslands are of ecological importance at the **Local Level**.

All other on-site habitats, flora and vegetation communities are of ecological importance at the **Within Zone of Influence Level** only.

Land at Rose Farm, Downs Road, Istead Rise

Habitats, Flora and Vegetation Survey Report

1. INTRODUCTION

1.1 Ecological Planning & Research (EPR) was commissioned by Esquire Developments to conduct a survey of the habitats, flora and vegetation in relation to the Proposed Development on Land at Rose Farm, Downs Road, Istead Rise (hereafter referred to as 'the Site').

1.2 **Figure 1** shows the location of the Site.

Relevant Legislation

1.3 **Appendix 1** provides further information about the below legislation:

- The Environment Act 2021
- The Conservation of Habitats and Species Regulations 2017 (as amended)
- The Wildlife and Countryside Act 1981 (as amended)
- The Countryside and Rights of Way (CROW) Act 2000
- The Natural Environment and Rural Communities (NERC) Act 2006

Likely Biophysical Changes and Zone of Influence

1.4 Biophysical change means an "*alteration in biological and/or physical conditions of the environment (e.g., changes in the atmospheric concentration of carbon dioxide, altered soil pH or change in the frequency of a plant species in an area)*" (CIEEM, 2018).

1.5 The predicted biophysical changes that could be generated from the Proposed Development and be of relevance to habitats, flora and vegetation are provided in **Table 1.1**, along with their likely Zone of Influence.

1.6 The Zone of Influence (ZoI) of a development is defined by the Ecological Impact Assessment (EIA) Guidelines as "...*the area over which ecological features may be affected by biophysical changes as a result of the proposed project and associated activities*" (CIEEM, 2018).

1.7 In the case of habitats, flora and vegetation, this is largely confined to the land within the Site, and consequently survey effort focused on areas within it. This may be extended in future to include off-site areas within the ZoI, should assessment work indicate impacts on sensitive off-site habitats, flora or vegetation are likely (for example, associated with off-site highways works).

1.8 Most of the activities and resultant biophysical changes listed in **Table 1.1** are unlikely to have an effect beyond the site boundary and the immediate surrounding area. However, recreational effects arising from new residents, can extend further. For example, deposition of nitrogen and other pollutants associated with car travel may occur several kilometres from a Site (for example up to 5 to 6km).

1.9 The Zol will also extend to those locations where off-site impacts might occur.

Table 1.1: Activities and Biophysical Changes associated with the Proposed Development that may give rise to ecological impacts on Habitats, Flora and Vegetation and the associated Zone(s) of Influence.

Activity	Biophysical Change and Potential Impact	Zone of Influence
The Site Clearance and Construction Phase		
Vegetation clearance and ground works	Loss and fragmentation of habitat. Damage of vulnerable habitat	Site and immediate surrounds
Drainage	Change of groundwater and surface flows and/or water quality, that may in turn affect habitat type and condition	Within the Site boundary and habitats that are hydrologically connected
Assembly and storage areas for machines, materials, and construction compounds	Damage of vulnerable habitat	Site and immediate surrounds
Construction of new roads and buildings	Habitat fragmentation	Site and immediate surrounds
Creation of new habitats through implementation of a soft landscaping scheme	Beneficial impact from the restoration and creation of new habitat	Site and immediate surrounds
Operational Phase		
Access and travel on / off the Site, including increased number of people visiting areas on and around it for recreational purposes	Loss and fragmentation of habitats by trampling	The Site and immediate surrounds. However, it may extend beyond this for effects associated with recreational activities (for example up to 5-6km)
Occupation of new houses: urban effects	Loss and fragmentation of habitats by trampling Degradation and pollution of habitats through urban effects (such as fly tipping and introduction of non-native species)	Site and immediate surrounds. However, it could extend beyond this as per above
Implementation of habitat management plans	Enhancement of existing habitats and the creation of new habitats	Site and immediate surrounds

Survey Area

1.10 As set out above, surveys were confined to land within the Site boundary.

Survey Objectives

1.11 The objectives of the survey and report are to:

- Produce a map of the habitats and vegetation communities within the Site;
- Identify and map any habitat types afforded significant weight in planning policy;
- Report the results of the botanical survey; and
- Assess the ecological importance of the flora species/assemblages and vegetation communities within the Site.

2. METHODS

Desk Survey

2.1 A biological records data search was commissioned from Kent and Medway Biological Record Centre (KMBRC) on 14th February 2025. It included biological records within a 2km radius of the Site, including vascular and non-vascular plant species, lichens and fungi, and any locally designated sites for nature conservation.

2.2 A desktop study was also undertaken which reviewed published information and internet resources, including data held on priority habitats, ancient woodland, veteran trees, geology, topography and landscape history. Sources consulted included:

- The Multi-Agency Geographic Information for the Countryside (MAGIC);
- The British Geological Survey;
- The Soil Survey of England and Wales;
- The Environment Agency;
- Open-source LiDAR imagery published by DEFRA;
- Tithe maps and apportionments for Northfleet Parish (ca. 1839);
- OS 1 inch to the mile OS map, Sheet 271, published 1896;
- The 6 inch to the Mile Ordnance Survey Maps, Kent XVIII, published 1869;
- The 6 inch to the Mile Ordnance Survey Maps, Kent X, published 1869
- The 25 inch to the Mile Ordnance Survey Map, Kent XVIII.2, published 1896;
- 1st Land Utilisation Survey of Britain c.1935;
- 2nd Land Utilisation Survey of Britain, sheet 189, published c.1962; and
- Aerial imagery from the 1940s onwards.

2.3 A combination of the OS MasterMap Topography Layer and open-source aerial imagery was used to divide the Site into parcels and create a draft habitat map in ArcGIS software, which was then ground-truthed and updated following the field survey.

2.4 Each habitat parcel and linear feature (such as hedgerows) has been assigned a unique ID code. These are referred to throughout this report and are shown on **Figures 3a and 3b**.

Field Survey

Overview

2.5 The survey visits were completed on the 9th June, 2nd July, 12th July, 13th July and 6th October 2025 by Sean Manley BSc (Hons) MCIEEM. Sean is an experienced habitat and botanical surveyor who can map to Level 4/5 using UK Habitat Classification (UKHab) (2023), as well as to the NVC (National Vegetation Classification).

- 2.6 Each of the parcels and linear features within the Site were subject to a slow walkover to record the habitats, vascular plant species and vegetation communities present, along with notes on habitat condition and any evidence of management.
- 2.7 Further information about the specific recording methods for habitats, flora and vegetation respectively are described below.

Habitats

- 2.8 Following the field survey and drawing on the flora/vegetation data collected as described below, each habitat parcel was characterised and mapped under UKHab, including all applicable secondary codes. A Minimum Mapping Unit (MMU) of 25m² was used.

Flora

- 2.9 A list of the vascular plant species present was recorded from each parcel, along with an estimation of relative frequency using the 'DAFOR' scale, where D = Dominant, A = Abundant, F = Frequent, O = Occasional and R = Rare. The prefix 'L' was used to denote 'Locally'. Nomenclature follows Stace, 4th edition 2019. Any readily identifiable non-vascular plants (bryophytes) and lichens were also recorded where present.
- 2.10 Attention was paid to searching for species of conservation interest, habitat quality indicator species, and invasive non-native species.
- 2.11 Species of conservation interest are defined here as species in one or more of the following categories:
 - Species with a conservation status listed by the Joint Nature Conservation Committee (JNCC) in their "Conservation Designations for UK Taxa" list (JNCC, 2023); and
 - 'County Notable Species' as published by the Kent Nature Partnership (KNP, 2020).
 - Kent Rare Plant Register, published by the Kent Botanical Recording Group (Kitchener, 2025)
- 2.12 The following habitat quality indicator lists were used:
 - National Vegetation Classification (Rodwell, 1992) – MG5 and MG6 Constancy Tables;
 - UK Habitat Classification – g3a Lowland Meadows Indicator Species List;
 - Indicators of Ancient Woodland – Francis Rose (1999); and
 - Local Wildlife Sites in Kent Criteria for Selection and Delineation V1.9 (2024) – Appendix 1 Ancient Woodland Indicator List and Appendix 4 Indicators of Unimproved Neutral Grassland in Kent.
- 2.13 The presence/absence and abundance/distribution of species of conservation interest and habitat quality indicators were used to assist with the classification of habitat types and vegetation communities (see below), and in the assessment of flora and vegetation against the evaluation criteria described under 'Evaluation Methodology' below.

2.14 Invasive non-native species are defined as those listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended).

Vegetation

2.15 Vegetation was mapped in the field by drawing polygons of homogenous vegetation onto draft field maps. Where necessary, habitat parcels were split to distinguish between different vegetation communities or sub-communities. Divisions between vegetation types were drawn by the surveyor based on field observation, aerial imagery, and/or LiDAR imagery.

2.16 A mixture of 1x1m and 2x2m quadrats were recorded in the grassland parcels, to aid identification of vegetation communities and/or to collect data for future condition assessment under the Statutory Biodiversity Metric (DEFRA, 2025). The “Domin scale” was used for the 2x2m quadrats in accordance with the National Vegetation Classification (NVC) methodology (Rodwell, 2006). Quadrat locations are shown on **Figure 2**.

2.17 Where possible, the vegetation within the Site was classified according to the NVC community descriptions (Rodwell, 1991-2000) using a combination of the quadrat data and overall species lists and notes for each parcel. The identification of NVC communities informs the evaluation of the vegetation supported by the Zol of the Proposed Development against the criteria described under ‘Evaluation Methodology’ below.

Ecological Evaluation

2.18 As per the CIEEM Guidelines (2018), the first stage of an EclA is to identify “important ecological features” within the Zol of a proposed scheme and evaluate the relative importance of these on a geographic scale (National, Regional, County, Local or Within the Zol). Typically, only those features of “Local” importance or above are taken forward for full impact assessment, with some exceptions (referred to where relevant below).

2.19 The methods used for evaluating the habitats, flora and vegetation at the Site are set out below.

Habitat Classification

2.20 The evaluation of habitats is typically contained within the evaluation of their component flora and vegetation, as habitat type does not convey an intrinsic level of importance on the CIEEM geographic scale.

2.21 Some habitat parcels and features, however, may qualify as “important ecological features” in their own right, i.e. for reasons unrelated to their component flora and vegetation or geographic level of importance. This includes habitats afforded additional weight in planning policy (see **Appendix 1**), such as those associated with areas of Provisional Ancient Woodland, Annex 1 and Section 41 ‘Priority’ habitats, ancient/veteran trees, and habitats which are of intrinsic importance as wildlife corridors or historic features of long ecological continuity. Such habitats should also be subject to a full impact assessment as part of the EclA and are therefore highlighted throughout **Section 4**.

Flora

2.22 An interpretation of the potential importance of the flora supported by the Zol of the Proposals is based on descriptions given in the following:

National

- Guidelines for the Selection of Biological Sites of Special Scientific Interest (SSSIs): Chapter 11: Vascular Plants (Taylor *et al.*, 2021).

County

- Criteria for the Selection of Local Wildlife Sites (LWSs) in Kent V1.9 (Kent Wildlife Trust, 2024).
- Kent Rare Plant Register, published by the Kent Botanical Recording Group (Kitchener, 2025)

Vegetation

2.23 An interpretation of the potential importance of the vegetation communities identified within the Zol of the Proposed Development is based on descriptions given in the following:

National

- Interpretation Manual of EU Habitats: Annex 1 Habitats (EC, 2007);
- Guidelines for the Selection of Biological Sites of Special Scientific Interest (SSSIs): Chapter 2a Woodlands, Wood Pasture and Parkland, and Veteran Trees (Latham *et al.*, 2018); and
- Guidelines for the Selection of Biological Sites of Special Scientific Interest (SSSIs): Chapter 3 Grasslands (Jefferson *et al.*, 2019).

County

- Criteria for the Selection of Local Wildlife Sites (LWSs) in Kent V1.9 (Kent Wildlife Trust, 2024).

2.24 The purpose of this assessment is not to identify sites that could be considered for selection/notification as SACs, SSSIs or LWSs. Rather, the criteria set out in the resources listed above are used as a tool to inform an objective evaluation of the flora and vegetation at the Site, according to CIEEM's geographic frame of reference (2018).

Considerations

2.25 Survey visits were conducted in the optimum survey season; however, the 2025 survey season followed a period of heavy drought. Additionally, the Site was frequently and heavily grazed by horses. As such, certain flora may have been missed. One field was permanently occupied and grazed by a bull and cows with calves. For health and safety reasons this meant Field G14 was not accessed for survey.

3. DESK STUDY RESULTS

Designated Sites

3.1 **Figures 1a and 1b** of the associated Outline EclA show those sites that have designations because of their ecological importance within the wider Zol of the Proposed Development. Those of relevance to habitats flora and/or vegetation are listed below.

Statutory Designated Sites of Nature Conservation Importance

Internationally Designated Sites

3.2 There is one designated nature conservation site within 6km of the Site boundary that is of ecological importance at the **International** level in respect of their habitats, flora and/or vegetation. This is the:

- Thames Estuary and Marshes Ramsar site, which at its closest point is 5.6km to the north-west. This is designated for certain plant species under criterion 2 (as well as for its invertebrate and waterbird populations).

3.3 According to MAGIC, the Site falls within the associated Site of Special Scientific Interest (SSSI) Impact Risk Zone (IRZ) for the Thames Estuary and Marshes SSSI, a component part of the Thames Estuary and Marshes SPA.

Nationally Designated Sites

3.4 There are five sites of ecological importance at the **National** level within 5km of the Site, the Site does not sit within the IRZ of any of the SSSI sites.

Locally Designated Sites

3.5 No Local Nature Reserves (LNRs) are within 2km of the Site. The nearest is Rectory Meadow LNR, which is 2.8km to the south-west.

Non-Statutory Designated Sites of Nature Conservation Importance

3.6 Local Wildlife Sites (LWS) are non-statutory designated sites of ecological importance at the **County Level**. Of relevance are:

- Grassland and scrub, Istead Rise LWS (ref: GR 15): there are several component compartments of relevance associated with this LWS, with the closest part being 390m to the south-east. Other component parts lie 706m to the east;
- Pasture South of Istead Rise LWS (ref: GR 03) is approximately 667m to the south; and
- Woods, Nash Street LWS is approximately 868m to the south-west.

Ancient Semi-Natural and Ancient Replanted Woodland

3.7 There are five ancient semi-natural and ancient replanted woodlands listed on Natural England's Provisional Ancient Woodland Inventory within 1km of the Site. The nearest woodland is 80m to the south-east.

Relevant Species Records

3.8 Priority plant records returned by KMBRC within 2km of the Site included:

- White Helleborine *Cephalanthera damasonium* – 'Istead Rise – Nash Bank';
- Man Orchid *Orchis anthropophora* – 'Istead Rise – Nash Bank'; and
- Jersey Cudweed *Gnaphalium luteoalbum* – 'Istead Rise – Nash Bank'.

3.9 Surveyors were therefore particularly alert to the potential presence of these species while conducting the field survey.

Ecological Context

Geology and Soils

3.10 The British Geological Survey's Open Geoscience Viewer indicates the whole of the Site is underlain by the Lewes Nodular Chalk Formation, Seaford Chalk Formation and Newhaven Chalk Formation.

3.11 One superficial deposit overlays the bedrock on the Site: Head - Clay, silt, sand and gravel. This is distributed across much of the Site, except for the south-western most edge.

3.12 The Cranfield Soil and Agrifood Institute Soilscapes describes the soils within the Site as Soilscape 5: Freely draining lime-rich loamy soils. This is associated with herb-rich chalk and limestone pastures and lime-rich deciduous woodland habitats.

3.13 The above geological and soil characteristics influence the habitats, flora and vegetation present and has been considered when deciding on the most appropriate habitat restoration or creation measures as part of the Biodiversity Net Gain Strategy.

Hydrology

3.14 There are no watercourses within the Site. The Government's 'Flood Map for Planning' website indicates that the Site is within Flood Zone 1 and has low probability of flooding. There are no watercourses on-site.

Ecological History

3.15 The Site comprises fields used for grazing or open grassland and two arable fields, with housing running along, but beyond, the eastern boundary.

3.16 Tithe Apportionment maps dated 1838 indicate that much of the land north-east of 'Evelyn Cottage' (G2-G16 and associated hardstanding areas; **Map 3a**) - then named 'Elms Land' - was

under arable. Elmlands Shaw, a strip of woodland, was present on the north-west boundary of the Site (G2, G3 and the southern end of G5-G7; **Map 3a**).

- 3.17 The eastern end of the Site was divided into four fields. Polygon C1 was separated in two. The western half was the field 'Barn Croft' (a meadow), and the east was called 'Chequers' and was managed as arable. The land under G1 and the Bungalow was called 'Hop Garden' and managed as such. Finally, the small area of arable to the east of the Site was called 'Pig Stiles' and was arable.
- 3.18 Much of the land has therefore been rotated through arable and grassland management since the mid-1800s until the 1930s indicating little longevity in the age of habitats, except for the trees present in the former 'Elmlands Shaw' area.
- 3.19 Polygons G2 and G3 (**Figure 3a**) support scattered trees. Historical mapping dating back to 1864 (OS Six Inch, Kent XVIII) show that the trees are likely remnants of the historical woodland 'Elmlands Shaw'. Going back to the 1970s (using freely accessible aerial imagery), Polygons G2, G3, G5, G6 and G7 (**Figure 3a**) still supported significant amounts of Elmlands Shaw around this time.
- 3.20 The land associated with Evelyn Cottage including horse paddocks, stables and grassland polygons G11, G12, G13 and G14 were previously a mosaic of piggery farms and mixed-use orchards, which can be seen in aerial photos from 1945. 1st edition land use maps from 1930 indicate the land was no longer in use as arable and may indicate an earlier establishment date for the mixed use of the land. Some of the Apple *Malus sp.*, and Pear *Pyrus sp.*, trees continue to persist within the land and include trees T61, T89 and T90.
- 3.21 Orchards appear to have been present within Polygons G1, S1 and W1 in 1960. Aerials in 1990 indicate that the centre of the orchard had been removed and incorporated into the neighbouring garden (B1; Map 3a). By the mid-2000s further trees had been removed leaving a narrow belt of individual trees associated with the north and east boundary. Most of these trees had been removed by 2024. A remaining three trees are present within G1.

Priority Habitats

- 3.22 According to MAGIC maps, Polygon G1 to the south-east of the Site is currently mapped as 'Traditional Orchards'. The Site visit confirmed that the orchard no longer exists in the landscape and had been removed. At the time of survey, the land was a large grass lawn that was irregularly mown. Evidence of a previous orchard was limited to several small poorly formed apple trees along the north-east border of G1.
- 3.23 The Priority Habitat Inventory (PHI) is a useful reference and survey-planning tool but is largely based on aerial imagery and topographical/hydrology maps rather than up-to-date ground truthing. EPR's field observations are therefore considered to take precedence over the PHI, where results differ.

4. FIELD SURVEY RESULTS

Habitat Classification

4.1 Full species lists and quadrat data collected during the surveys are tabulated in **Appendix 2**. This data was used in combination with the desk study to produce a detailed habitat map of the Site using the UK Habitat Classification (**Figure 3a and 3b**). The following semi-natural habitat types were identified:

- c1c Cereal crops;
- g3c Other neutral grassland;
- g3c6 *Lolium*-*Cynosurus* neutral grassland;
- g4 Modified grassland
- h3h Mixed scrub;
- w1g Other broadleaved woodland;
- u1b Developed land, sealed surface;
- u1b5 Buildings;
- u1c Artificial unvegetated, unsealed surface;
- u1d Suburban Mosaic of developed and natural surface;
- h2a Native hedgerow;
- h2a5 Species-rich native hedgerow;
- Line of trees (secondary code 33); and
- Individual trees (secondary code 200).

4.2 A description of the main habitat types is set out below.

c1c Cereal Crops

4.3 The Site supports 3.58 ha of arable cropland. The arable fields had 1-2m wide margins with tall ruderal herbs dominated by Cow Parsley *Anthriscus sylvestris*, Hemlock *Conium maculatum*, Cleavers *Galium aparine*, Common Nettle *Urtica dioica* and False Oat-grass *Arrhenatherum elatius*.

g3c Other Neutral Grassland

4.4 The Site supports 4.73 ha of Other Neutral Grassland. The on-site grasslands are mostly managed as informally mown areas or are heavily grazed by horses or cattle, with very short swards that are significantly poached with patchy areas of 'improvement' through re-seeding and fertilising. The grasslands associated with G11, G12 and G13 support the greatest species richness, resulting from the fact that the grassland may have been present within the landscape since at least 1930 when the land was established as orchards.

4.5 G1 is an extensive area of unevenly mown grassland. During the survey season the grassland was sporadically mown in sections, some more frequently than others. The grasslands are

species poor and when left unmown, dominated by False Oat-grass. Other typical species found within the unmown margins included Red Fescue *Festuca rubra*, Yorkshire Fog *Holcus lanatus*, Field Bindweed *Convolvulus arvensis*, Ragwort *Jacobaea vulgaris* and Hogweed *Heracleum spondylium*. The infrequently mown areas supported moderately higher species richness including scattered Smooth Hawk's-beard *Crepis capillaris*, Cut-leaved Cranesbill *Geranium dissectum*, Common Mouse-ear *Cerastium fontanum* and Ground Ivy *Glechoma hederacea*. The grasslands range between 6 species/m² in the False Oat-grass dominated, rankest areas and 11 species/m² in mown areas. Similar grassland communities are found extending along the irregularly mown arable margins associated with polygons G18. The grass margins appear to be cut annually and support False Oat-grass and Cock's Foot *Dactylis glomerata* swards with Cleavers, Common Nettle and Smooth Sow-thistle *Sonchus oleraceus*.

4.6 The grassland mosaic around Evelyn Cottage consists of short-grazed horse paddocks, in some cases with high quantities of bare ground resulting from poaching. The grasslands to the west of the Site (polygons G11-13) support the greatest species richness and best formed grassland communities, meeting the description of the Level 5 UK Habitat type 'g3c6 *Lolium-Cynosurus*' neutral grassland. These grasslands have species rich swards ranging between 15-19 species/m². Constant species include Common Bent *Agrostis capillaris*, Common Mouse-ear, Cock's Foot, Perennial Rye-grass *Lolium perenne*, Ribwort Plantain *Plantago lanceolata*, Selfheal *Prunella vulgaris*, Meadow Buttercup *Ranunculus acris*, Lesser Trefoil *Trifolium dubium* and White Clover *Trifolium repens*. Species such as Crested Dog's Tail *Cynosurus cristatus*, Meadow Barley *Hordeum secalinum*, Red Clover *Trifolium pratense* and Bird's-foot Trefoil *Lotus corniculatus* were recorded infrequently. This grassland community is a typical representation of a more species rich, Other Neutral Grassland habitat.

4.7 All other horse grazed paddocks associated with the Site suffer from significant poaching and disturbance. The grassland communities within these paddocks support a lower species richness ranging from 9 to 14 species/m². The swards are broken up with significant bare ground, a few frequent species including Common Bent, Perennial Rye-grass, Selfheal, Creeping Buttercup *Ranunculus repens* alongside Common Daisy *Bellis perennis*, Smooth Hawk's-beard, Red Fescue, Small Cat's Tail *Phleum bertolonii* and Yorkshire Fog. Areas of significant poaching have been populated by locally abundant Broadleaved Plantain *Plantago major*, Common Knotgrass *Polygonum aviculare* and Annual Meadow Grass *Poa annua*. This grassland community is a typical representation of a moderate species richness, Other Neutral Grassland habitat.

g4 Modified Grassland

4.8 A 0.09ha area of frequently managed, short, goose grazed grassland is associated with two large 'verges' within the curtilage of Evelyn Cottage, G15 and G16 (Figure 3a). These verges are characterised by a species poor sward supporting between 5 and 6 species/m² including Common Bent, Perennial Rye-grass, Daisy, Field Bindweed, Self Heal, Creeping Buttercup and Germaner Speedwell *Veronica chamaedrys*. G16 did support one individual Bird's-foot Trefoil plant and Black Knapweed *Centaurea nigra* plant on the verge. Other than the presence of these two plants the community continued to be species poor and uniform.

h3h Mixed Scrub

4.9 The Site supports 0.16ha of scrub habitat. This consists of h3h Mixed Scrub associated with areas of ungrazed and abandoned field margins. The scrub margins are formed of dense

Cherry Plum *Prunus cerasifera*, Elder *Sambucus nigra*, Blackthorn *Prunus spinosa* and Bramble *Rubus fruticosus*, with scattered areas of mixed scrub including young Ash *Fraxinus excelsior* and Hawthorn *Crataegus monogyna*. Within the horse paddocks, scrub is interspersed with dense stands of Hemlock and Teasel *Dipsacus fullonum*

w1g Other Woodland, Broadleaved

4.10 0.14ha of native broadleaved woodland is present (polygon W1 on **Figure 3a**). The woodland consists of a mix of young Oak *Quercus robur*, Cherry *Prunus avium*, Elder and Ash. The woodland is young, with a loose herbaceous understory of Cow Parsley, Common Nettle, Sweet Violet *Viola odoratum*, Lords and Ladies *Arum maculatum* and Ivy *Hedera helix*.

Other Developed Land, Buildings and Suburban Mosaics

4.11 21 structures were recorded within the Site (See **Figure 3a**).

4.12 Hardstanding and buildings dominate substantial areas in the form of two residential properties and associated gardens, a bungalow 'B1' and a two-story house 'B15.' There is also an area of farm buildings and stables associated with a horse livery 'B3 – B14.'

4.13 The buildings associated with the horse livery are a mixture of modern structures, open faced barns and sheds. Many of these are single skinned wooden clad buildings, corrugated metal sheds and barns and one brick walled stable. Two low semi-circular 'nissen hut' style buildings were also present and in current use as barns.

4.14 The bare earth tracks and ground around the buildings have been mapped as u1c 'Artificial unvegetated, unsealed surface' (see **Figure 3a**).

4.15 Areas of ornamental planting and gardens have been mapped as u1d 'suburban mosaic of developed/natural surfaces' and consist of a mixture of very regularly mown lawns, planted ornamental shrubs and trees around structures B1 and B15. These features were bordered by a diverse mixture of ornamental feature plants and hedgerows.

h2a Native hedgerow

4.16 The Site supports scattered and fragmented native hedgerows along some of its boundaries. Most hedgerows show evidence of heavy flailing and now form low gappy boundary features. H5, H6, H7, H8, H9 and H11b formed a significantly defunct boundary feature dominated by a few woody species. H5 and H6 are formed along earthen banks. The hedgerows are varied in their species composition and support a variety of native species including Elm *Ulmus sp.*, Hawthorn, Field Maple *Acer campestre*, Hazel *Corylus avellana*, Dog Rose *Rosa canina*, Elder, Blackthorn and Sycamore *Acer pseudoplatanus*.

4.17 H11a is a single species hedgerow formed of Hawthorn. The hedgerow is taller and shrubbier than other hedgerows present within the Site.

4.18 H14 and H16 are part of the Site's curtilage and include a mixture of regularly managed boundary shrubs and trees including Hawthorn, Ash, Cherry and Elder alongside scattered Ash and Sycamore trees.

4.19 All the above hedgerows meet the definition of the Hedgerow **Section 41 priority habitat**.

h2a5 Species-rich native hedgerow

4.20 H10 is a species rich native hedgerow and it is heavily flailed leaving it short and in places defunct, but it meets the definition of the Hedgerow **Section 41 priority habitat**. It is a moderately species rich hedgerow, supporting Elder, Hawthorn, Field Maple, *Rosa* sp and Privet within a 30m stretch.

Line of Trees (secondary code 33)

4.21 Several native, mixed native and ornamental tree-lines are present. These are associated with Evelyn Cottage in the north-west of the Site and form a series of treelines. These are formed of Cherry, Silver Birch *Betula pendula*, Rowan *Sorbus aucuparia*, Western Red Cedar *Thuja plicata*, Scot's Pine *Pinus sylvestris*, Sycamore (LOT2, **Map 3b**). LOT1 forms an internal treeline and a continuation of LOT2, which supports a number of mature Western Red Cedar and Cherry trees. A small patch of Knotted Hedge Parsley *Torilis nodosa* was recorded at the base of the trees. The native tree lines fall under the definition of the Hedgerow **Section 41 priority habitat**.

4.22 LOT10 is a short section of poorly formed trees buffering G2 and C1, the treeline is formed of young Ash, Elm and Field Maple.

Individual trees (secondary code 200)

4.23 The Site supports a mix of 45 native and non-native individual trees, the majority of which are associated with the north-west side of the Site (see Down to Earth BS 5837 Tree Constraints Report; DTE #RF23434).

4.24 Of greatest interest are the remnant trees associated with the previously present orchards and 'Elmlands Shaw'. The remnant Pear and Apple trees (T6, T89 and T91) are large for their species, contain cavities, loose bark and rot holes, and have exposed heart wood due to damage. The trees do not meet the definition of a veteran tree under the National Planning Policy Framework (NPPF) but do meet the alternative definition under the Biodiversity Gain Requirements (Irreplaceable Habitat) Regulations 2024.

4.25 The former Elmlands Shaw area supports very large mature Oaks, Hornbeam *Carpinus betulus*, Ash and Field Maple, which are now scattered within horse paddocks. These trees do not meet the NPPF or BNG Veteran tree definitions but collectively form a feature with ecological continuity that has been present within the landscape for long period of time. They support some deadwood and exposed lignum.

4.26 One very large Lime tree *Tilia* sp. (T59) is present within Polygon 16 (**Figure 3a**).

4.27 The Site also supports a variety of large mature to immature scattered native and non-native species including Walnut *Juglans regia*, Sycamore, Ash, Cherry, Willow *Salix* sp. and Apple. These species are present around field boundaries, scattered between the on-site structures and as ornamental planting within gardens.

Flora

4.28 A total of 85 species were recorded during the surveys of the Site (**Appendix 2**).

Species of Conservation Interest

4.29 One species of conservation interest was identified within the Site, associated with the base of trees within the former Elmlands Shaw: Bluebell *Hyacinthoides non-scripta* is listed under Schedule 8 of the Wildlife and Countryside Act 1981 (as amended) and found frequently within the on-site woodland.

Habitat Quality Indicator Species

4.30 Four indicator and typical species of unimproved neutral grasslands were identified within the Site as defined by the Kent Local Wildlife Site (LWS) Criteria v1.9 (KWT, 2024). The species are very rarely scattered across the Site grasslands and do not occur frequently. **Table 4.1** provides further information.

4.31 **Table 4.1** also summarises the total number of habitat quality indicator species for lowland meadow grassland that were recorded within each grassland parcel as per the UK Hab g3a Lowland Meadows criteria, derived from the species tables in **Appendix 2**. This data was used in the habitat classification described above and in the evaluation of the grassland habitats in **Section 5**.

Invasive Non-Native Species

4.32 No Schedule 9 plants as listed on the Wildlife and Countryside Act 1981 (as amended) were recorded within the Site.

Vegetation

4.33 The plant species in **Table 4.1 and Appendix 2** have been used to determine NVC community types where possible.

4.34 As mentioned above under 'Habitat Classification', the grasslands are transitional communities, affected by a combination of intensive grazing, historic disturbance through agricultural practices and attempts to 'improve' productivity through seeding and fertilising. The swards are mostly extremely short grazed or mown with patchy areas of high fertility and reduced species richness. Fields G11 – G13 are interspersed with areas of higher species diversity and appear to support the least damaged and most diverse swards. The boundary lines between the different communities shown on **Figure 4** are therefore intended to be indicative, rather than precise.

4.35 Fields G11, G12 and G13 were subject to more detailed survey work following the identification of some species of interest during initial walkovers. The grassland community is referable to MG6b *Lolium perenne* – *Cynosurus cristatus* grassland, *Anthoxanthum odoratum* subcommunity. This community often is associated with slightly richer swards, which are often fairly herb rich. In this case the grassland community supports a rich cover of grasses including Common Bent, Cock's Foot, Perennial Rye-grass, Soft Brome *Bromus hordaceus*, Crested Dog's Tail and Sweet Vernal Grass *Anthoxanthum odoratum*. A diverse coverage of herbs was recorded including Common Mouse-ear, Self-heal, Ribwort Plantain, Lesser Trefoil, Common Cat's-ear and rarely in the richest areas of the sward, Bird's Foot Trefoil.

4.36 Fields G2 – G8 are heavily grazed swards with significant quantities of poaching, which have been colonised by annual species. NVC analyses of the grassland communities across these

fields highlighted that the communities are transitional between MG6: *Lolium perenne* – *Cynosurus cristatus* grassland and OV21 *Poa annua* – *Plantago major* open habitat communities because of regular and intensive grazing by horses forming trampled areas of grassland. The heavily grazed fields appear to be subject to greater modification and fertility with community constants such as Perennial Ryegrass, Common Bent, White Clover, Creeping Buttercup and Smooth Hawk's-beard frequent throughout the sward. Patchy areas of frequent Annual Meadow Grass, Broadleaved Plantain and Knotgrass occur where the community transitions towards OV21 resulting from heavy trampling.

- 4.37 A range of other grasslands are present within the Site. These grasslands are field / farm margins and irregularly mown marginal areas, which are often dominated by False Oat-grass. These grasslands were generally referable to species poor rank MG1-*Arrhenatherum elatius* grassland communities.
- 4.38 The on-site woodlands are artificially created, too small and immature to refer to an NVC community. The on-site scrub communities are broadly referable to W22 *Prunus spinosa*-*Rubus fruticosus* scrub and W24 *Rubus fruticosus*-*Holcus lanatus* underscrub.

Summary

- 4.39 **Table 4.1** sets out a summary of the habitat classifications and indicator species associated with the grassland fields. **Table 4.2** provides a brief description of each habitat parcel or feature and summarises the results of the surveys in respect of their habitat classification, flora and vegetation.

Table 4.1: Grassland Summary - Vegetation and Habitat Classifications and Indicator Species

		Field Name	G1	G2-G6 and G8	G7	G9	G11	G12 and G17	G13	G15 and G19	G16	G18
Flora												
Species of Conservation Interest present?	See list in Section 4	No	Yes	No	No	No	No	No	No	No	No	No
Habitat Quality:	Total UKHab g3a Lowland Meadow indicator species	1	0	2	0	1	1	1	2	0	0	0
	Total Kent LWS Grassland Indicator Species	2	0	2	0	0	1	1	1	0	0	0
Vegetation												
NVC Community			MG1/ MG6	OV21/ MG6	OV21/ MG6	MG1/ MG6	MG6b	MG6b	MG6b	MG7	MG7	MG1
Habitats												
UK Habitat Classification: Assessment against g3a criteria	At least two out of three of:	>12 species m2 (including grasses and excluding bryophytes)	No	No	No	No	Yes	Yes	Yes	No	No	No
		>30% cover of broadleaved herbs and sedges (excluding <i>T. repens</i> , <i>R. repens</i> , and injurious weeds)	No	Yes	Yes	No	Yes	Yes	Yes	No	No	No
		<10% cover of <i>Lolium</i> and <i>T. repens</i>	Yes	No	No	Yes	No	No	No	No	No	No
	AND	≥ 4 indicators at least 'present'	No	No	No	No	No	No	No	No	No	No
	AND	≥ 1 indicator(s) 'frequent'	No	No	No	No	No	No	No	No	No	No

			Field Name	G1	G2-G6 and G8	G7	G9	G11	G12 and G17	G13	G15 and G19	G16	G18
	AND	≥ 3 indicators as 'occasional'	No	No	No	No	No	No	No	No	No	No	No
g3a Indicator Species													
<i>Centaurea nigra</i>	Black Knapweed									R			
<i>Leucanthemum vulgare</i>	Ox-eye Daisy	R											
<i>Lotus corniculatus</i>	Bird's-foot Trefoil			R			VLF	R	VLO	R			
<i>Scorzoneroidea autumnalis</i>	Autumn Hawkbit			R									
g3a criteria met?			Fail	Fail	Fail	Fail	Fail	Fail	Fail	Fail	Fail	Fail	Fail
UK Habitat Classification			g3c	g3c	g3c	g3c	g3c	g3c	g3c	g3c	g4	g4	g3c
Kent LWS Grassland Indicator Species													
<i>Hordeum secalinum</i>	Meadow Barley			R				O	R				
<i>Centaurea nigra</i>	Black Knapweed									R			
<i>Jacobaea erucifolia</i>	Hoary Ragwort	R											
<i>Leucanthemum vulgare</i>	Ox-eye Daisy	R											
<i>Scorzoneroidea autumnalis</i>	Autumn Hawkbit			R									
Criterion GN2 met (4 species of which 2 are Frequent and 2 Occasional)?			Fail	Fail	Fail	Fail	Fail	Fail	Fail	Fail	Fail	Fail	Fail

5. ECOLOGICAL EVALUATION

Habitats

5.1 As explained in **Section 2**, the evaluation of habitats is typically contained within the evaluation of their component flora and vegetation, as habitat type does not convey an intrinsic level of importance on the CIEEM geographic scale. However, some vegetation communities overlap with habitat types which are afforded weight in planning policy, and this is highlighted where applicable.

5.2 An exception is also made for hedgerows/tree lines and individual trees, which fall under neither flora nor vegetation, but are of ecological importance due to the habitat they provide for other taxa.

Hedgerows and Tree Lines

5.3 The on-site hedgerows and tree lines comprise common and widespread species. Hedgerows are a **Section 41 Priority Habitat**, however as noted in the Priority Habitat description (BRIG, 2008), this applies to most native countryside hedgerows. The value of the hedgerows lies in their role as habitat for other taxa such as bats, birds, invertebrates and terrestrial mammals – for example by providing nesting, shelter and foraging resources and connectivity to the wider landscape. Those at the Site are poorly connected to wider woody habitats, and many of the hedgerows are defunct with significant gaps. These habitats are therefore considered to be of ecological importance at the **Local Level**.

Individual Trees

5.4 Trees T61, T89 and T91 do not qualify as veteran trees under the NPPF 2024, but they do support veteran features such as deadwood, rot holes and cavities and are considered to meet the alternative definition of a veteran tree as set out in the Biodiversity Gain Requirements (Irreplaceable Habitat) Regulations 2024. Therefore, they are likely to be of ecological importance at the **Local Level**.

5.5 The mature and over-mature native trees within the former Elmlands Shaw (i.e. Oak, Sweet Chestnut, Ash and Field Maple) and the very large Lime Tree (T61) have some potential to provide habitat for other taxa and have been present in the landscape of a long period of time, and they are therefore considered to be of **Local Level** importance.

5.6 The other individual trees, of which there are a range of native and naturalised species, within the Site are of limited value and are of ecological importance at the **Within the Zone of Influence** level only.

Flora

5.7 The flora recorded does not meet the criteria for selection as a SSSI for vascular plants (Taylor *et al.*, 2021), nor does it meet the selection criteria for consideration as a LWS in Kent. Overall, the assemblage of plant species recorded is of importance at the **Within the Zone of Influence** level only.

5.8 The historic trees within the former Elmlands Shaw support scattered Bluebells at their base, a species listed under Schedule 8 of the Wildlife and Countryside Act 1981 (as amended), but in

respect of sale only. Bluebell is a common and widespread plant, and this population is also considered to be of importance **Within the Zone of Influence** only.

Vegetation

Grasslands

5.9 None of the grassland communities recorded meet the thresholds for selection as an SSSI (Jefferson *et al.*, 2019) and are therefore not considered to be of national importance.

5.10 The Kent LWS selection criteria v1.9 (KWT, 2024) set out definitions for neutral grasslands of nature conservation interest in the county, including criteria relating to levels of artificial improvement, species diversity, presence of indicator species, and associated fauna of conservation importance. As shown in **Table 4.1**, the on-site grassland communities do not meet any of the core criteria for consideration as a LWS for neutral grassland and are therefore not of County level importance in terms of their vegetation.

5.11 With reference to the survey results set out in **Sections 3 and 4**, the following grassland types are likely to be of ecological importance at the **Local Level** in respect of their vegetation:

- MG6b *Lolium perenne*-*Cynosurus cristatus* grasslands: widespread and common in Kent. Those found at the Site are relatively species-rich and floristically rich, and contribute to the diversity of habitat, nectar resources and species in the landscape.

5.12 All other grasslands with lower species richness, such as the margins and verges with no recognisable NVC community, are of ecological importance at the **Within the Zone of Influence** level only.

Woodlands

5.13 The on-site woodland does not meet the thresholds for consideration as an SSSI (Latham *et al.*, 2018) and is therefore not of national importance.

5.14 The Kent LWS selection criteria v1.9 (KWT, 2024) set out definitions for woodlands of nature conservation interest at the County level, including criteria relating to ancient woodlands, wet woodlands and Lowland Beech and Yew woodlands, and a minimum size threshold of 5ha. The on-site woodland is less than 5ha in size and does not meet the core criteria for consideration as a LWS and is therefore not considered to be of County level importance.

5.15 As set out in **Section 4**, the on-site woodland ground flora is species-poor and supports just one ancient woodland indicator (Sweet Violet), which is listed in the Kent LWS guidance but also widely distributed as a garden escape. On this basis and given the size and age of the woodland, its ecological importance is **Within the Zone of Influence** level only.

Scrub

5.16 The scrub communities at the Site do not meet the thresholds for consideration as an SSSI at the national level or LWS at the County level. Those represented are common and widespread and are of ecological importance at the **Within the Zone of Influence Level** only.

Summary

5.17 **Table 5.1** below sets out a summary evaluation of the habitats, flora and vegetation recorded within the Zol.

Table 5.1: Summary evaluation – habitats, flora and vegetation

Feature	Importance	ID	Notes
Habitats			
SSSIs within the Zol	National	Various, see Section 3	Designated in part for habitats including chalk grassland, beech woodland, parkland and open mosaic habitats.
LWSs within the Zol	County	Grassland and scrub Istead Rise LWS, Pasture South of Istead Rise LWS and Woods, Nash Street LWS	Selected in part for their habitats.
Native Hedgerows and Tree Lines	Local	See Figure 3b	Of value as habitat for other taxa. The native hedgerows and tree lines are also typical examples of Hedgerow S41 Priority Habitat.
Veteran Trees (BNG definition)	Local	T6, T89 and T91 (see Down to Earth BS 5837 Tree Constraints Report; DTE #RF23434)	Three fruit trees associated with a previously present orchard. The trees do not meet the NPPF criteria for Veteran trees. Of value as habitat for other taxa.
Former Elmlands Shaw Trees	Local	T17 – 29, 32, 33, 34, 36 and G16 (Down to Earth BS 5837 Tree Constraints Report; DTE #RF23434).	Remnants of the once present Elmlands Shaw. These trees form a historically present feature with ecological continuity, likely of benefit to other taxa.
Other Trees	Within the Zol	Various	Other individual trees of limited habitat value.
Flora			
Thames Estuary and Marshes Ramsar site	International	n/a	5.6km south-east of the Site, designated in part for its flora.
SSSIs within the Zol	National	Various, see Section 3	Designated in part for their rare plant assemblages and species
Population of Bluebell	Within the Zol	G2, G3, G4 and G5	Listed on Schedule 8 of the Wildlife and Countryside Act 1981 in respect of sale only.
Site-wide flora	Within the Zol	All other parcels	Scattered communities of common and widespread plants. Distributed throughout patches of Neutral Grassland, Woodland, Scrub and Hedgerow habitat.
Vegetation			
MG6b grasslands	Local	G11, G12 and G13	Widespread and common in Kent, but species-rich contributing to the diversity of habitats and species in the landscape. The grasslands do not meet the Kent LWS Selection criteria.

Feature	Importance	ID	Notes
All other communities	Within the Zol	All other parcels	Communities of limited botanical importance that are common and widespread in the landscape including grassland margins and verges with no recognisable NVC community, scattered scrub, young woodland and single species dominated scrub.

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FIGURES

- Figure 1** Site Location
- Figure 2** Quadrat Locations
- Figure 3a** UK Habitat Classification
- Figure 3b** UK Habitat Classification Linear Features
- Figure 4** National Vegetation Classification (NVC)



Figure 1 Site Location

KEY

 Site boundary

Main Map Frame:
SCALE: 1:3,000 at A3

0 50 100 150 200 Metres



CLIENT: Esquire Developments Ltd

PROJECT: Istead Rise, Kent

DATE: 20 November 2025

Istead Rise, Kent 3272/GIS/Bat/Figure_1_SiteLocation_P3272_4248_201125.aprx

Aerial Image: (c) Getmapping plc. & Microsoft, Vanator



Figure 2 Quadrat Locations

KEY

- Site boundary
- 1x1m quadrat
- 2x2m and 1x1m quadrat

SCALE: 1:2,000 at A3

0 25 50 75 100 125 Metres



CLIENT: Esquire Developments Ltd

PROJECT: Istead Rise, Kent

DATE: 08 December 2025

Istead Rise, Kent 3272/GIS/Botany/Figure2_QuadratLocations_P3272_4322_081225.aprx

Aerial Image: Microsoft, Vanator

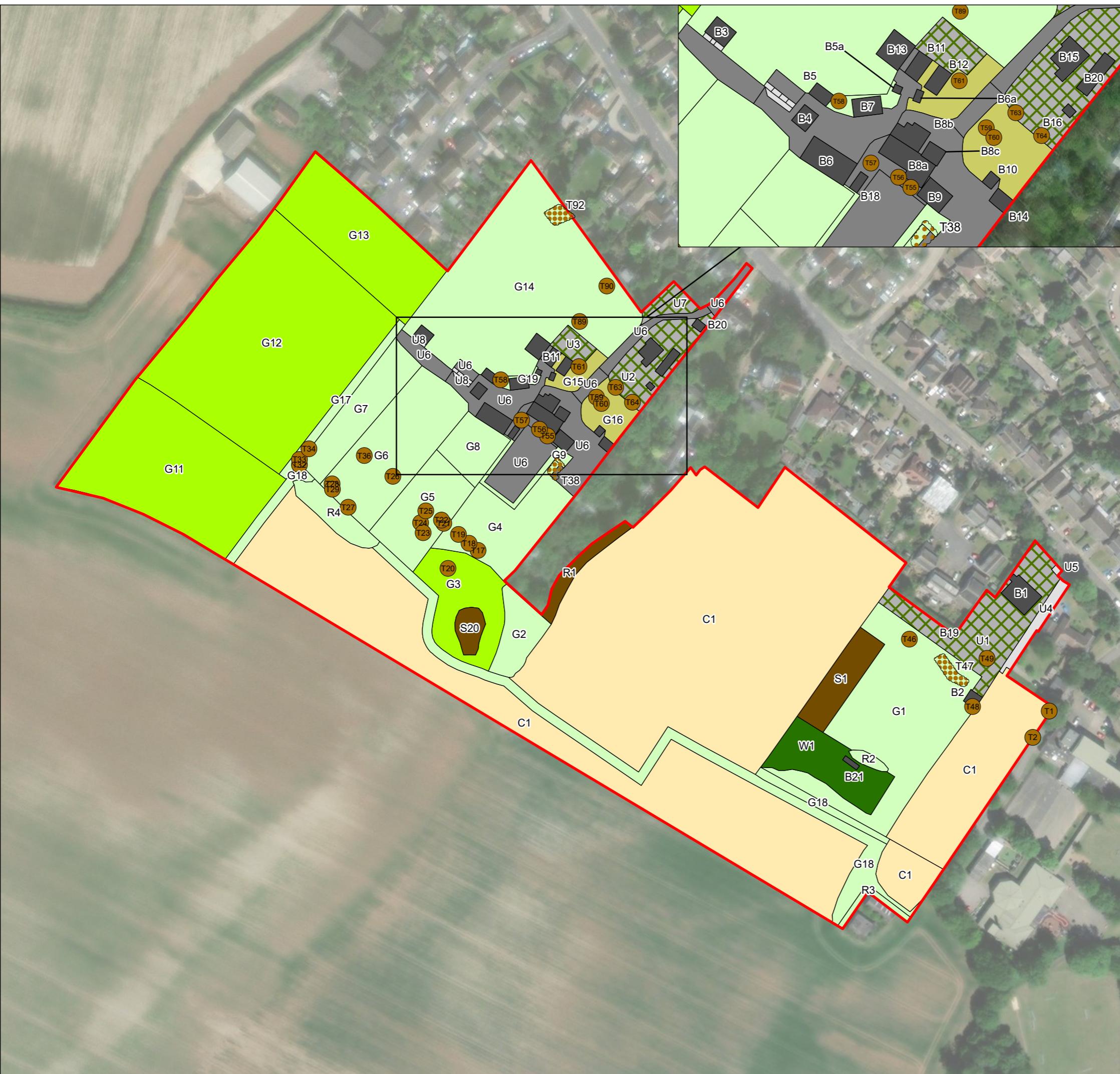


Figure 3a UK Habitat Classification

KEY

-  Site boundary
-  Individual rural trees
-  Rural tree groups
-  c1c - Cereal crops
-  g3c - Other neutral grassland
-  g3c6 - *Lolium-Cynosurus* neutral grassland
-  g4 - Modified grassland
-  h3h - Mixed scrub
-  u1b - Developed land, sealed surface
-  u1b5 - Buildings
-  u1c - Artificial unvegetated, unsealed surface
-  u1d - Suburban mosaic of developed and natural surface
-  w1g - Other broadleaved woodland

Main Map Frame:
SCALE: 1:2,000 at A3



CLIENT: Esquire Developments Ltd

PROJECT: Istead Rise, Kent

DATE: 10 December 2025



CLIENT: Esquire Developments Ltd

PROJECT: Istead Rise, Kent

DATE: 08 December 2025

Istead Rise, Kent 3272/GIS/Botany/Figure3b_LinearFeatures_P3272_4322_081225.aprx

Aerial Image: Microsoft, Vanator



Figure 4 National Vegetation Classification (NVC)

KEY

- Site boundary
- MG6: *Lolium perenne*-*Cynosurus cristatus* grassland
- MG6b: *Lolium perenne*-*Cynosurus cristatus* grassland, *Anthoxanthum odoratum* sub-community



CLIENT: Esquire Developments Ltd

PROJECT: Istead Rise, Kent

DATE: 19 November 2025

Istead Rise, Kent 3272/GIS/Botany/Figure4_NVC_P3272_4244_191125.aprx

Aerial Image: Microsoft, Vantor

Appendix 1

Summary of Relevant Legislation

Information about nature conservation related legislation/policy can be found in the Outline Ecological Impact Assessment (EclA) report and associated appendices. The following is a summary of botany-specific legislation and policy.

Legislation

The Conservation of Habitats and Species Regulations 2017 (as amended) requires an appropriate authority (in England this is Natural England) to monitor the conservation status of “natural habitat types of national interest and species of natural interest”, as listed on Annex I and Annexes II, IV and V respectively of the 1992 EU Habitats Directive. The main objective of the Regulations In respect of these nationally important habitats and species is to maintain or restore them to a favourable conservation status in their natural range.

A total of 77 Annex I habitats and nine Annex II higher plant species occur in the UK; these are mostly protected within designated Special Areas of Conservation (SACs) but may occasionally occur outside of these sites.

The Wildlife and Countryside Act 1981 (as amended) provides for the designation of sites of national importance for flora and fauna (SSSIs). In addition, the Act protects certain plant species from intentional picking, uprooting or destruction under Schedule 8, and prevents the spread of invasive non-native species listed under Schedule 9.

Section 40 of the Natural Environment and Rural Communities (NERC) Act 2006 (as amended) places a ‘Biodiversity Duty’ on all public bodies to have regard to the conservation of biodiversity when carrying out their normal functions. This includes giving consideration for the restoration and enhancement of species and habitats.

Section 41 (S41) of the Act required the Secretary of State to publish a list of habitats and species which are of Principal Importance for the conservation of biodiversity in England – commonly referred to as “priority habitats and species”. Public authorities have a responsibility to give specific consideration to the “S41 list” when exercising their normal functions. In total, 56 habitat types and 152 vascular plant species are included within the S41 list.

Policy and Strategies

The National Planning Policy Framework (NPPF) 2025 states that “*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 compensatory strategy exists*” (para 186c).

Ancient woodland is defined in the NPPF as “*an area that has been wooded continuously since at least 1600 AD. It includes ancient semi-natural woodland and plantations on ancient woodland sites*”.

Ancient/veteran trees are defined in the NPPF as “*a tree which, because of its age, size and condition, is of exceptional biodiversity, cultural or heritage value. All ancient trees are veteran trees*”.

Not all veteran trees are old enough to be ancient but are old relative to other trees of the same species. Very few trees of any species reach the ancient life-stage."

The criteria for NPPF veteran trees is materially greater than that set by the Biodiversity Net Gain Regulations, and if a tree is considered a BNG veteran tree – it does not mean it is also a NPPF veteran.

Appendix 2

Full Grassland Species Lists and Quadrat Data

Full species data tables for each of the habitat parcels are provided below.

The DAFOR scale of relative frequency is used, where D = Dominant, A = Abundant, F = Frequent, O = Occasional and R = Rare. The prefix 'L' is used for 'locally' and 'V' for 'very'. 'P' denotes 'Present', where no record of frequency was recorded.

1x1m and 2x2m quadrat data from the grasslands is also tabulated below.

For the 1x1m quadrats, which were undertaken for the purposes of assigning UKHab types and to inform Biodiversity Net Gain condition assessments, species were simply recorded as 'present', denoted by a 1.

For the 2x2m NVC quadrats, the DOMIN scale of cover was used where 10 = 91-100% cover, 9 = 76-90%, 8 = 51-75%, 7 = 34-50%, 6 = 26-33%, 5 = 11-25%, 4 = 4-10%, 3 = <4% (many individuals), 2 = <4% (several individuals) and 1 = <4% (few individuals). NVC quadrats were completed in the more species-rich grasslands in order to inform an assessment of whether they met the criteria for Lowland Meadow habitat.

Table A2.1: Area G1a and G1c species lists and quadrats

Species	Common Name	G1a	G1aQ1	G1c	G1cQ1	Kent Neutral Grassland LWS Species	UKHab g3a Indicator Species
Quadrats							
Trees							
<i>Prunus cerasus</i>	Dwarf Cherry	LF		F			
Grasses							
<i>Agrostis stolonifera</i>	Creeping Bent			A	1		
<i>Anisantha sterilis</i>	Barren Brome	R					
<i>Arrhenatherum elatius</i>	False Oat-grass	D	1	O	1		
<i>Bromus hordeaceus</i>	Soft Brome	O		O			
<i>Dactylis glomerata</i>	Cocksfoot	O					
<i>Festuca rubra</i>	Red Fescue	O	1	F	1		
<i>Holcus lanatus</i>	Meadow Soft-grass	F	1	A	1		
<i>Lolium perenne</i>	Perennial Rye-grass			R	1		
<i>Poa trivialis</i>	Rough-stalked Meadow-grass	R		A			
Other herbaceous species							
<i>Achillea millefolium</i>	Yarrow	R					
<i>Anthriscus sylvestris</i>	Cow Parsley	LA					
<i>Bellis perennis</i>	Daisy			O			
<i>Cerastium fontanum</i>	Common Mouse-ear			F	1		
<i>Convolvulus arvensis</i>	Field Bindweed	O	1	F	1		
<i>Crepis capillaris</i>	Smooth Hawk's-beard	R		O	1		
<i>Geranium dissectum</i>	Cut-leaved Crane's-bill	R		O	1		
<i>Geum urbanum</i>	Wood Avens	O					
<i>Glechoma hederacea</i>	Ground Ivy	R		F	1		
<i>Heracleum sphondylium</i>	Hogweed	O	1				
<i>Hypochaeris radicata</i>	Cat's-ear			R			
<i>Jacobaea erucifolia</i>	Hoary Ragwort	R				1	
<i>Jacobaea vulgaris</i>	Ragwort	R	1	O			
<i>Leontodon saxatilis</i>	Lesser Hawkbit			R			

Species	Common Name	G1a	G1aQ1	G1c	G1cQ1	Kent Neutral Grassland LWS Species	UKHab g3a Indicator Species
Quadrats							
<i>Leucanthemum vulgare</i>	Ox-eye Daisy	R				1	1
<i>Medicago arabica</i>	Spotted Medick	R					
<i>Plantago lanceolata</i>	Ribwort Plantain	R					
<i>Potentilla reptans</i>	Creeping Cinquefoil	R					
<i>Prunella vulgaris</i>	Selfheal			F	1		
<i>Ranunculus repens</i>	Creeping Buttercup	R		F			
<i>Rumex crispus</i>	Curled Dock	R					
<i>Taraxacum sp.</i>	Dandelion	R					
<i>Trifolium pratense</i>	Red Clover	R					
<i>Urtica dioica</i>	Stinging Nettle	LF					
<i>Veronica chamaedrys</i>	Germander Speedwell	R		F			
<i>Vicia sativa</i>	Common Vetch	R					
<i>Viola odorata</i>	Sweet Violet	R		O			
Total number of species		29	6	20	11	2	1

Table A2.2: Field G7 and G9 species lists and quadrats

Species	Common Name	G7	G7Q1		G7Q2		G7Q3		G9		Kent Neutral Grassland LWS Species	UKHab g3a Indicator Species	
			G7Q1 a 1x1	G7Q1 b 2x2	G7Q2 a 1x1	G7Q2 a 2x2	G7Q3 a 1x1	G7Q3 b 2x2	G9	G9Q1			
Quadrats													
Grasses													
<i>Agrostis capillaris</i>	Common Bent	A	1	7	1	6	1	8	1	1			
<i>Anthoxanthum odoratum</i>	Sweet Vernal Grass								1	1			
<i>Bromus hordeaceus</i>	Soft Brome	LO					1	5	1				
<i>Dactylis glomerata</i>	Cocksfoot	R							1	1			
<i>Festuca rubra</i>	Red Fescue								1				
<i>Holcus lanatus</i>	Meadow Soft-grass	O			1	2			1				
<i>Hordeum murinum</i>	Wall Barley	VLO											
<i>Hordeum secalinum</i>	Meadow Barley	R									1		
<i>Lolium perenne</i>	Perennial Rye-grass	A	1	7	1	8	1	7					
<i>Phleum bertolonii</i>	Small Cat's-tail	F	1	4	1	4	1	3					
<i>Poa annua</i>	Annual Meadow-grass	F			1	4	1	3					
<i>Poa pratensis</i>	Smooth-stalked Meadow-grass	R											
<i>Poa trivialis</i>	Rough-stalked Meadow-grass								1				
Other herbaceous species													
<i>Bellis perennis</i>	Daisy	O	1	3			1	3					
<i>Cerastium glomeratum</i>	Sticky Mouse-ear	R	1	2									
<i>Cirsium vulgare</i>	Spear Thistle								1	1			
<i>Convolvulus arvensis</i>	Field Bindweed	LF					1	3	1	1			
<i>Crepis capillaris</i>	Smooth Hawk's-beard	F	1	3			1	5	1	1			
<i>Geranium molle</i>	Dovesfoot Cranesbill	R					1	1					
<i>Heracleum sphondylium</i>	Hogweed								1				
<i>Hypericum perforatum</i>	Perforate St John's-wort	R							1				

Species	Common Name	G7	G7Q1		G7Q2		G7Q3		G9		Kent Neutral Grassland LWS Species	UKHab g3a Indicator Species
			G7Q1 a 1x1	G7Q1 b 2x2	G7Q2 a 1x1	G7Q2 a 2x2	G7Q3 a 1x1	G7Q3 b 2x2	G9	G9Q1		
Quadrats												
<i>Hypochaeris radicata</i>	Cat's-ear	R							1			
<i>Jacobaea vulgaris</i>	Ragwort	R										
<i>Lotus corniculatus</i>	Bird's-foot Trefoil	R										1
<i>Matricaria discoidea</i>	Pineappleweed	LO										
<i>Plantago lanceolata</i>	Ribwort Plantain	R										
<i>Plantago major</i>	Greater Plantain	F	1	3	1	2	1	2				
<i>Polygonum aviculare</i>	Knotgrass	O-VLD			1	3	1	2				
<i>Prunella vulgaris</i>	Selfheal	F	1	5	1	5	1	4	1	1		
<i>Ranunculus repens</i>	Creeping Buttercup	F	1	4	1	3	1	3	1			
<i>Rubus fruticosus</i>	Blackberry								1			
<i>Rumex crispus</i>	Curled Dock	R							1			
<i>Rumex sanguineus</i>	Wood Dock	VLO										
<i>Scorzonerooides autumnalis</i>	Autumn Hawkbit	R	1	2							1	1
<i>Taraxacum</i> sp.	Dandelion	O	1	1	1	2	1	3	1	1		
<i>Trifolium dubium</i>	Lesser Trefoil	R	1	2	1	2			1	1		
<i>Trifolium repens</i>	White Clover	A			1	1	1	5	1	1		
<i>Urtica dioica</i>	Stinging Nettle	R							1			
<i>Veronica chamaedrys</i>	Germander Speedwell								1	1		
Total number of species		31	11	12	11	12	15	16	21	9	2	2

Table A2.3: Field G2-G6 species lists and quadrats

Species	Common Name	G2-G6 and G8	G10Q1		G10Q2		G10Q3		G10Q4		Kent Neutral Grassland LWS Species	UKHab g3a Indicator Species
			G10Q1a 1x1	G10Q 1b 2x2	G10Q 2a 1x1	G10Q 2a 2x2	G10Q 3a 1x1	G10Q 3b 2x2	G10Q 4a 1x1	G10Q 4b 2x2		
Quadrats												
<i>Convolvulus arvensis</i>	Field Bindweed	O										
<i>Crepis capillaris</i>	Smooth Hawk's-beard	F	1	3	1	4	1	3				
<i>Dipsacus fullonum</i>	Teasel	VLO										
<i>Galium album</i>	Hedge Bedstraw	R										
<i>Geranium dissectum</i>	Cut-leaved Crane's-bill	O	1	1	1	1	1	1				
<i>Geranium molle</i>	Dovesfoot Cranesbill	R										
<i>Glechoma hederacea</i>	Ground Ivy	VLO				2						
<i>Hyacinthoides non-scripta</i>	Bluebell	R										
<i>Hypericum perforatum</i>	Perforate St John's-wort	R										
<i>Jacobaea vulgaris</i>	Ragwort	R		1								
<i>Lepidium didymum</i>	Lesser Swine-cress	VLF										
<i>Matricaria discoidea</i>	Pineappleweed	VLF										
<i>Plantago lanceolata</i>	Ribwort Plantain	R										
<i>Plantago major</i>	Greater Plantain	F										
<i>Polygonum aviculare</i>	Knotgrass	VLF										
<i>Prunella vulgaris</i>	Selfheal	A	1	5	1	4	1	4	1	6		
<i>Ranunculus repens</i>	Creeping Buttercup	A	1	4	1	3	1	3	1	4		
<i>Rubus fruticosus</i>	Blackberry	VLD										
<i>Rumex crispus</i>	Curled Dock	O										
<i>Rumex obtusifolius</i>	Broad-leaved Dock	R										
<i>Rumex sanguineus</i>	Wood Dock	VLF				1						
<i>Sagina apetala</i>	Annual Pearlwort	O	1	2								
<i>Sonchus asper</i>	Prickly Sow-thistle	R				1		1				
<i>Taraxacum sp.</i>	Dandelion	F			1	2			1	2		
<i>Trifolium dubium</i>	Lesser Trefoil	LO					1	3				

Species	Common Name	G2-G6 and G8	G10Q1		G10Q2		G10Q3		G10Q4		Kent Neutral Grassland LWS Species	UKHab g3a Indicator Species
			G10Q1a 1x1	G10Q 1b 2x2	G10Q 2a 1x1	G10Q 2a 2x2	G10Q 3a 1x1	G10Q 3b 2x2	G10Q 4a 1x1	G10Q 4b 2x2		
Quadrats												
<i>Trifolium repens</i>	White Clover	A		3			1	3	1	4		
<i>Urtica dioica</i>	Stinging Nettle	O-VLA										
<i>Verbena officinalis</i>	Vervain	R										
<i>Veronica chamaedrys</i>	Germander Speedwell	O	1	3		2						
<i>Viola odorata</i>	Sweet Violet	R										
Total number of species		50	13	16	12	16	15	17	11	11	2	2

Table A2.4: Field G11a-G11b species lists and quadrats

Species	Common Name	G11a	G11a Q1		G11b	G11b Q1		G11b Q2		Kent Neutral Grassland LWS Species	UKHab g3a Indicator Species	
			G11a Q1a 1x1	G11a Q1b 1x1		G11b Q1a 1x1	G11b Q1b 2x2	G11b Q2a 1x1	G11b Q2b 2x2			
Quadrats												
Grasses												
<i>Agrostis capillaris</i>	Common Bent	A	1	7	A	1	5	1	7			
<i>Alopecurus pratensis</i>	Meadow Foxtail				F	1	3	1	4			
<i>Anthoxanthum odoratum</i>	Sweet Vernal Grass	F	1	5	F			1	4			
<i>Bromus hordeaceus</i>	Soft Brome	F			A	1	7	1	7			
<i>Cynosurus cristatus</i>	Crested Dog's-tail	O			VLF							
<i>Dactylis glomerata</i>	Cocksfoot	F	1	5	F	1	4	1	3			
<i>Holcus lanatus</i>	Meadow Soft-grass				O-LF	1	3	1	3			
<i>Lolium perenne</i>	Perennial Rye-grass	A	1	7	A	1	7	1	5			
<i>Poa pratensis</i>	Smooth-stalked Meadow-grass	O			O							
<i>Poa trivialis</i>	Rough-stalked Meadow-grass				R	1	2					
Other herbaceous species												
<i>Bellis perennis</i>	Daisy	O			R							
<i>Cerastium fontanum</i>	Common Mouse-ear	F	1	3	F	1	3	1	3			
<i>Cerastium glomeratum</i>	Sticky Mouse-ear	F	1	2	LF	1	3					
<i>Convolvulus arvensis</i>	Field Bindweed	R			O			1	3			
<i>Crepis biennis</i>	Rough Hawk's-beard				R							
<i>Crepis capillaris</i>	Smooth Hawk's-beard	O		1	O	1	1					
<i>Galium album</i>	Hedge Bedstraw				O							
<i>Geranium dissectum</i>	Cut-leaved Crane's-bill	O	1	2	F	1	4	1	2			
<i>Hypericum perforatum</i>	Perforate St John's-wort				O		2	1	3			
<i>Hypochaeris radicata</i>	Cat's-ear	A	1	5	A	1	5	1	4			

Species	Common Name	G11a	G11a Q1		G11b	G11b Q1		G11b Q2		Kent Neutral Grassland LWS Species	UKHab g3a Indicator Species
			G11a Q1a 1x1	G11a Q1b 1x1		G11b Q1a 1x1	G11b Q1b 2x2	G11b Q2a 1x1	G11b Q2b 2x2		
Quadrats					O						
<i>Jacobaea vulgaris</i>	Ragwort	R			VLF						1
<i>Lotus corniculatus</i>	Bird's-foot Trefoil										
<i>Plantago lanceolata</i>	Ribwort Plantain	A	1	5	A	1	5	1	3		
<i>Prunella vulgaris</i>	Selfheal	A	1	5	A	1	4	1	4		
<i>Ranunculus acris</i>	Meadow Buttercup	F	1	4	O	1	2	1	2		
<i>Ranunculus repens</i>	Creeping Buttercup	O	1	3	R						
<i>Sagina apetala</i>	Annual Pearlwort	R	1	1	O						
<i>Silene vulgaris</i>	Bladder Campion				R						
<i>Taraxacum</i> sp.	Dandelion	O	1	3	O			1	2		
<i>Trifolium dubium</i>	Lesser Trefoil	F	1	3	F	1	3	1	3		
<i>Trifolium pratense</i>	Red Clover	R	1	2	O	1	2				
<i>Trifolium repens</i>	White Clover	A	1	6	A	1	6	1	5		
<i>Urtica dioica</i>	Stinging Nettle	R			R						
<i>Veronica serpyllifolia</i>	Thyme-leaved Speedwell				F		2	1	2		
Total number of species		25	17	18	34	18	20	19	19	0	1

Table A2.5: Field G12 species lists and quadrats

Species	Common Name	G12	G12 Q1		G12 Q2		G12 Q3		G12 Q3		Kent Neutral Grassland LWS Species	UKHab g3a Indicator Species
			G12 Q1a 1x1	G12 Q1b 2x2	G12 Q2a 1x1	G12 Q2b 2x2	G12 Q2a 1x1	G12 Q2b 2x2	G12 Q2a 1x1	G12 Q2b 2x2		
<i>Veronica serpyllifolia</i>	Thyme-leaved Speedwell	R										
Total number of species		50	13	16			12	16	15	17	2	2

Table A2.6: Field G13 species lists and quadrats

Species	Common Name	G13	G13 Q1		G13 Q2		Kent Neutral Grassland LWS Species	UKHab g3a Indicator Species
			G13 Q1a 1x1	G13 Q1b 2x2	G13 Q2a 1x1	G13 Q2b 2x2		
Grasses								
<i>Agrostis capillaris</i>	Common Bent	A	1	7	1	7		
<i>Alopecurus pratensis</i>	Meadow Foxtail	O						
<i>Bromus hordeaceus</i>	Soft Brome	F-LA	1	6	1	3		
<i>Cynosurus cristatus</i>	Crested Dog's-tail	O-LF	1	4	1	4		
<i>Dactylis glomerata</i>	Cocksfoot	O	1	3	1	3		
<i>Holcus lanatus</i>	Meadow Soft-grass	F	1	2	1	4		
<i>Hordeum secalinum</i>	Meadow Barley	R	1	4			1	
<i>Lolium perenne</i>	Perennial Rye-grass	A	1	7	1	7		
<i>Phleum bertolonii</i>	Small Cat's-tail	O-LF	1	3				
<i>Phleum pratense</i>	Meadow Cat's-tail	O-LF						
<i>Poa pratensis</i>	Smooth-stalked Meadow-grass	R	1	2				
Other herbaceous species								
<i>Bellis perennis</i>	Daisy	O	1	3				
<i>Cerastium fontanum</i>	Common Mouse-ear	F	1	3	1	4		
<i>Cerastium glomeratum</i>	Sticky Mouse-ear	O	1	1				
<i>Cirsium arvense</i>	Creeping Thistle	R						
<i>Convolvulus arvensis</i>	Field Bindweed	LF	1	4				

Species	Common Name	G13	G13 Q1		G13 Q2		Kent Neutral Grassland LWS Species	UKHab g3a Indicator Species
			G13 Q1a 1x1	G13 Q1b 2x2	G13 Q2a 1x1	G13 Q2b 2x2		
Quadrats								
<i>Crepis capillaris</i>	Smooth Hawk's-beard	O			1	4		
<i>Geranium dissectum</i>	Cut-leaved Crane's-bill	O						
<i>Helminthotheca echooides</i>	Bristly Oxtongue	R						
<i>Heracleum sphondylium</i>	Hogweed	R						
<i>Hypericum perforatum</i>	Perforate St John's-wort	R						
<i>Hypochaeris radicata</i>	Cat's-ear	O						
<i>Jacobaea vulgaris</i>	Ragwort	R						
<i>Lotus corniculatus</i>	Bird's-foot Trefoil	VLO						1
<i>Medicago lupulina</i>	Black Medick	R		3				
<i>Plantago lanceolata</i>	Ribwort Plantain	O	1	3	1	3		
<i>Plantago major</i>	Greater Plantain	O	1	4				
<i>Prunella vulgaris</i>	Selfheal	A	1	3	1	4		
<i>Ranunculus acris</i>	Meadow Buttercup	O	1	3	1	3		
<i>Ranunculus repens</i>	Creeping Buttercup	R	1	2				
<i>Rumex acetosa</i>	Common Sorrel	R						
<i>Sagina apetala</i>	Annual Pearlwort	O						
<i>Taraxacum</i> sp.	Dandelion	F			1	3		
<i>Trifolium dubium</i>	Lesser Trefoil	F	1	2	1	2		
<i>Trifolium pratense</i>	Red Clover	O	1	3				
<i>Trifolium repens</i>	White Clover	A	1	5	1	5		
<i>Vicia sativa</i>	Common Vetch	R						
Total number of species		37	21	22	14	14	1	1

Table A2.7: Field G15 – G16 species lists and quadrats

Species	Common Name	G15	G15Q1	G16	G16Q1	Kent Neutral Grassland LWS Species	UKHab g3a Indicator Species
Quadrats							
Grasses							
<i>Agrostis capillaris</i>	Common Bent	1	1	1	1		
<i>Bromus hordeaceus</i>	Soft Brome	1					
<i>Dactylis glomerata</i>	Cocksfoot	1					
<i>Festuca rubra</i>	Red Fescue	1					
<i>Holcus lanatus</i>	Meadow Soft-grass	1					
<i>Lolium perenne</i>	Perennial Rye-grass	1	1	1	1		
Other herbaceous species							
<i>Ballota nigra</i>	Horehound	1					
<i>Bellis perennis</i>	Daisy		1	1			
<i>Centaurea nigra</i>	Black Knapweed	1					
<i>Cirsium arvense</i>	Creeping Thistle	1					
<i>Cirsium vulgare</i>	Spear Thistle	1					
<i>Convolvulus arvensis</i>	Field Bindweed			1	1		
<i>Geranium dissectum</i>	Cut-leaved Crane's-bill	1					
<i>Geranium molle</i>	Dovesfoot Cranesbill	1					
<i>Lepidium didymum</i>	Lesser Swine-cress	1		1			
<i>Lotus corniculatus</i>	Bird's-foot Trefoil	1					
<i>Matricaria discoidea</i>	Pineappleweed	1					
<i>Plantago major</i>	Greater Plantain	1					
<i>Polygonum aviculare</i>	Knotgrass	1		1			
<i>Prunella vulgaris</i>	Selfheal	1	1				
<i>Ranunculus repens</i>	Creeping Buttercup	1		1	1		
<i>Rumex obtusifolius</i>	Broad-leaved Dock	1	1	1			
<i>Trifolium repens</i>	White Clover	1		1			
<i>Urtica dioica</i>	Stinging Nettle	1	1	1			

Species	Common Name	G15	G15Q1	G16	G16Q1	Kent Neutral Grassland LWS Species	UKHab g3a Indicator Species
Quadrats							
<i>Urtica urens</i>	Small Nettle	1					
<i>Veronica chamaedrys</i>	Germander Speedwell			1	1		
Total number of species		37				1	1