

A417 Missing Link
TR010056

6.4 Environmental Statement
Appendix 8.3 NVC Woodland Survey
Report

Planning Act 2008

APFP Regulation 5(2)(a)
Infrastructure Planning (Applications: Prescribed Forms and
Procedure) Regulations 2009

Volume 6

May 2021

Infrastructure Planning

Planning Act 2008

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(Applications: Prescribed Forms
and Procedure) Regulations 2009**

A417 Missing Link

Development Consent Order 202[x]

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Appendix 8.3 NVC Woodland Survey Report**

Regulation Number:	5(2)(a)
Planning Inspectorate Scheme Reference	TR010056
Application Document Reference	6.4
Author:	A417 Missing Link

Version	Date	Status of Version
C01	May 2021	Application Submission

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Executive Summary

The proposed A417 Missing Link scheme (hereafter referred to as ‘the scheme’) aims to provide a dual carriageway to a stretch of single carriageway between the Cowley roundabout and Crickley Hill in Gloucestershire; the 5.5km section is the only remaining section of single carriageway. The scheme would increase capacity by creating a free-flowing link between the Brockworth Bypass and Cowley roundabout and remove the at-grade junction with the A436, resulting in a continuous flow between the M4 Junction 15 (Swindon) and the M5 Junction 11a (Gloucester/Cheltenham).

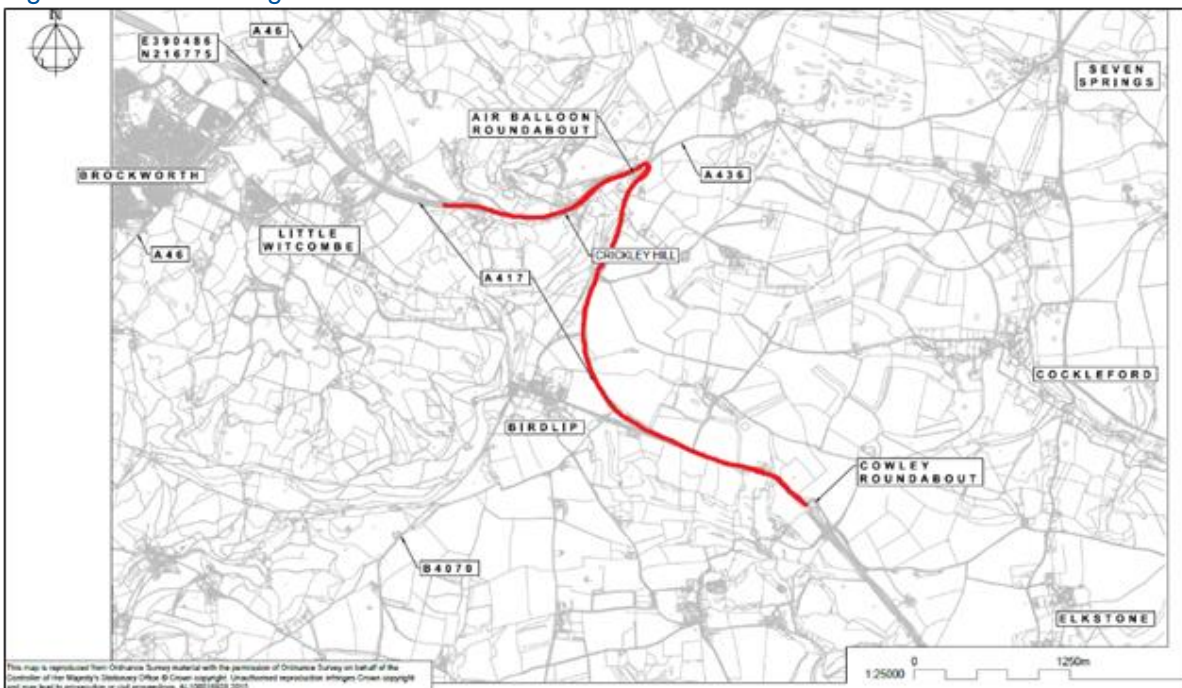
National Vegetation Classification (NVC) field surveys to identify woodland plant communities were undertaken by Mott MacDonald in 2019. The field surveys assigned a total of 8 separate plant communities for the 24 land parcels surveyed.

1. Introduction

1.1. Background

1.1.1. The A417/A419 provides an important link between the Midlands/North and South of England, between Gloucester and Swindon, and as an alternative to the M5/M4 route via Bristol. The section of the A417 near Birdlip, known as the 'missing link', forms the only section of single carriageway along the route, with an at-grade junction located at the 'Air Balloon' public house. The single carriageway is located between the Cowley roundabout and the base of Crickley Hill, a 5.5km stretch shown on Figure 1 below.

Figure 1: A417 Missing Link Scheme Location Plan



Source: GiGi GIS Portal. Crown Copyright 2016 100030649

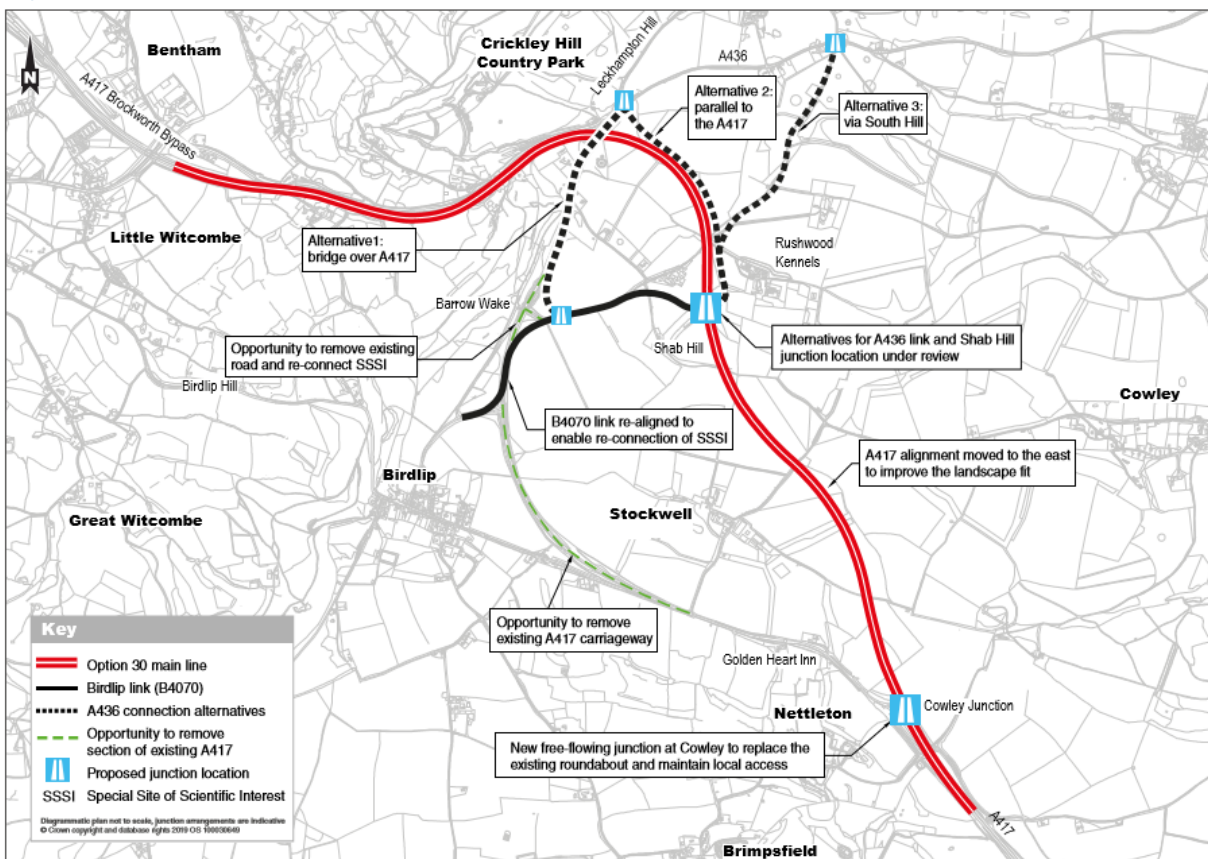
1.2. Scheme Proposal

1.2.1. The proposed scheme would provide a dual carriageway to improve the current Missing Link section of single carriageway of the A417 between Cowley roundabout and Crickley Hill.

1.2.2. Any proposed scheme would aim to increase capacity by creating a free-flowing link between the Brockworth Bypass and the Cowley roundabout and remove the at-grade junction with the A436 (Air Balloon roundabout). This Missing Link will provide a free-flowing journey between Swindon (M4 Junction 15) and Gloucester / Cheltenham (M5 Junction 11).

- 1.2.3. The preferred route for the scheme was confirmed as Option 30 by the Secretary of State in March 2019 (see Figure 2 below). The scheme comprises the construction of a new dual carriageway to replace the existing single carriageway section between Brockworth bypass and Cowley Roundabout. It is predominately an "offline" scheme but approximately a third of the route follows the existing A417 route corridor at Crickley Hill.
- 1.2.4. A new link road would be built between the slip road junction at Shab Hill and the existing A417 to connect traffic to and from Birdlip and the A436 with the new A417. This new link road would end in a new roundabout near Barrow Wake.

Figure 2: A417 Preferred Route Announcement



- 1.2.5. Figure 1.2 above shows how there were three A436 link road alternative connections. Alternative 2 is the option taken forward for assessment in the Environmental Statement.

1.3. Objectives and Scope of the Report

- 1.3.1. The objectives and scope of the report are:

- to identify areas of notable woodland with potential to be directly or indirectly impacted by the scheme and carry out a NVC survey of those areas;
- to assess the composition and structure of the plant communities identified, and assign an NVC plant community category;
- to present the methods, results and constraints of the National Vegetation Classification (NVC) survey;

1.4. Study Area

- 1.4.1. This area is within the Cotswolds Area of Outstanding Natural Beauty (AONB). The Cotswolds are nationally important for their rare limestone grassland habitat and for ancient beechwoods with rich flora. Some Cotswolds plants are so rare that they have specific legal protection under the Wildlife and Countryside Act 1981.
- 1.4.2. Motorways, together with a central location, make the Cotswolds accessible to a huge urban visitor area including Bristol, London and the West Midlands. The AONB, with 'honey pot' villages such as Bourton-on-the-Water, Bibury and Castle Combe, is a national and international tourist destination as well as an important local recreation area¹.

1.5. Zone of Influence

- 1.5.1. Guidance on ecological assessments recommends that all ecological features that occur within a zone of influence (Zoi) for a proposed scheme are investigated (CIEEM, 2016). The potential Zoi includes:
- areas to be directly within the land take for the proposed scheme and access that could cause loss of woodland or severance of woodland habitat;
 - areas that would be temporarily affected during construction that cause loss or disturbance to woodland habitats, and;

¹ Landscapes for Life. Cotswolds AONB. Available from <https://landscapesforlife.org.uk/about-aonbs/aonbs/cotswolds>

- areas where there is a risk of noise and light disturbance during construction and/or operation.

1.5.2. For the NVC woodland survey, the zone of influence considered land up to 200m from the schemes construction footprint, to account for potential air quality impacts which have potential to have adverse impacts within 200m of the air pollution source.

1.6. Legislative and Policy Framework

1.6.1. The construction and operational activities for the proposed works must comply with International, European and UK nature conservation legislation, and with national and local biodiversity policies. The two main pieces of legislation on nature conservation are the Wildlife and Countryside Act 1981 (WCA 1981) and, the Conservation of Habitats and Species Regulations 2017 which transposes Council Directive 92/43/EEC, on the conservation of natural habitats and of wild fauna and flora (EC Habitats Directive), into national law.

1.6.2. Other key national policies which influence the ecology and nature conservation assessments are the:

- National Policy Statement for National Networks (2014);
- The Natural Environment and Rural Communities (NERC) Act 2006;
- UK Post-2010 Biodiversity Framework (2012); and
- Biodiversity 2020: A strategy for England's wildlife and ecosystem service (2011).

1.6.3. The relevant local biodiversity policy is the Gloucestershire Local Nature Partnership (GLNP), GNLP Strategy; The Future For Nature 2019-2022.

1.6.4. **Gloucestershire Local Nature Partnership (GLNP), GNLP Strategy; The Future For Nature 2019-2022.** The three year strategy for the GLNP is designed to provide a top-level set of priorities for the group to promote and, with its constituent partners, to take action to deliver in order to conserve and enhance the county's biodiversity². No specific NVC communities have been described within this strategy.

1.6.5. **Ancient Woodland Inventory.** The Ancient Woodland Inventory identifies woodlands that have had continuous woodland cover for some centuries. The

² Gloucestershire Local Nature Partnership (2019). The Future For Nature 2019-2022. Available from <https://www.gloucestershirenature.org.uk/our-strategy>

Ancient Woodland Inventory has become an important tool for policy makers and planners. Although ancient woodland may be a feature of statutorily designated sites, it is not in itself a statutory designation. However, ancient woodland is given considerable protection through the planning process.

2. Methodology

2.1. Field Survey

- 2.1.1. The survey was undertaken by experienced Mott MacDonald Ecologists (Phil Newberry, Jonathan Dye and Bethany Gray) between 14 and 17 May 2019, as well as, between 21 and 24 May 2019.
- 2.1.2. The survey was undertaken using the standard methodology from NVC Woodlands.³
- 2.1.3. Full NVC surveys (where safe) were conducted on all woodland land parcels within the Study Area. Each woodland parcel was given an initial walkover, to assess the number of homogenous stands present within each parcel. 50m x 50m plots were placed within each stand. The canopy and sub-canopy layers can be surveyed at this point, identifying the tree and shrub species within each stand. Domin values were then used to deduce the abundance of each canopy - layer species. The Domin scale is a classification of plant cover used to measure abundance within a specific quadrat. An approximation of the canopy layers' cover percentage and mean height was then undertaken.
- 2.1.4. 4m x 4m quadrats were then undertaken within each plot, to assess the diversity of the ground flora, and a photo was taken for each quadrat. If the ground flora vegetation was sparse, then 10m x 10m quadrats were undertaken. Every species within each quadrat was positively identified and assigned a Domin value. Also, for each quadrat, the average height of the ground flora layer was undertaken. At this point, plant communities were assigned for each stand. Domin values were also assigned for the amount of bare ground in each quadrat.
- 2.1.5. Other aspects of the NVC survey included; describing the management of each of layer or particular species (i.e. lapsed coppiced hazel, active pollard oak), the structure of the woodland habitat, plus noting any noticeable faunal damage (usually caused by browsing deer or squirrels).
- 2.1.6. Professional judgement was then undertaken by keying out grouped quadrats using the NVC community key to woodland, whilst also comparing floristic tables of NVC communities to the grouped quadrats.³
- 2.1.7. For each species identified, Domin values were assigned (Table 1).

³ Rodwell, J.S. (Ed.) (1990) British Plant Communities. Volume 1. Woodland and scrub. Cambridge University Press. Cambridge.

Table 1: “Domin” and percentage abundance values used

Domin Value	Percentage abundance
10	91-100%
9	76-90%
8	51-75%
7	34-50%
6	26-33%
5	11-25%
4	4-10%
3	< 4% many
2	< 4% several
1	< 4% few

Source; Rodwell et al. 1990.

- 2.1.8. The nomenclature for the vascular plants in this report follows Stace⁴ for both scientific and English names. Scientific names are only mentioned the first time each species is named in the report unless heading a table or figure.
- 2.1.9. Constancy values (see Table 2) were assigned for each species surveyed. These values give a good indication of the frequency of a particular species within a specific community. A constancy value of IV or V denotes a frequency of more than 60% i.e. a species that is present in four or more quadrats, out of a total of six quadrats within a community. Such species are described as constant.
- 2.1.10. A software package, Modular Analysis of Vegetation Information System (MAVIS), was used as a guidance to determine plant communities for each area. The community tables for all stands are shown in Appendix D.

Table 2: Constancy values

Cover Value	Frequency class
1-20%	I
21-40%	II
41-60%	III
61-80%	IV
81-100%	V

Source; Rodwell et al. 1990.

2.2. Survey Constraints

- 2.2.1. The survey was undertaken within the optimum survey period for NVC Woodland surveys (April to June).
- 2.2.2. There were some woodland parcels that were unsafe to survey under full NVC woodland surveying protocols. These were due to the conditions underfoot, which were either very steep slopes or boggy terrain. Where safe, the canopy,

⁴ Stace, C.S. (2019). New Flora of the British Isles. 4th Edition. Cambridge University Press, Cambridge.

sub-canopy and ground flora layer species were noted and assigned DAFOR (Dominant, Abundant, Frequent, Occasional and Rare) abundance values.

- 2.2.3. One woodland (close to Emma's Grove) could not be surveyed as land access was not granted at the time of survey. It is recommended that this woodland is surveyed in spring 2020 to assess the communities present and in-particular the presence of ancient woodland indicators, if access is possible.

3. Results

3.1. Woodland NVC Survey Results

- 3.1.1. A total of 24 separate woodland stands were surveyed, of which, 20 of these stands were surveyed under standard NVC woodland protocols. Four separate woodland stands were identified at the Barrow Wake site (GR354675). In four stands, where the terrain was very steep and therefore unsafe to undertake ground flora quadrats, DAFOR (Dominant, Abundant, Frequent, Occasional and Rare) values were given. Using binoculars, the ground flora within these stands, could be safely identified.
- 3.1.2. Following analysis, eight plant communities and sub-communities were identified within the survey areas. These are described in further detail below and their locations shown in Appendix A. Photographs of each survey quadrat are provided in Appendix B, species tables are provided in Appendix C and community lists are provided in Appendix D.
- 3.1.3. The following land parcels resembled the **W8e *Fraxinus excelsior* – *Acer campestre* – *Mercurialis perennis* woodland – *Geranium robertianum* sub-community**; Woodland at Fly Up Project (GR112176); Barrow Wake woodland Stands 1, 2 and 4 (GR354675); Woodland at Rushwood Kennels (GR138283); Woodland at Birdlip Radio Station (GR252644); Highways England woodland north of A417 (GR323231); Woodland north east of Grove Farm (GR320093); Woodland south of Dog Lane (no land registry title given); and, Highways England woodland south of A417 (GR326339, GR325786, GR19275, GR21956, GR21586).
- 3.1.4. The following land parcels resembled the **W8a *Fraxinus excelsior* – *Acer campestre* – *Mercurialis perennis* woodland – *Primula vulgaris* – *Glechoma hederacea* sub-community**; Barrow Wake woodland Stand 3 (GR354675); Shab Hill woodland Stand 3 (GR97761); and, Woodland north of Dog Lane (GR95689).
- 3.1.5. The following land parcel resembled the **W8d *Fraxinus excelsior* – *Acer campestre* – *Mercurialis perennis* woodland – *Hedera helix* sub-community**; Woodland at Cukoopen Barn Farm (GR136598).
- 3.1.6. The following land parcels resembled the **W8f *Fraxinus excelsior* – *Acer campestre* – *Mercurialis perennis* woodland – *Allium ursinum* sub-community**; Crickley Hill woodland Stand 2 (GR32911); and, Ullen Wood parcels (GR346313), (GR352384) and (GR354154).

- 3.1.7. The following land parcels resembled the **W12a *Fagus sylvatica* - *Mercurialis perennis* woodland – *Mercurialis perennis* sub-community**; Shab Hill woodland Stand 1 (GR97761); Woodland at Birdlip Quarry (GR353298); and, Woodland at The Scrubbs (GR32911).
- 3.1.8. The following land parcel resembled the **W12b *Fagus sylvatica* - *Mercurialis perennis* woodland – *Sanicula europaea* sub-community**; Crickley Hill woodland Stand 1 (GR32911).
- 3.1.9. The following land parcel resembled the **W21b *Crataegus monogyna* – *Hedera helix* scrub community - *Mercurialis perennis* sub-community**; Shab Hill woodland Stand 2 (GR97761).
- 3.1.10. The following land parcel resembled the **MG1a *Arrhenatherum elatius* grassland – *Festuca rubra* sub-community**; Land north west of Grove Farm (GR320093).

3.2. Surveyed Land Parcels

- 3.2.1. **Woodland at Fly Up Project (GR112176)**. This is linear woodland adjacent directly to the south of the A417. This is likely to be historically planted canopy (as a screen to the A417) and is currently exhibiting no signs of recent management. The ground layer throughout is very soft, uneven and undulating underfoot, therefore it was unsafe to survey the ground flora within the entire extent of the woodland. As such, DAFOR values were given for ground flora species present where terrain underfoot was considered safe. Both the canopy and sub-canopy layers are open and there are waterbodies present within the woodland. Oak species *Quercus* sp. are noticeably absent from the canopy layer and therefore all oak woodland communities can be discounted. Although ash *Fraxinus excelsior* is the most prominent canopy species, W9 can also be discounted due to the absence of rowan *Sorbus aucuparia* and downy birch *Betula pubescens*. This woodland can be ascribed as W8 *Fraxinus excelsior*-*Acer campestre*-*Mercurialis perennis* woodland due to presence of hawthorn *Crataegus monogyna*. There are a few crack willow *Salix fragilis* and alder *Alnus glutinosa* trees present, though are scattered. This would suggest that there are pockets of damper habitat within this woodland. Due to the local abundance of common nettle *Urtica dioica* and the presence of elder *Sambucus nigra* within the sub-canopy layer, the habitat has the strongest affinities with the W8e *Geranium robertianum* sub-community. This area has been classified as Priority Deciduous Woodland. MAVIS analysis could not be implemented, as it was considered unsafe to undertake ground flora quadrats.
- 3.2.2. **Barrow Wake woodland Stand 1 (GR354675)**. This stand is a pocket of young woodland located on undulating terrain, which is sloping downwards from the

road. The canopy is open with beech and ash. Within the sub-canopy layer there is coppiced hazel *Corylus avellana* present thus indicating past management, but only within a small concentration towards the northern extent. Other than that, there are no signs of recent management. The area is freely accessible with public paths situated throughout the woodland stand. The ground flora is sparse where beech *Fagus sylvatica* is present, though this ground layer is locally abundant in places. There is young ash in the south western corner of the stand with several semi mature and mature beech trees present. Oak species are rarely abundant in the canopy layer, as well as, being absent from the canopy quadrat and therefore oak woodland communities can be discounted. Although ash is the most prominent canopy species, W9 can be ruled out due to the absence of rowan and downy birch. The woodland can be ascribed as W8e *Fraxinus excelsior-Acer campestre-Mercurialis perennis* woodland *Geranium robertianum* sub-community, due to the presence of prominent ash in the canopy layer and hawthorn plus elder within the sub-canopy layer. The W8e sub-canopy is strongly associated with the ground flora composition of; constant dog's mercury *Mercurialis perennis*, frequent bramble *Rubus fruticosus* agg., plus rarely abundant common nettle and ivy *Hedera helix*. This area has been classified as Priority Deciduous Woodland. MAVIS analysis has identified the stand as either W8, W12 or W13 communities. Neither beech or Yew *Taxus baccata* dominate the canopy layer and therefore the W12 and W13 communities can be discounted.

- 3.2.3. **Barrow Wake woodland Stand 2 (GR354675).** This small stand is a woodland comprised of a canopy of semi mature grey willow *Salix cinerea*. The southern extent divided by stock fencing and undulating terrain within the eastern extent with abundant deadwood. The ground layer flattens out after sloping down from the A417. The canopy layer is very open with occasional grey willow and sycamore *Acer pseudoplatanus* and a more extensive sub-canopy with coppiced hazel with scattered and occasional elder, as well as, hawthorn. The structure of this layer suggests some previous coppicing management with some canopy clearance though it appears that this woodland parcel is currently unmanaged. The woodland most strongly resembles the W8e *Fraxinus excelsior-Acer campestre-Mercurialis perennis-Geranium robertianum* sub-community due to the presence of hazel and hawthorn within the sub-canopy. The constancy of common nettle and herb-robert *Geranium robertianum*, plus the locally abundant presence of dog's mercury and frequency of bramble suggests that the woodland is a W8e sub-community. MAVIS has identified this stand as either W6, W8, W21, W24 or W25. The W6, W21, W24 and W25 woodland communities can be discounted as the canopy is not dominated by willow species or alder. Also, the habitat is not a scrub community.

- 3.2.4. **Barrow Wake woodland Stand 3 (GR354675).** This is a small woodland stand directly easterly and north-easterly adjacent to Barrow Wake car park is comprised of an open and prominent ash canopy with coppiced hazel. The ground undulates greatly and is open to the public. There is no apparent recent management. Rowan and downy birch are absent whilst ash and hazel predominantly make up the canopy and sub-canopy layers. Sycamore and elm species *Ulmus* spp. are also absent from these layers. The woodland shows the strongest affinities with the *W8a Fraxinus excelsior-Acer campestre-Mercurialis perennis woodland-Primula vulgaris-Glechoma hederacea* sub-community. Ivy is absent throughout the woodland and therefore sub-communities W8d and W8e can be discounted. Known W8a associate species are present, these are constant ground ivy *Glechoma hederacea* and frequent common dog-violet *Viola riviniana* which are present within the quadrats, whilst bugle occurs within the woodland stand. Other species present within the open ground flora layer are constant bramble, frequent cleavers *Galium aparine*, occasional smooth meadow-grass *Poa pratensis*, as well as, rarely frequent burdock *Arctium* spp., common twayblade *Listera ovata*, dandelion *Taraxacum officinale* agg., germander speedwell *Veronica chamaedrys*, bush vetch *Vicia sepium*, traveller's-joy *Clematis vitalba* and creeping thistle *Cirsium arvense*. The bryophyte layer consists of frequent rough feather-moss *Brachythecium rutabulum*, occasional common feather-moss *Kindbergia praelonga* and hypnum moss *Hypnum cupressiforme*. This area has been classified as Priority Deciduous Woodland. MAVIS has identified this stand as either W6, W8, W12, W24 or W25. This woodland is neither dominated by willow, beech or alder and cannot be considered a scrub habitat. Therefore, all woodland communities bar the W8 community, can be discounted.
- 3.2.5. **Barrow Wake woodland Stand 4 (GR354675).** This stand is a woodland comprised of predominantly semi-mature oak canopy layer with a sub-canopy layer. The northern and western extent is comprised of a very steep slope and therefore too difficult and unsafe to survey. This comprised mainly of coppiced hazel and scattered ash trees. This is an area open to the public and is likely to undergo management periodically. As ash is frequent within the canopy, the W10 community can be ruled out. Rowan and downy birch are absent and therefore the W9 community can also be discounted. This woodland stand can be ascribed as the *W8e Fraxinus excelsior-Acer campestre-Mercurialis perennis woodland Geranium robertianum* sub-community. This is due to the presence of occasional herb robert and cleavers plus rarely abundant common nettle. Wild garlic is also a rare species within the ground layer. Known W8e associate dog's mercury is frequent and achieves cover where present. Other species present within the ground flora layer are constant wood avens *Geum urbanum*, frequent smooth meadow-grass, occasional woodruff *Galium odoratum*, false brome *Brachypodium sylvaticum*, cleavers and dandelion plus rarely abundant woody

nightshade *Solanum dulcamara*, barren strawberry *Potentilla sterilis*, male fern *Dryopteris filix-mas* and germander speedwell. The bryophyte layer is comprised of infrequent rough feather-moss and rarely abundant common feather-moss. This area has been partially classified as Priority Deciduous Woodland. MAVIS has identified this stand as either W6, W8, W12 or W24. This woodland is not dominated by willow, beech or alder within the canopy layer and is also not a scrub habitat. Therefore, all woodland communities bar the W8 community, can be discounted.

3.2.6. **Shab Hill woodland Stand 1 (GR97761).** This linear stand, adjacent to a public rights-of-way, is a semi-mature to mature beech woodland with cavities in trunks and very sparse ground flora with leaf litter. There was an understorey layer of hawthorn, elder and holly on the fringes of the woodland. The canopy layer was closed with sparse vegetation within the ground layer. This may be due to the distinct lack of sunlight reaching the ground layer. This woodland can be ascribed as W12a *Fagus sylvatica-Mercurialis perennis* woodland *Mercurialis perennis* sub-community as the field layer has constant and locally abundant dog's mercury. The sub-canopy layer was very sparse and is characteristic of a W12 community. The ground layer was very species-poor and sparse due to the heavy shade from the closed beech canopy. Occasional lords-and-ladies *Arum maculatum* (a known W12a associate species), infrequent hawthorn seedlings and rarely abundant common nettle comprised the rest of the ground layer though all were of low abundance. The bryophyte layer was comprised of constant rough feather-moss and infrequent common feather-moss. MAVIS identified this stand as either W8, W12, W13 or W21. Ash and yew are absent whilst this habitat is not scrub. Therefore, the latter three communities can be ruled out.

3.2.7. **Shab Hill woodland Stand 2 (GR97761).** This area is comprised of scattered shrub species without a canopy layer present. This area can be described as scrubby habitat with scattered elder and hawthorn trees present within the sub-canopy. The woodland is likely to be a hawthorn community with scattered trees forming an open sub-canopy. There is scattered hawthorn on fringes of woodland and likely to be unmanaged with hypnum moss growing on trunks of elder trees. The woodland is on a steep embankment adjacent to the grassy footpath. It is likely that this area has been unmanaged for a considerable amount of time. This habitat can be ascribed as W21b *Crataegus monogyna-Hedera helix* scrub-*Mercurialis perennis* sub-community. This is due to hawthorn and elder *Sambucus nigra* present within the sub-canopy layer, plus constant dog's mercury, ground ivy, common nettle and occasional rough-meadow grass *Poa trivialis* within the ground flora layer. This area has been classified as Priority Deciduous Woodland. MAVIS analysis suggests the woodland is either W6, W21, W24, OV21, OV24 or SD18. The habitat is comprised of an

established understorey layer, therefore the latter three communities can be ruled out. Bracken *Pteridium aquilinum* is absent and the W24 community can also be ruled out.

- 3.2.8. **Shab Hill woodland Stand 3 (GR97761).** This is a young to semi mature woodland, mainly comprised with ash within the canopy young ash canopy, goat willow and elder sub-canopy. The ash canopy is scattered and open, which is predominantly within the northern extent of woodland. The margins of the wood are dense with vegetation and are on a steep south facing slope. There are no signs of recent management. The ground flora distribution was patchy with several areas of bare ground. Due to the frequency of ash and hawthorn, as well as, the absence of rowan, downy birch and elm species the community can be attributed to W8 *Fraxinus excelsior-Acer campestre-Mercurialis perennis* woodland. The woodland most closely resembles the W8a *Primula vulgaris-Glechoma hederacea* sub-community due to the presence of ground ivy. Bugle *Ajuga reptans*, another W8a species, is also present though not within the quadrat samples. Dog's mercury, although not a constant species, is locally dominant within the ground flora. Other species present are; infrequent sycamore and elder within the sub canopy, as well as, constant common nettle and occasional enchanter's nightshade. The bryophyte layer consists of constant and locally abundant common feather-moss and infrequent rough feather-moss. This area has been classified as Priority Deciduous Woodland. MAVIS analysis has identified that this woodland is either W6, W8, W12, W21, W25 or SD18. Beech and alder are absent from the canopy layer. Grey willow *Salix cinerea* does not dominate, whilst the habitat is neither scrub or sand dune habitat. Therefore, all communities, except W8, can be discounted.
- 3.2.9. **Woodland at Rushwood Kennels (GR138283).** There has been a recent tree clearance on the far south-eastern extent of the site, though no apparent recent management to the rest of the woodland. This woodland is located on a south facing slope with a predominantly ash and sycamore canopy with a hawthorn sub-canopy with patches of dog's mercury on the northern aspect of the woodland. The woodland has a central track with damp areas next to the track indicated by soft rush *Juncus effusus* and great willowherb *Epilobium hirsutum*. The woodland contains several young to semi-mature beech trees within the canopy, though this does not largely form the canopy layer. There are several patches of extensive and thick ruderal vegetation present within the central section of the woodland. There was no ground flora around a cluster of young sycamore trees on the southern extent of the woodland. An inlet was present running north to south through the woodland and starting at a small pond on the eastern extent of the woodland with dense algae, *Juncus* spp and great willowherb. The open woodland most closely resembles W8e *Fraxinus excelsior-Acer campestre-Mercurialis perennis-Geranium robertianum* sub-community.

This is due to ash predominantly forming the canopy and the very sparse sub-canopy layer comprised partially of hawthorn. Many ground flora species are present close to the northern track though are not present throughout all other areas of the woodland. Species present within the quadrats that are indicative of a W8e sub-community are constant and locally abundant bramble, as well as, constant and sparse cleavers. This area has been classified as Priority Deciduous Woodland. MAVIS analysis has identified the woodland as either W6, W8, W12 or W24. Willow and alder are absent from the canopy and although beech is present, does not dominate this layer. The woodland cannot be considered a scrub habitat therefore all of these woodland communities, except for W8, can be ruled out.

- 3.2.10. **Crickley Hill woodland Stand 1 (GR32911).** This is young to semi mature beech woodland managed by the Gloucestershire Wildlife Trust and is boarded by wooded fencing. The woodland is open to the public with trails and paths throughout the woodland. There are several brash piles in woodland, suggesting there has been recent management. The canopy is fairly open in some areas suggesting that beech has been historically felled and that ash has likely grown in 'regeneration gaps' within the canopy layer. This woodland can be ascribed as W12 *Fagus sylvatica-Mercurialis perennis* woodland as hazel and ash occur within the canopy and sub-canopy layers. The woodland shows the strongest affinities to the W12b *Mercurialis perennis* sub-community due to the presence of abundant ash within the canopy layer. Further evidence of a W12a sub-community is the presence of false brome *Brachypodium sylvaticum*, enchanter's nightshade, wild garlic, lesser celandine *Ficaria verna* and bramble, though none of these species occur within the quadrat sampling. The ground flora is comprised of constant and locally abundant wood avens, occasional cleavers and smooth meadow-grass, as well as, the presence of numerous tree saplings (beech, ash, hazel, pedunculate oak *Quercus robur*, field maple *Acer campestre* and hawthorn). This area has been classified as Priority Deciduous Woodland. MAVIS analysis has classified this woodland as either W8, W10, W12, W24, OV24 or MG1. As oak is absent and ash is only a small component of the woodland, the W8 and W10 communities can be ruled out. As this woodland is neither scrub, grassland or open vegetation all other communities, except W12 can be discounted.
- 3.2.11. **Crickley Hill woodland Stand 2 (GR32911).** This is a mature ash and hazel dominated woodland though some ash saplings are present. There is abundant coppiced hazel, therefore indicating past management. The ground flora is dominated by wild garlic with some tree saplings present (field maple, ash, hawthorn and hazel). The woodland is enclosed and not open to the public and is surrounded by a stock proof fence. There are two mature beech trees with callus rolls, as well as, small quantities of fallen deadwood in situ. The woodland

slopes at a constant angle towards the north west. Due to the absence of rowan and downy birch, the W9 woodland community can be discounted and because ash forms the prominent canopy layer, the woodland can be ascribed as W8 *Fraxinus excelsior-Acer campestre-Mercurialis perennis* woodland. Due to the dominance of constant wild garlic within the ground flora layer, the woodland has the strongest affinities with the W8f *Allium ursinum* sub-community. Dog's mercury is locally abundant within the ground flora and may be more prominent later in the year when wild garlic has died back. Other species present within the ground flora are infrequent lords-and-ladies, bluebell, wood anemone and herb-paris. The bryophyte layer is comprised of frequent common feather-moss, occasional rough feather-moss and rarely abundant common smoothcap. This area has been classified as Priority Deciduous Woodland. MAVIS analysis suggests that the woodland is either W8, W10, W12, W13 or W21. Oak and yew are absent whilst beech, although present, is not a dominant species. This woodland cannot be considered scrub habitat and therefore all communities, except W8 can be excluded.

- 3.2.12. **Woodland at Birdlip Radio Station (GR252644).** This stand of woodland was directly northerly adjacent to Birdlip Radio Station and is enclosed by stock fencing. The canopy layer is very open with planted young to semi-mature ash and sycamore, whilst the sub-canopy is very sparse and is comprised of hawthorn. The ground flora layer is patchy in abundance though more species-rich than the adjacent stand. This layer was grassy in areas where the canopy is open. Due to the absence of rowan, sessile oak and elm species within the canopy, the W9 community can be discounted. Oak species are also absent and therefore any associated oak woodland communities can also be discounted. The woodland can be ascribed as W8 *Fraxinus excelsior-Acer campestre-Mercurialis perennis* woodland as ash is the prominent species within the open canopy with some associated sycamore also present though far less abundant. Due to the young age of the woodland, the ground flora, although present and abundant in places, has yet to develop fully. However, the woodland shows the strongest affinities with the W8e *Geranium robertianum* sub-community. This is due to the presence of common nettle and bramble. Cleavers is also present though not within the quadrat samples. Wood speedwell *Veronica montana* is frequent within the ground flora and is locally abundant. The bryophyte layer is very sparse with only rough feather-moss present. The woodland is enclosed by stock fencing and there was no obvious evidence of recent management. This area has been classified as Priority Deciduous Woodland. MAVIS analysis suggests that the woodland is either W8, W10, W12, W13 or W21. As oak and yew is absent and beech only forms a minor component of the canopy, the W10, W12 and W13 communities can be ruled out. This habitat is also not scrub and therefore the W21 community can also be discounted.

- 3.2.13. **Highways England woodland north of A417 (GR323231).** This is an area of steep woodland adjacent to A417. The ground flora quadrats were undertaken in an area adjacent to the A417 where the ground was less steep and undulating. The canopy and sub-canopy layers were open whilst the ground flora was patchy. There were no signs of recent management. The canopy comprised of young to semi-mature trees with mainly ash with some sycamore and wych-elm present. The sub-canopy was very sparse with occasional elder shrubs present with rarely abundant hazel. This woodland can be ascribed as *W8e Fraxinus excelsior-Acer campestre-Mercurialis perennis Geranium robertianum* sub-community as sycamore achieves cover within the canopy layer. Ivy is a constant and abundant species within the ground flora along with occasional herb-robert plus rarely frequent hart's-tongue *Asplenium scolopendrium* and common nettle (the latter present though not in the sample quadrats). All of these species are known *W8e* associates. Other species present within the ground flora quadrats are numerous tree seedlings (ash, field maple, hazel, sycamore, beech, hawthorn and wych-elm), as well as, rarely abundant lords-and-ladies, wood avens and male fern. Bryophytes were absent within these quadrats. This area has been classified as Priority Deciduous Woodland. MAVIS analysis suggests that the woodland is either *W8*, *W10*, *W12* or *W21*. Oak and beech are absent whilst the habitat cannot be considered to be a *W21* community. Therefore, all communities, except *W8*, can be discounted.
- 3.2.14. **Woodland at Birdlip Quarry (GR353298).** This is a linear semi-natural broad-leaved woodland on the southern extent of Hanson quarry adjacent to the A417. There is a steep slope throughout the woodland (towards the A417) that is utilised by a social group of badgers. The canopy is largely beech (semi-mature to mature) with a very sparse sub-canopy layer. The canopy is closed with very little sunlight reaching ground level. There appears to be no recent management. The beech communities *W14* and *W15* can be discounted as although holly is present within the sub-canopy layer, it is neither frequent nor abundant, whilst silver birch (trees or saplings), sessile oak, pedunculate oak and beech saplings are all absent. This woodland can be ascribed as *W12a Fagus sylvatica-Mercurialis perennis* woodland-*Mercurialis perennis* sub-community due to the presence of constant ivy and bluebell, as well as, frequent lords-and-ladies. Other species present within the ground flora layer are infrequent redcurrant *Ribes rubrum*, rarely abundant wood avens, wall lettuce *Mycelis muralis*, violet species *Viola* spp., common nettle and common chickweed *Stellaria media*. The bryophyte layer was also sparse with occasional (though not abundant) hypnum moss. This area has been classified as Priority Deciduous Woodland. MAVIS analysis has classified this woodland as either *W8*, *W10*, *W12* or *W21*. Ash and beech are both absent from the canopy layer, whilst the habitat cannot be considered as scrub. Therefore, all communities, except the *W12*, can be discounted.

- 3.2.15. **Woodland north east of Grove Farm (GR320093).** This stand was a very steep young to semi mature mixed woodland with vertical bare earth drops either facing west or south. Larch was present within the canopy but was rare in abundance. The slope is too steep to survey ground flora under NVC woodland protocols and DAFOR values were given for the ground flora present. This woodland stand can be ascribed as W8 due to the abundance of ash within the canopy. Sessile oak and rowan are both absent and therefore the W9 community can be discounted. The rest of the canopy layer are comprised of frequent sycamore and wych-elm, plus rarely abundant field maple (all known W8 associate species). The sub-canopy is very sparse and contains only hazel. The woodland most strongly resembles the W8e *Geranium robertianum* sub-community as sycamore is prevalent within the canopy layer and also due to the presence of locally frequent dog's mercury, plus occasional ivy, false brome and cleavers, as well as, rarely abundant herb-robert, bramble and hart's tongue. The woodland is privately owned and there were no signs of management present. This area has been partially classified as Priority Deciduous Woodland. MAVIS analysis could not be implemented, as it was considered unsafe to undertake ground flora quadrats.
- 3.2.16. **Highways England woodland south of A417 (GR326339, GR325786, GR19275, GR21956, GR21586).** This is a linear stretch of woodland on steep banks adjacent to A417 surrounded by pasture to the east. The canopy is likely to be historically planted when the A417 was constructed as landscape screening. The woodland is unlikely to be recently managed. The canopy layer is predominantly comprised of ash with small numbers of field maple, pedunculate oak, horse-chestnut, female Lombardy-poplar, hazel, wych-elm, elder and alder. There is also a stream running through middle of woodland, from west to east, where there were large areas of damp and muddy ground. Away from the stream, the ground level was unstable and uneven with steep slopes towards the northern extent adjacent to the A417. This woodland most strongly resembles the W8 *Fraxinus excelsior-Acer campestre-Mercurialis perennis* woodland due to the prominence of ash within the canopy and the absence of sessile oak and rowan. The woodland can be ascribed as a W8e *Geranium robertianum* sub-community due to the presence of constant cleavers, frequent common nettle, locally abundant dog's mercury and infrequent herb-robert. Other species present within the ground flora are hart's-tongue (a known W8a associate species), constant and locally dominant comfrey, as well as, rarely abundant smooth meadow-grass, bluebell and lords-and-ladies. Pendulous sedge is present within the damper areas of the woodland close to the stream. The bryophyte layer is comprised of infrequent common feather-moss, as well as, rarely abundant rough feather-moss and common smoothcap. This area has been partially classified as Priority Deciduous Woodland, mainly to the eastern extent. MAVIS analysis has classified this habitat as either W6, W8, W21, W22

or W25. Willow and alder are absent from the canopy, whilst the habitat cannot be considered as scrub. Therefore, all communities, except W8, can be discounted.

- 3.2.17. **Land north west of Grove Farm (GR320093).** This is a small, young planted woodland, mostly of ash, which is enclosed by security fencing and has a track running through the centre. There is mechanical plant equipment scattered throughout the stand and vehicles passing through the woodland. The canopy is open with no sub-canopy present which means the ground flora isn't truly representative of a woodland habitat and has the appearance of a species-poor semi improved grassland. As the habitat is young unestablished woodland, it is unsuitable to assign a woodland community. The habitat more strongly resembles a MG1 *Arrhenatherum elatius* grassland. This can currently be ascribed to the MG1a *Festuca rubra* sub-community, due to the presence of red fescue and other known MG1a associate species. These are; frequent creeping thistle, infrequent hogweed, dandelion, cleavers and common nettle plus rarely abundant creeping bent, white dead-nettle *Lamium album*, common sorrel *Rumex acetosa*, common mouse-ear *Cerastium fontanum* and creeping buttercup. There appears to be no current management. This area has been classified as Priority Deciduous Woodland. MAVIS analysis has classified this habitat as either MG1, OV24, OV26 or W24. This habitat is neither open vegetation or scrub therefore all communities can be ruled out except for MG1.
- 3.2.18. **Woodland south of Dog Lane (no land registry title given).** This stand is a linear belt of young woodland adjacent to Dog Lane. Field maple and sycamore are abundant within the canopy layer. There is an earth bank which is parallel to Dog Lane towards the northern extent. The woodland was situated between the A417 and Dog Lane. There were no fencing surrounding this woodland and no obvious signs of recent management. Due to the presence of sycamore and field maple plus the absence of oak and downy birch, the woodland shows the strongest affinities with the W8 *Fraxinus excelsior-Acer campestre-Mercurialis perennis* woodland. Wild garlic, although present outside of the quadrats, never achieves dominance. The woodland can be ascribed as W8e *Geranium robertianum* sub-community due to the constant presence of herb-robert, cleavers and locally dominant ivy, plus an under scrub of bramble. Other species present within the ground flora quadrats include numerous tree seedlings (field maple, hawthorn, dogwood, ash and sycamore), occasional ground ivy, plus rarely abundant gooseberry *Ribes uva-crispa* and common nettle. The bryophyte layer is comprised of frequent common feather-moss and occasional rough feather-moss. This area has been classified as Priority Deciduous Woodland. MAVIS analysis has suggested that the woodland is either W6, W8, W12, W21 or W25. As willow, beech and alder are all absent from the canopy and that the

habitat cannot be considered as scrub, all communities, except for W8, can be ruled out.

- 3.2.19. **Woodland north of Dog Lane (GR95689).** This is a very steep (south east facing) woodland northerly adjacent to Dog Lane. This habitat was too steep to undertake ground flora quadrats safely (DAFOR only). The woodland consisted of mature to semi mature ash dominant steep banks with a thick undergrowth, suggesting that there is infrequent management. The woodland shows closest affinities with the W8a *Fraxinus excelsior-Acer campestre-Mercurialis perennis* woodland. Sycamore and field maple also occur within the canopy but are rare in abundance. the woodland can be ascribed to the W8a *Primula vulgaris - Glechoma hederacea* sub-community to the presence of W8a associate species dog's mercury, ground-ivy and violet species. This area has been classified as Priority Deciduous Woodland. MAVIS analysis could not be implemented, as it was considered unsafe to undertake ground flora quadrats.
- 3.2.20. **Woodland at The Scrubbs (GR32911).** This is a woodland with a mature beech canopy and coppice hazel, sparse holly, hawthorn, oak and ash. There are also several dead standing trees within the woodland and a steady slope from A417 road to Crickley Hill. It is likely there has been recent management due to coppiced hazel trees present and new fencing. There is abundant dead wood on the woodland floor. The ground flora is dense in some patches though mainly sparse with large areas of bare ground, therefore 10x10m ground flora quadrats were undertaken. There is also evidence of squirrel activity. The woodland is in a public area and is used frequently by dog walkers and other users. The canopy is closed in some areas with an open under-storey layer present throughout the woodland. The woodland can be ascribed as W12 *Fagus sylvatica-Mercurialis perennis* woodland due to the presence of hazel and constant dog's mercury within the ground flora layer. The W12a *Mercurialis perennis* sub-community has the strongest affinities to the woodland due to the presence of constant dog's mercury, lords-and-ladies and wood anemone *nemorosa*, as well as, occasional bluebell. Yellow archangel *Lamiastrum galeobdolon*, sanicle *Sanicula euopaea* and male fern, known W12a associate species, are present within the woodland but were not found within the quadrat samples. This area has been classified as Priority Deciduous Woodland. MAVIS analysis suggests the woodland is either W8, W10 or W12. Ash is constant, though only as a seedling within the ground flora layer and in low abundance. Oak is absent and therefore the W8 and W10 communities can be ruled out.
- 3.2.21. **Woodland at Cukoopen Barn Farm (GR136598).** This is a broad-leaved woodland with an open canopy and sub-canopy layer with some evidence of fly tipping. There are young to semi mature trees and no obvious signs of recent management. There are patches of bare ground within the ground flora layer and a consistent slope away from the road-side. The woodland is enclosed with

a stock-proof fence and a dry stone wall. There are a number of planted ornamental trees (including Swedish whitebeam *Sorbus x intermedia*) within a separate fragment towards the southern extent comprised of young wild cherry, Swedish whitebeam *Sorbus torminalis* and lime species *Tilia* spp. This area has been classified as Priority Deciduous Woodland and Ancient Replanted Woodland (excluding the southern ornamental fragment.) The canopy is comprised of semi-mature ash with rarely abundant semi-mature beech. Due to the canopy composition and the presence of hazel and hawthorn within the canopy this woodland can be ascribed as a W8 *Fraxinus excelsior-Acer campestre-Mercurialis perennis* woodland community. The sub-community that has the strongest affinities with this woodland is the W8d *Hedera helix* sub-community. Although Ivy is not present within the quadrats, it is present within the woodland as a frequent species. Other ground flora species show matched abundance and frequency values with the W8d sub-community, these are; constant and locally dominant dog's mercury, infrequent enchanter's nightshade plus rarely abundant wild garlic, tufted hair-grass *Deschampsia cespitosa*, wood sedge *Carex sylvatica* and woodruff *Galium odoratum*. The bryophyte layer is comprised of occasional rough-stalked feather-moss, infrequent common feather-moss and rare fox-tail feather-moss. MAVIS analysis has classified this woodland as either W8, W10 or W12. Oak is absent whilst beech only forms a minor component of the canopy, therefore the W10 and W12 communities can be discounted.

3.2.22. **Ullen Wood (GR346313)**. This is young to semi-mature semi-natural broad-leaved woodland with beech, sycamore, ash and coppiced hazel *Corylus* within the canopy and subcanopy layers. These layers are open. The beech trees present are more mature with callus rolls with decaying and scarring bark on branches. The woodland has a five degrees continuous slope downwards to the north and has a shallow trench bisecting the woodland from south to north. Beech is not a prominent species within the canopy layers and therefore the beech woodland communities can be discounted. As hazel is the only sub-canopy species and wild garlic forms a carpet throughout the ground flora layer, as well as, being a constant species, the woodland can be ascribed as a W8f *Fraxinus excelsior-Acer campestre-Mercurialis perennis* woodland, *Allium ursinum* sub-community. Further evidence of a W8f community is the patchy abundance of bluebell and the presence of wood avens and wood anemone. This area has been classified as Priority Deciduous Woodland and Ancient Semi-natural Woodland. MAVIS analysis has classified this woodland as either W8, W10 or W12. Beech is of a low abundance within the canopy and oak is absent throughout. Therefore, the W10 and W12 communities can be ruled out.

3.2.23. **Ullen Wood (GR352384)**. This is an established broad-leaved woodland with young and semi-mature trees within canopy. This parcel has a very similar

woodland structure to GR354154 with open canopy and sub-canopy layers. The ground flora is dense and is currently being actively managed. There is one dead standing tree within the canopy. The woodland can be ascribed as a W8f *Fraxinus excelsior-Acer campestre-Mercurialis perennis* woodland-*Allium ursinum* sub-community due to the prominence of ash within the canopy, the presence of hazel within the sub-canopy layer and the constant dominance of wild garlic. Within the ground flora layer and further evidence of a W8f sub-community is constant (though not abundant) wood anemone, bluebell and the local abundance of dog's mercury. There are several tree seedlings within ground flora, these include; constant and locally abundant ash, plus rarely abundant hazel, sycamore and hawthorn. This area has been classified as Priority Deciduous Woodland and Ancient Semi-natural Woodland. MAVIS analysis has classified this woodland as either W8, W10 or W12. Oak and beech are both absent from this woodland and therefore the W10 and W12 communities can be discounted.

- 3.2.24. **Ullen Wood (GR354154).** This is an established mixed woodland with young to semi-mature trees within canopy and sub-canopy. The canopy and sub-canopy layers are open with abundant dead wood on the woodland floor. Coppiced hazel present suggests recent management. The slope is constant throughout woodland and slopes downwards towards the northern extent. There is bare ground underneath some leyland cypress although generally the ground flora layer is dense with vegetation. Wood sedge is only present on paths within the land parcel. This woodland can be ascribed as W8f *Fraxinus excelsior-Acer campestre-Mercurialis perennis* woodland *Allium ursinum* sub-community. The W9 community can be discounted due to the lack of rowan within the sub canopy. As wild garlic is a constant and a local dominant throughout the ground flora layer, the woodland show strong affinities to the W8f sub-community. Ash is the most prominent species amongst the open canopy layer, with infrequent wych-elm and sessile oak. Hazel is frequent within the species-poor sub-canopy layer. There are numerous W8f associate species within the ground flora layer. These are; constant dog's mercury, wood anemone and bluebell, as well as, infrequent wood-sorrel and rarely abundant pignut and wood spurge. The bryophyte layer is extensive and is comprised of constant common feather-moss, locally abundant rough-stalked feather moss and rarely abundant common smoothcap. This area has been classified as Priority Deciduous Woodland and Ancient Semi-natural Woodland. MAVIS analysis has classified this woodland as either W8, W10 or W12. Both oak and ash are absent throughout the woodland and therefore the W10 and W12 communities can be ruled out.

4. Potential Impacts

- 4.1.1. The impact assessment will be covered within the Biodiversity chapter of the Environmental Statement for the project. At the time of writing, the scheme is still being designed and firm conclusions on impacts will be detailed in the aforementioned document.

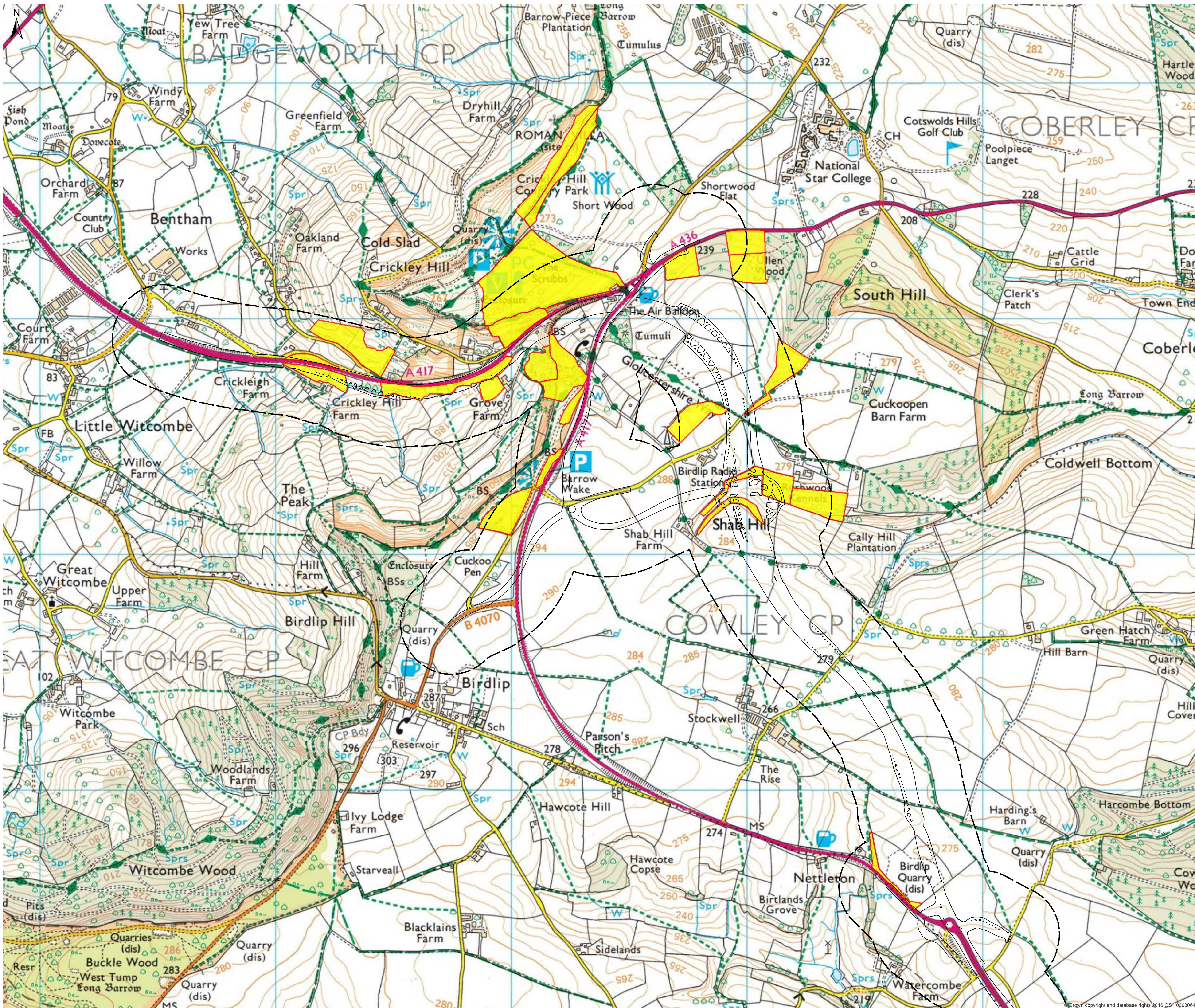
5. Mitigation and enhancement recommendations

- 5.1.1. Full details of ecological mitigation and enhancement measures will be included within the Biodiversity chapter of the Environmental Statement for the project.

6. Conclusion

- 6.1.1. Field surveys, undertaken in 2019, identified plant communities for all 24 woodland parcels considered to be potentially directly or indirectly impacted by the scheme.
- 6.1.2. A number of these woodland parcels may be directly impacted by the scheme including habitat loss and fragmentation. This includes an area of potential ancient semi-natural woodland at Emma's Grove. Retained woodland habitats may also be potentially adversely impacted by decreased air quality including emissions and dust during construction, and during the operations life of the scheme by increased emissions including increased NO^x deposition.
- 6.1.3. The impact assessment and subsequent mitigation and enhancement strategy will be covered within the ecology and nature conservation chapter of the Environmental Statement for the project. At the time of writing, the scheme is still being designed and firm conclusions on impacts and mitigation will be detailed in the aforementioned document.

Appendix A NVC Survey Drawings



Notes

Legend

- Option 30 Scheme Route
- Option 30 200m Buffer
- Woodland Locations

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Rev	Date	Amendment Details	Drawn	Chk'd	App'd

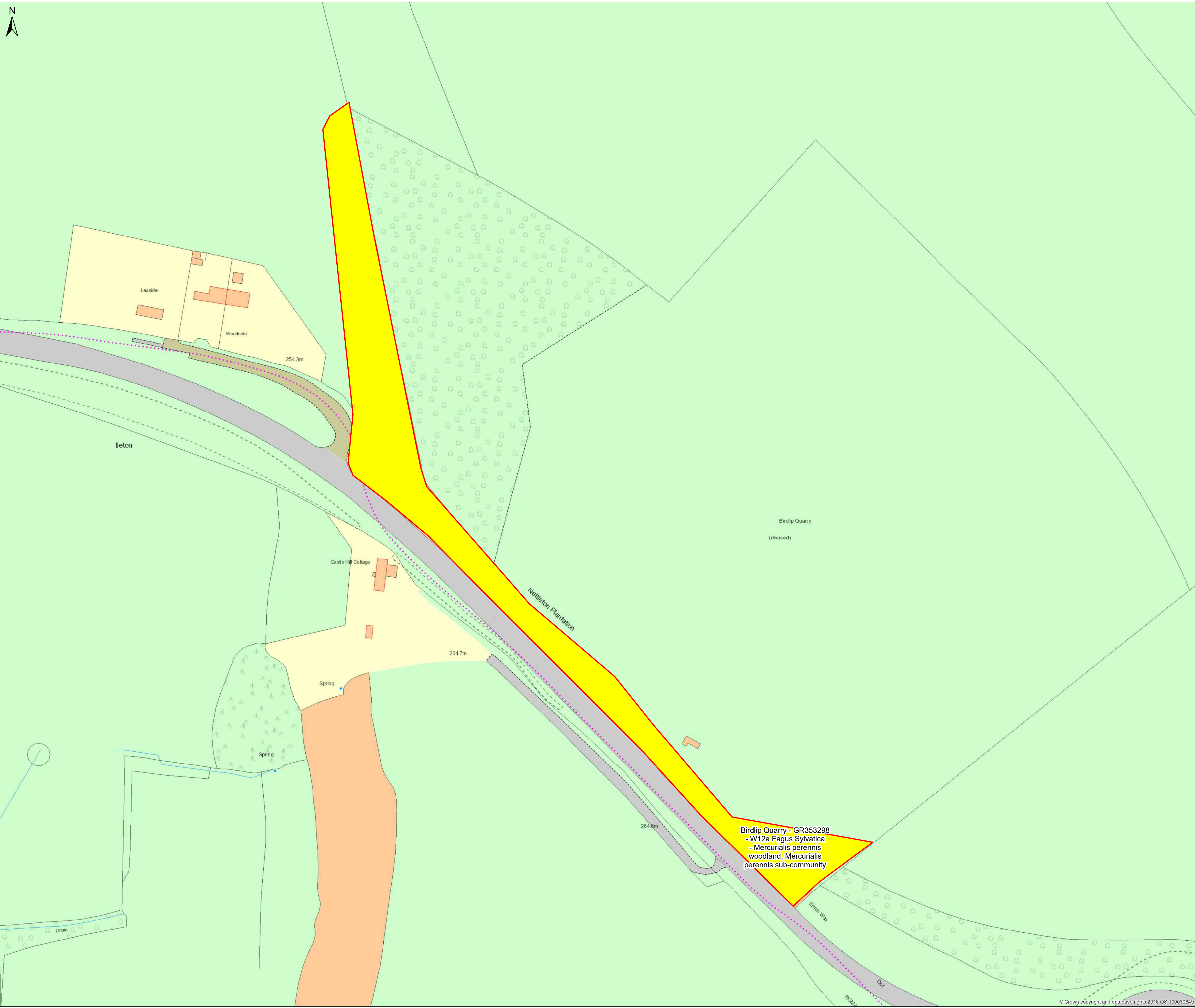
Mott MacDonald Sweco

Client: **highways england**

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Notes

Legend

Woodland Locations

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Rev	Date	Amendment Details	Drawn	Chk'd	App'd

**Mott MacDonald
Sweco**



Drawing Status	FOR INFORMATION	Suitability	S2
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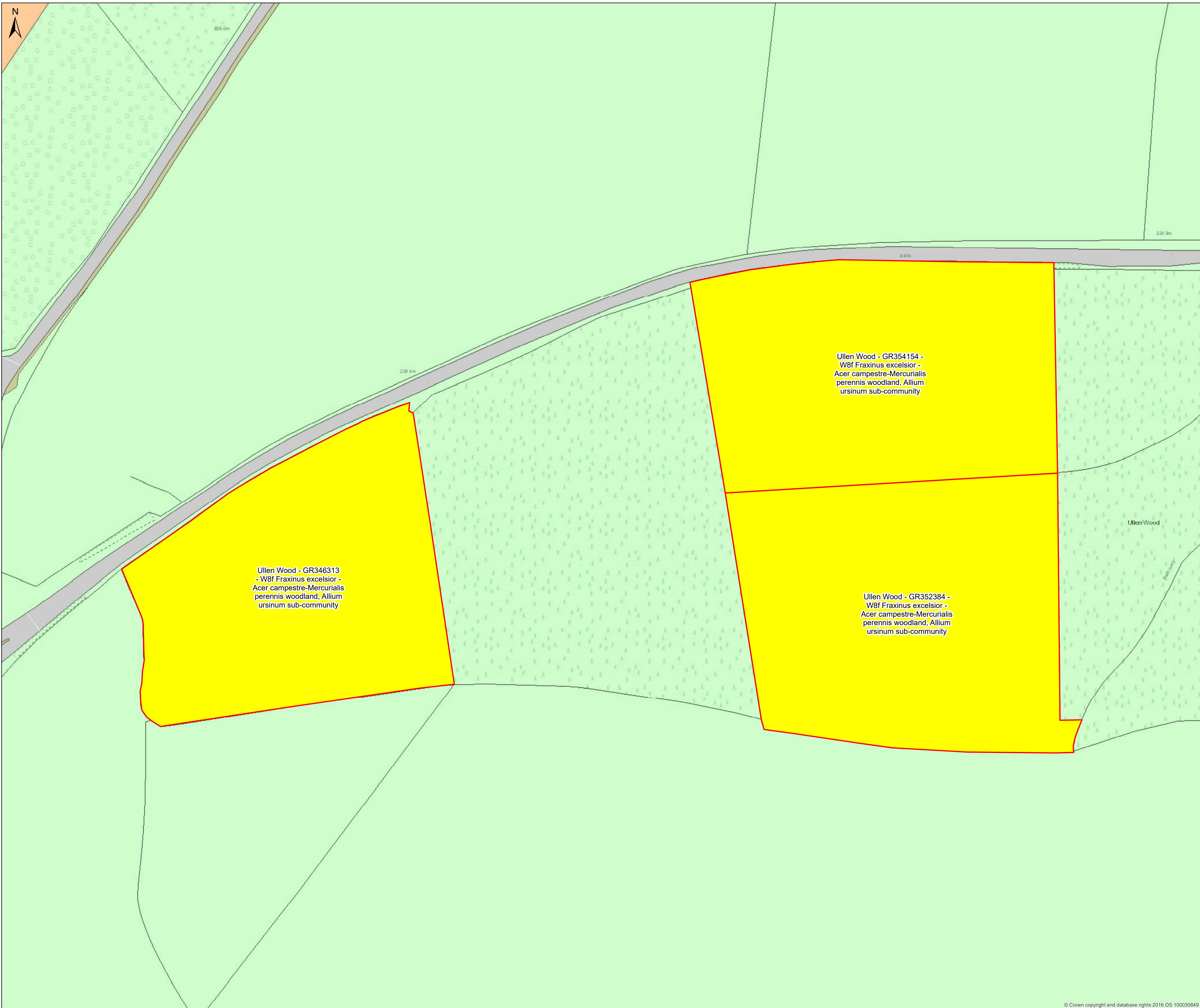
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NVC WOODLAND SURVEYS
Page 2 of 18

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Location	Type	Role	Number	

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Notes

Legend

Woodland Locations

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Rev	Date	Amendment Details	Drawn	Chk'd	App'd

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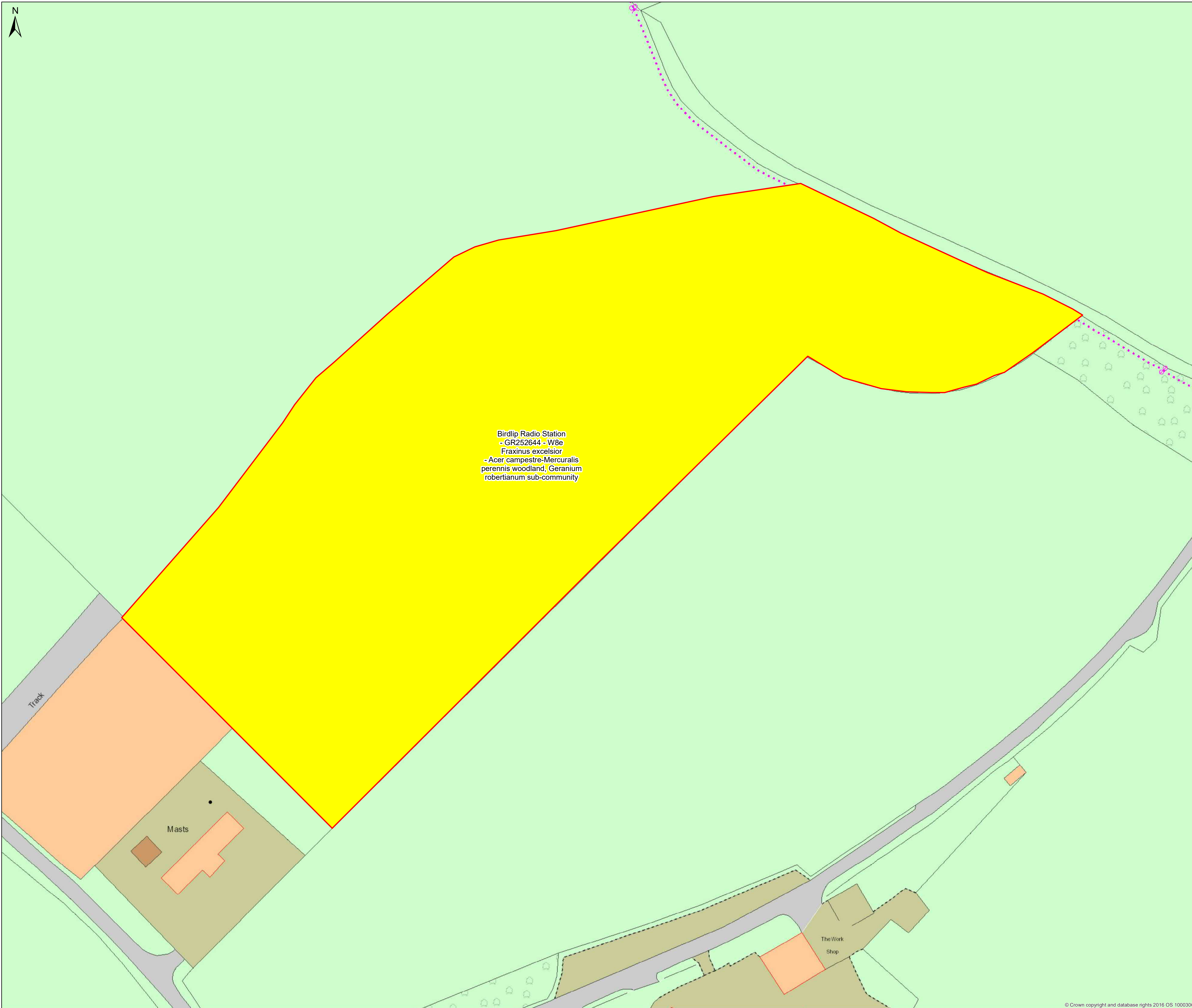
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**NVC WOODLAND SURVEYS
Page 3 of 18**

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Drawing Number	HE Ref	Originator	Volume	Project Ref. No.
551505	MMSJV	EBD	-	551505
000	DR	LB	00051	Revision P01
Location	Type	Role	Number	



Birdlip Radio Station
 - GR252644 - W8e
 Fraxinus excelsior
 - Acer campestre-Mercurialis
 perennis woodland, Geranium
 robertianum sub-community

Notes

Legend

Woodland Locations

Rev	Date	Amendment Details	Drawn	Chk'd	App'd
P01	12/07/2019	First Revision	TW	VH	SM

Mott MacDonald Sweco

Client

Drawing Status	FOR INFORMATION	Suitability	S2
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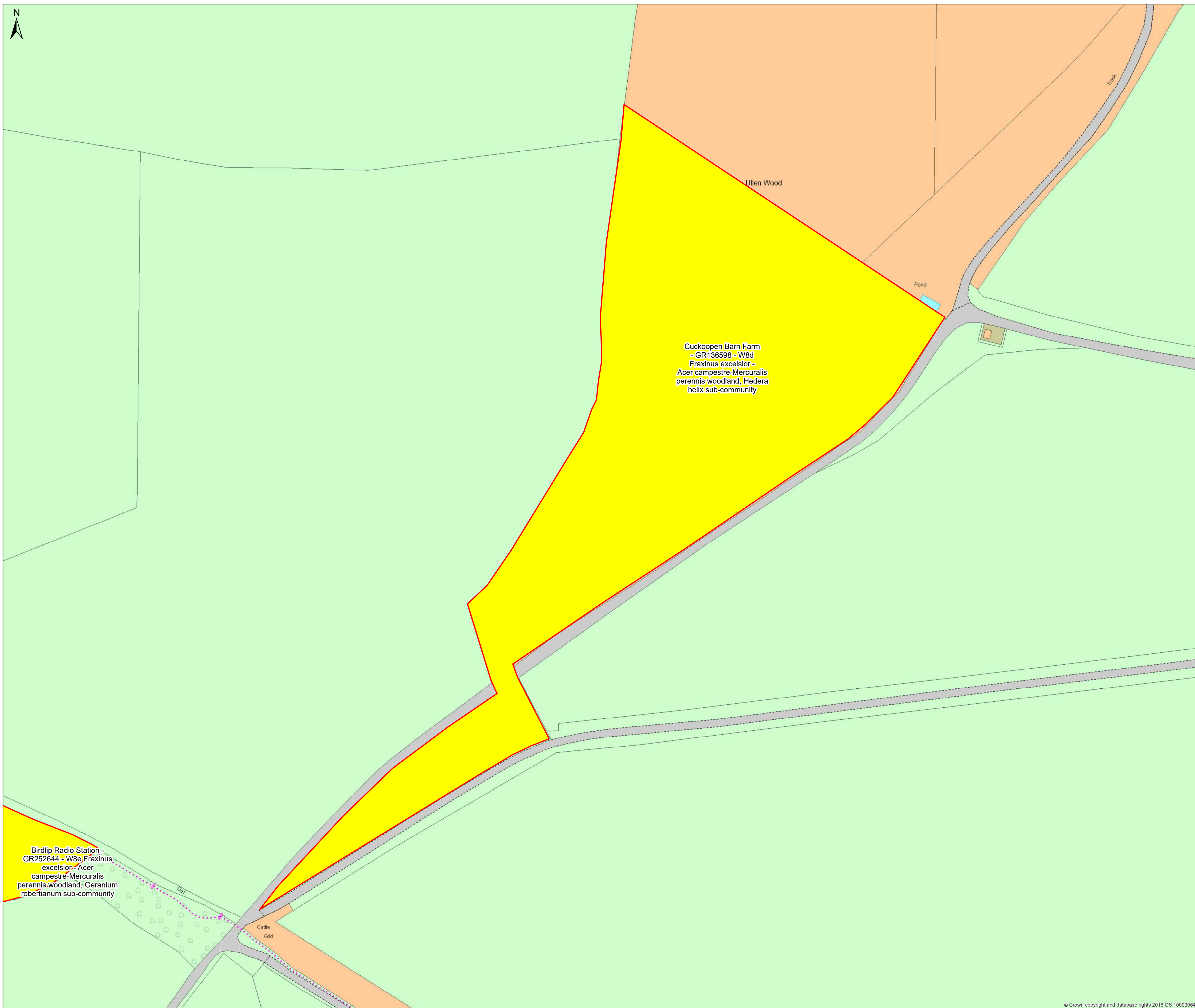
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Revision

P01



Notes

- Legend**
- Woodland Locations

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Rev	Date	Amendment Details	Drawn	Chk'd	App'd

**Mott MacDonald
Sweco**

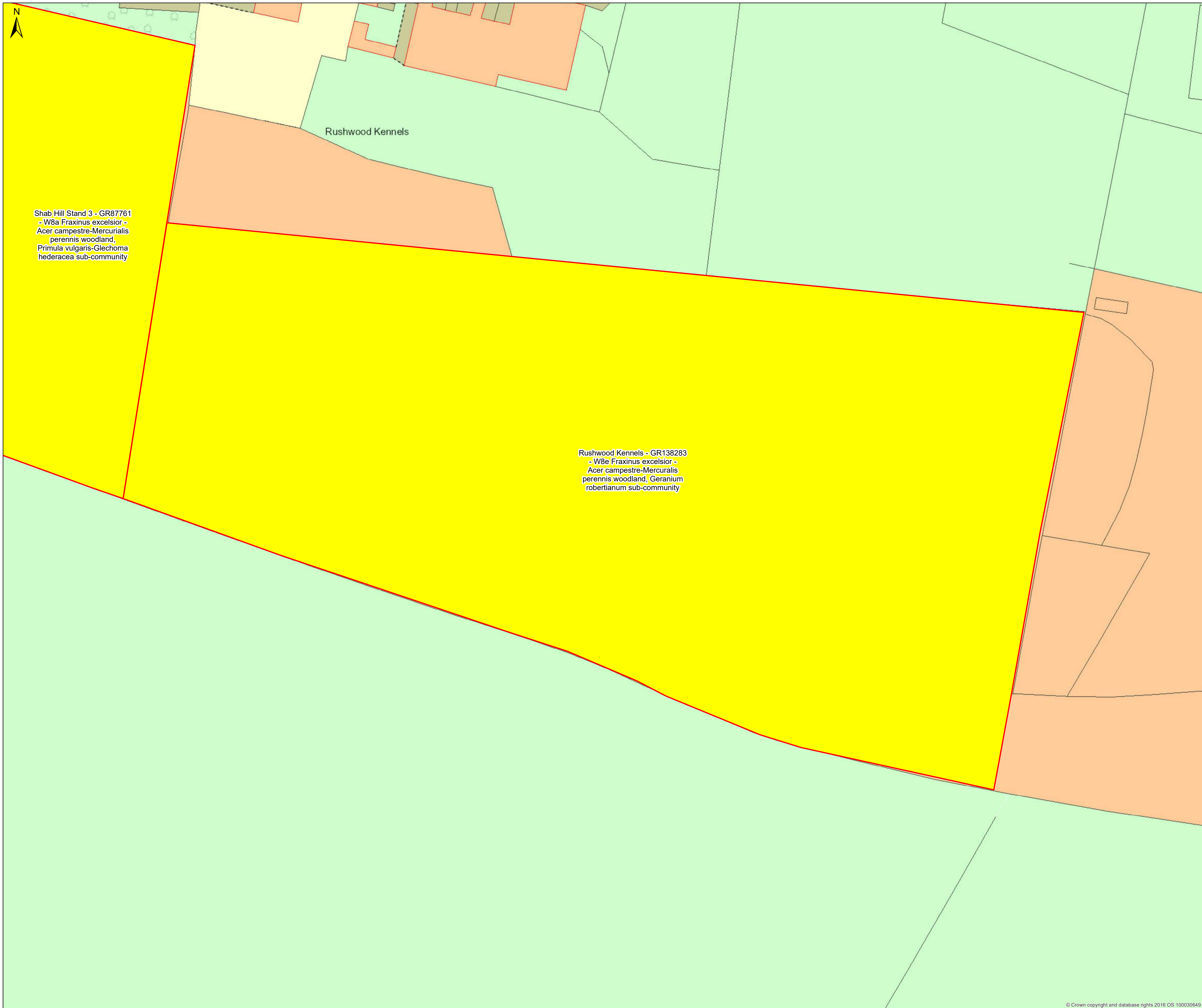
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Drawing Status	Suitability
FOR INFORMATION	S2

Project Title
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Drawing Title
NVC WOODLAND SURVEYS
Page 5 of 18

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Drawing Number	HE PIN	Originator	Volume	Project Ref. No.					
551505 - MMSJV - EBD -				551505					
000 - DR - LB -		00051		Revision					
				P01					



Notes

Legend

Woodland Locations

P01	12/07/2019	First Revision	TW	VH	SM
Rev	Date	Amendment Details	Drawn	Chk'd	App'd

Mott MacDonald Sweco

Client

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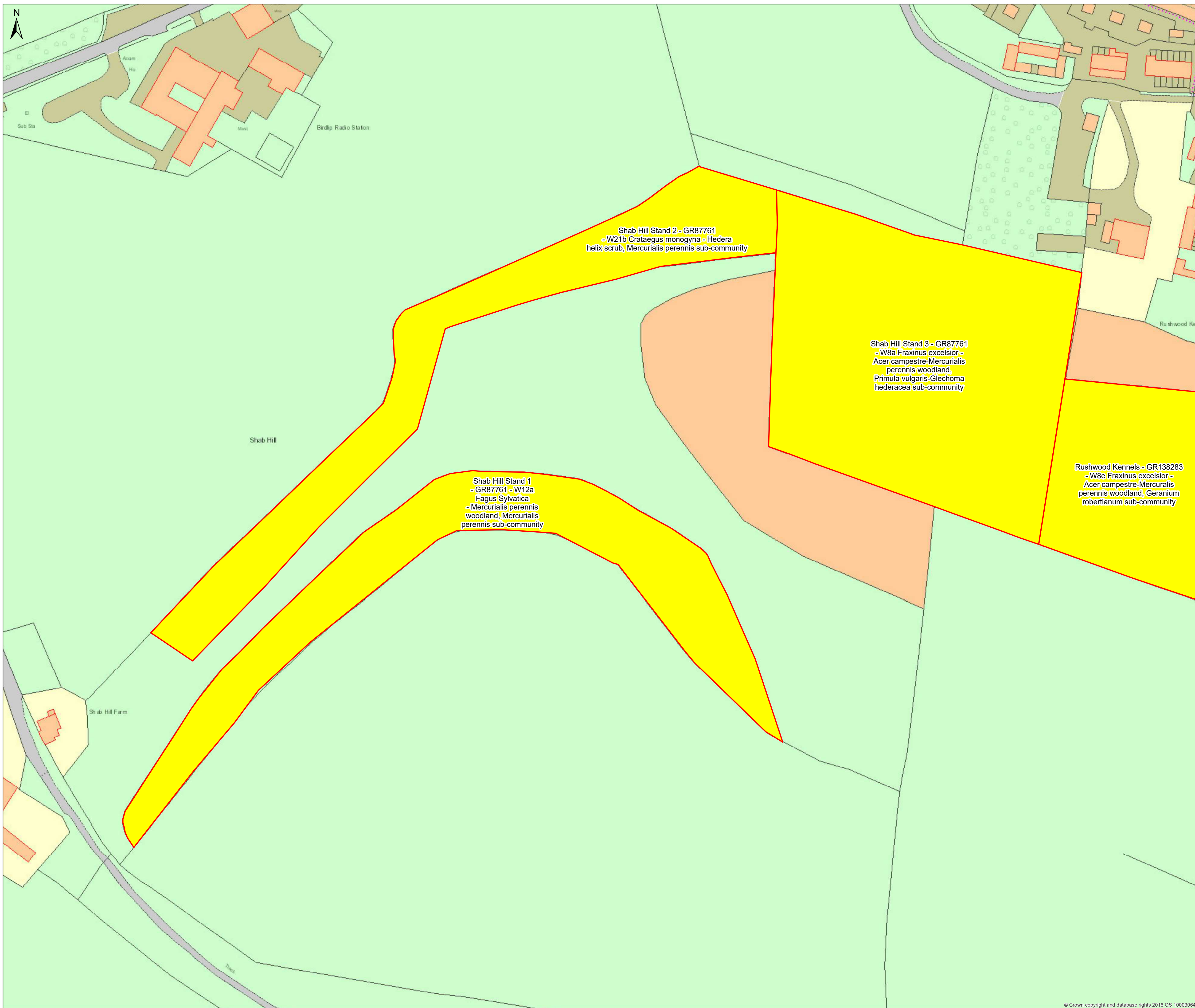
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Drawing Title
 NVC WOODLAND SURVEYS
 Page 6 of 18

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Original Size	A1	Date	12/07/2019	Date	12/07/2019	Date	12/07/2019	Date	12/07/2019
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Drawing Number	HE PIN	Originator	Volume	Project Ref. No.
551505 - MMSJV - EBD -				551505
000 - DR - LB -			00051	Revision P01



Shab Hill Stand 2 - GR87761
 - W21b Crataegus monogyna - Hedera helix scrub, Mercurialis perennis sub-community

Shab Hill Stand 3 - GR87761
 - W8a Fraxinus excelsior - Acer campestre-Mercurialis perennis woodland, Primula vulgaris-Glechoma hederacea sub-community

Shab Hill Stand 1 - GR87761 - W12a
 - Fagus sylvatica - Mercurialis perennis woodland, Mercurialis perennis sub-community

Rushwood Kennels - GR138283
 - W8e Fraxinus excelsior - Acer campestre-Mercurialis perennis woodland, Geranium robertianum sub-community

Notes

Legend

Woodland Locations

P01	12/07/2019	First Revision	TW	VH	SM
Rev	Date	Amendment Details	Drawn	Chk'd	App'd

Mott MacDonald Sweco

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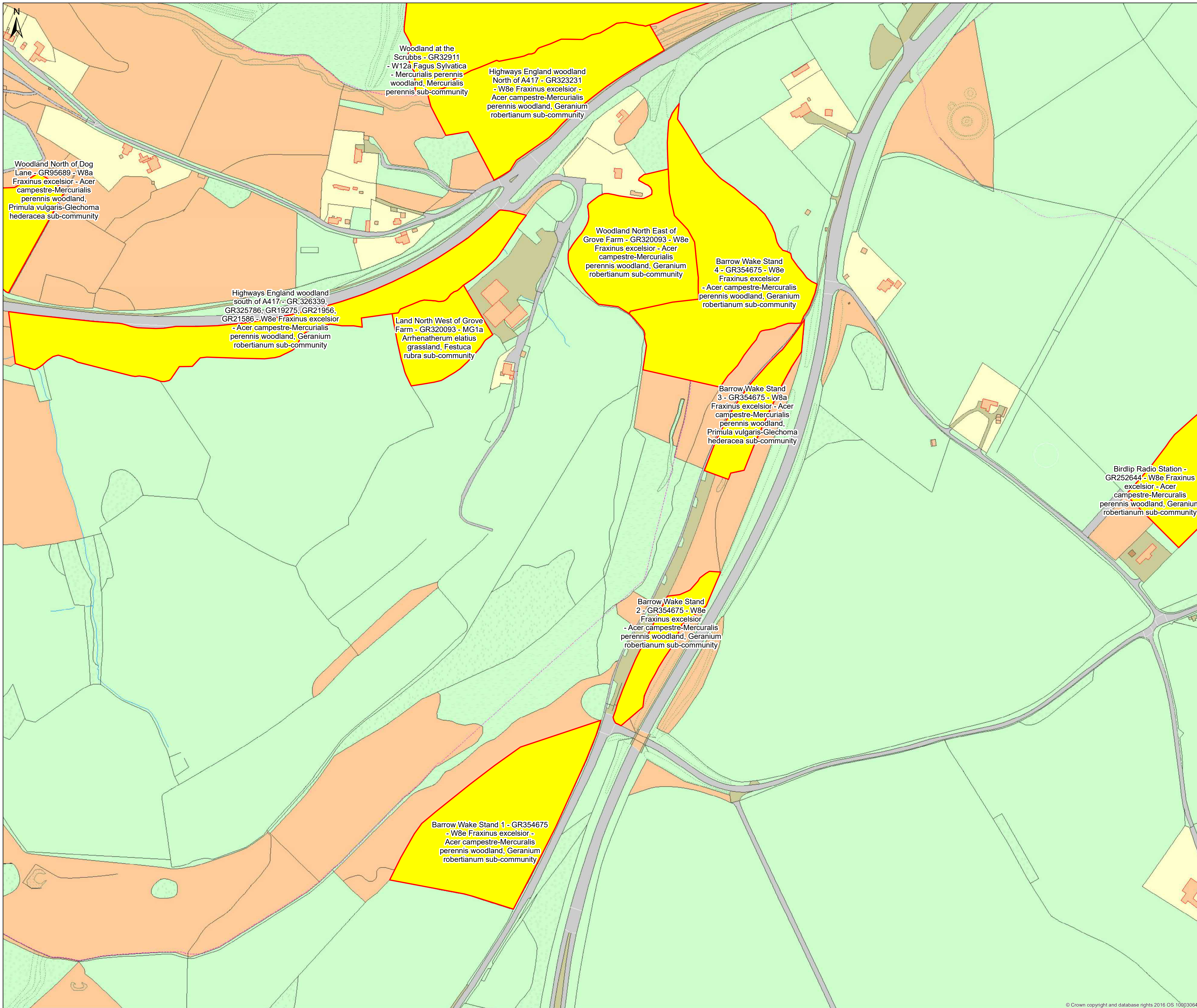
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FOR INFORMATION	S2

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Drawing Title
NVC WOODLAND SURVEYS
 Page 7 of 18

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Drawing Number	Originator	Volume	Project Ref. No.
551505 - MMSJV	EBD	-	551505
000	DR	LB	00051
Location	Type	Role	Number
			P01



Notes

Legend

- Woodland Locations

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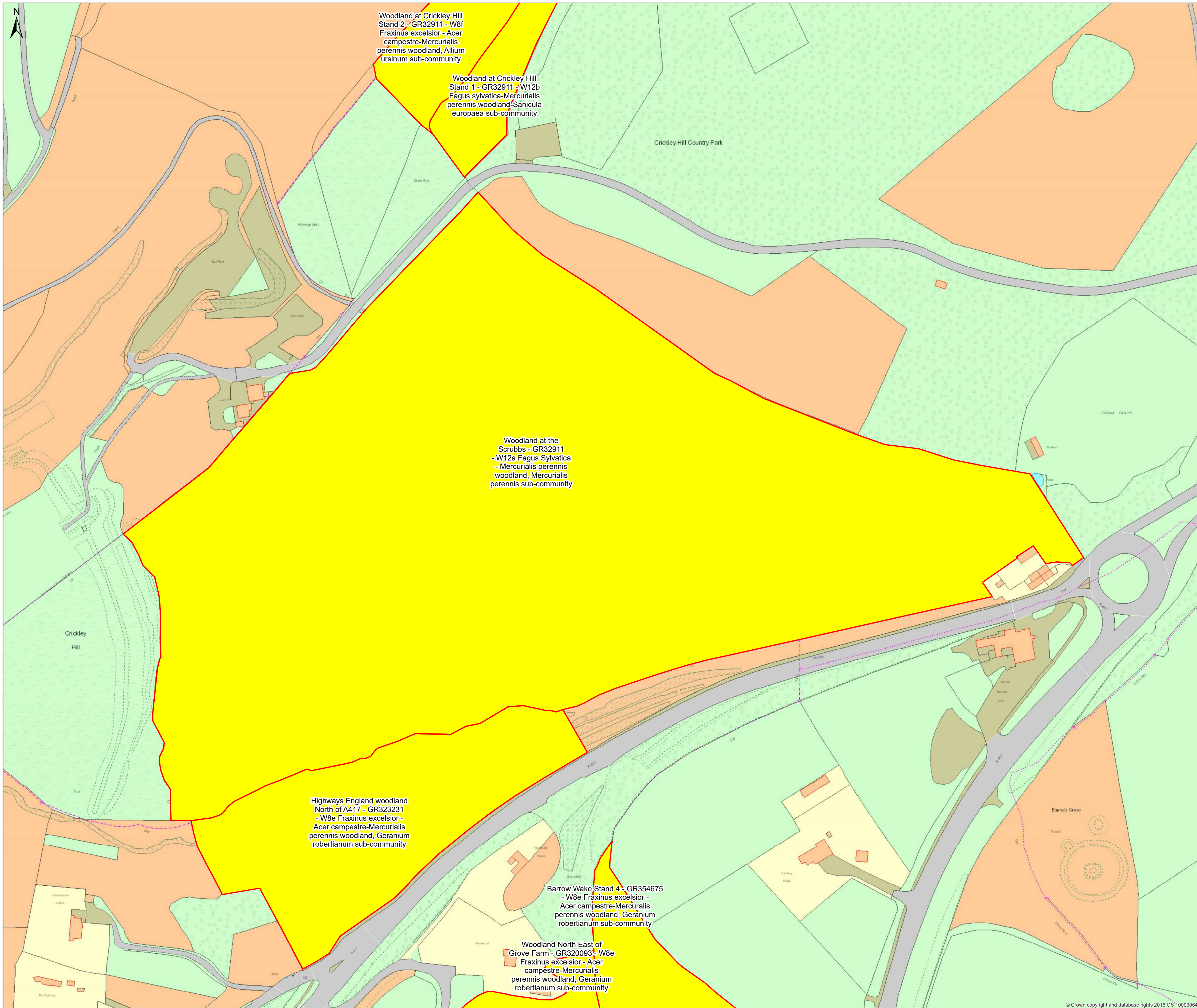
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NVC WOODLAND SURVEYS
Page 8 of 18

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551505 - MMSJV	-	EBD	-	551505
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		LB		Revision
				P01



Notes

Legend

Woodland Locations

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Rev	Date	Amendment Details	Drawn	Chk'd	App'd

Mott MacDonald Sweco

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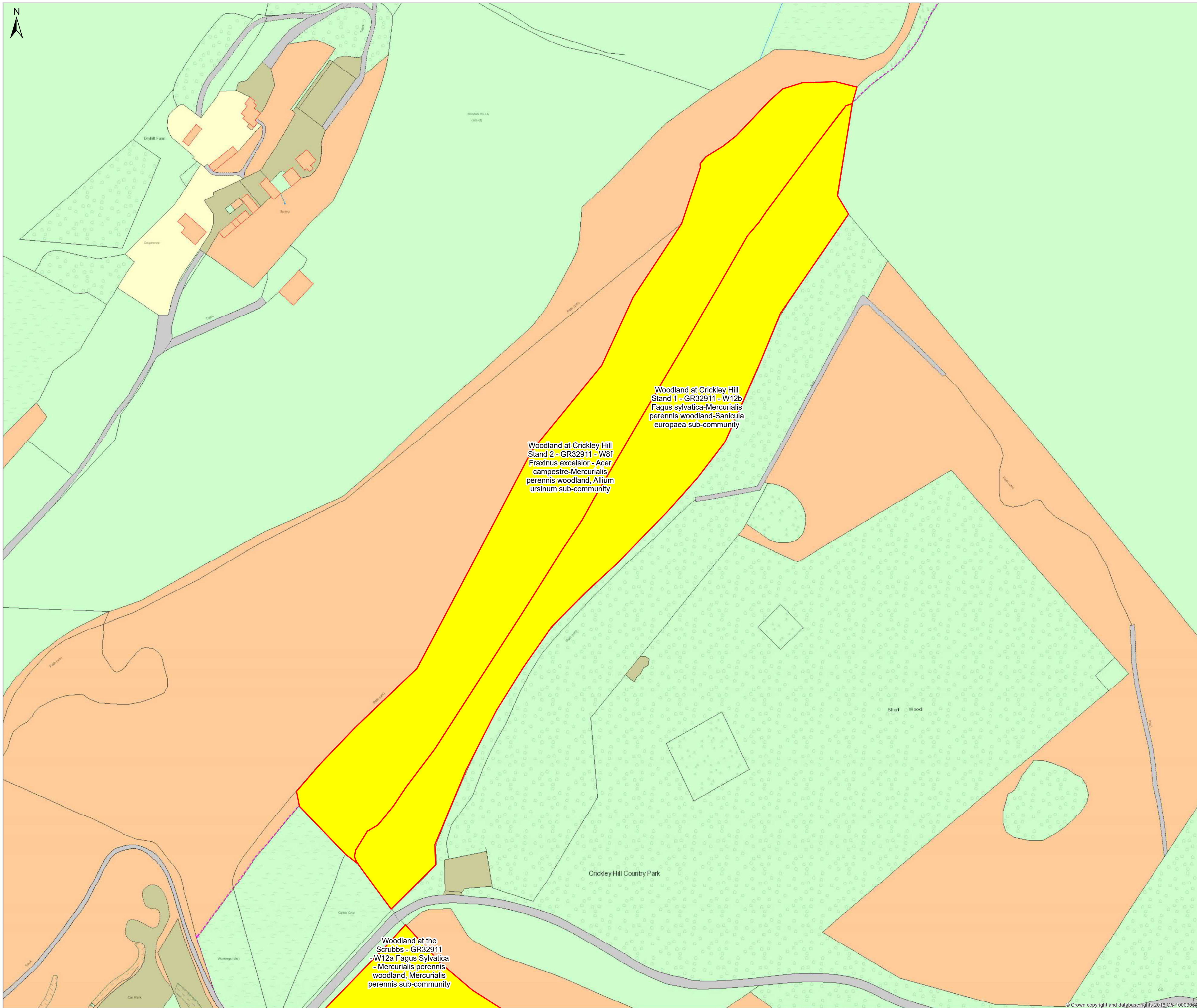
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NVC WOODLAND SURVEYS
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Location Type Role Number			Revision	P01



Notes

Legend

Woodland Locations

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Rev	Date	Amendment Details	Drawn	Chk'd	App'd

Mott MacDonald Sweco



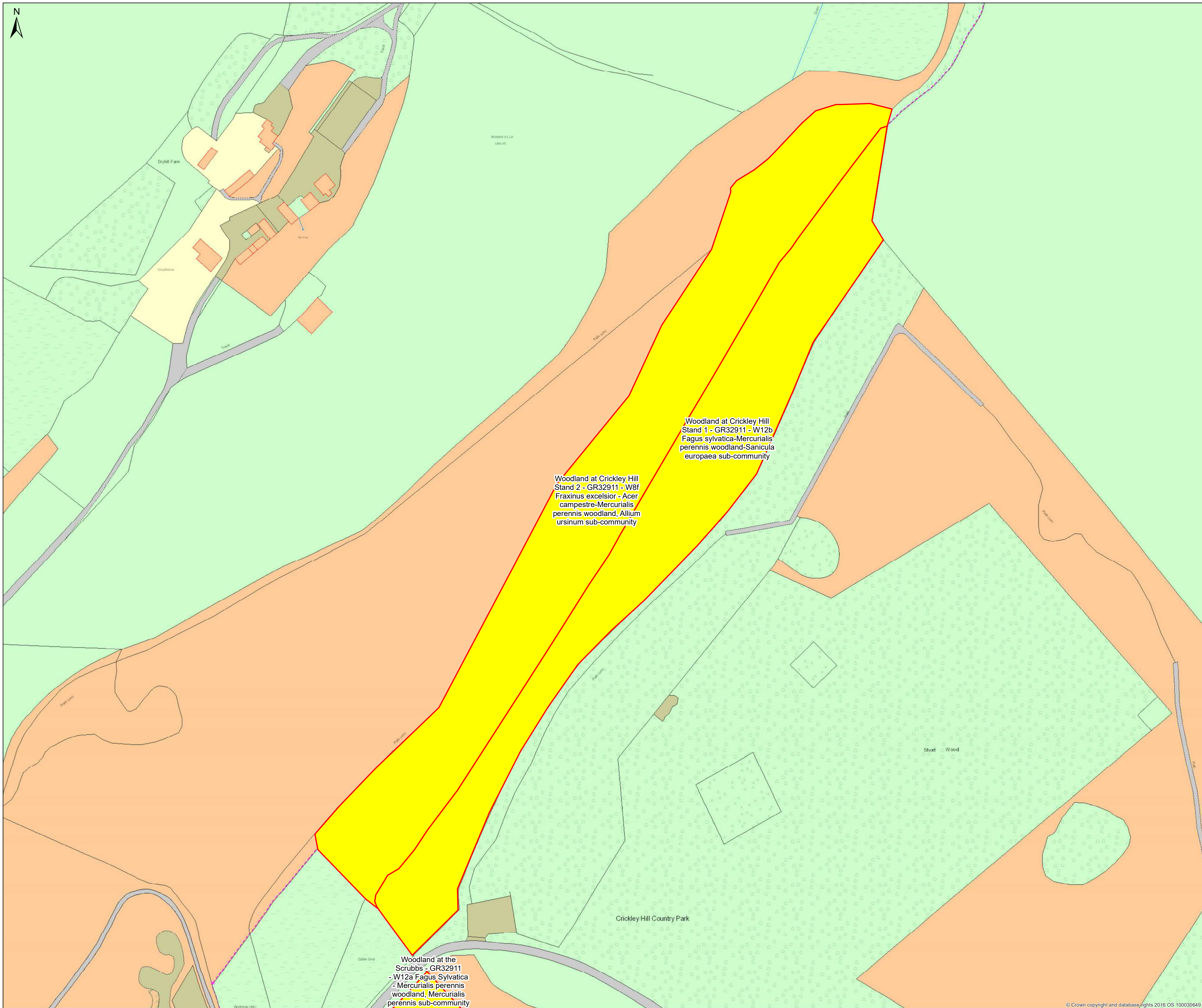
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NVC WOODLAND SURVEYS
Page 10 of 18

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Location	Type	Role	Number	Revision
				P01



Notes

Legend

Woodland Locations

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Mott MacDonald Sweco

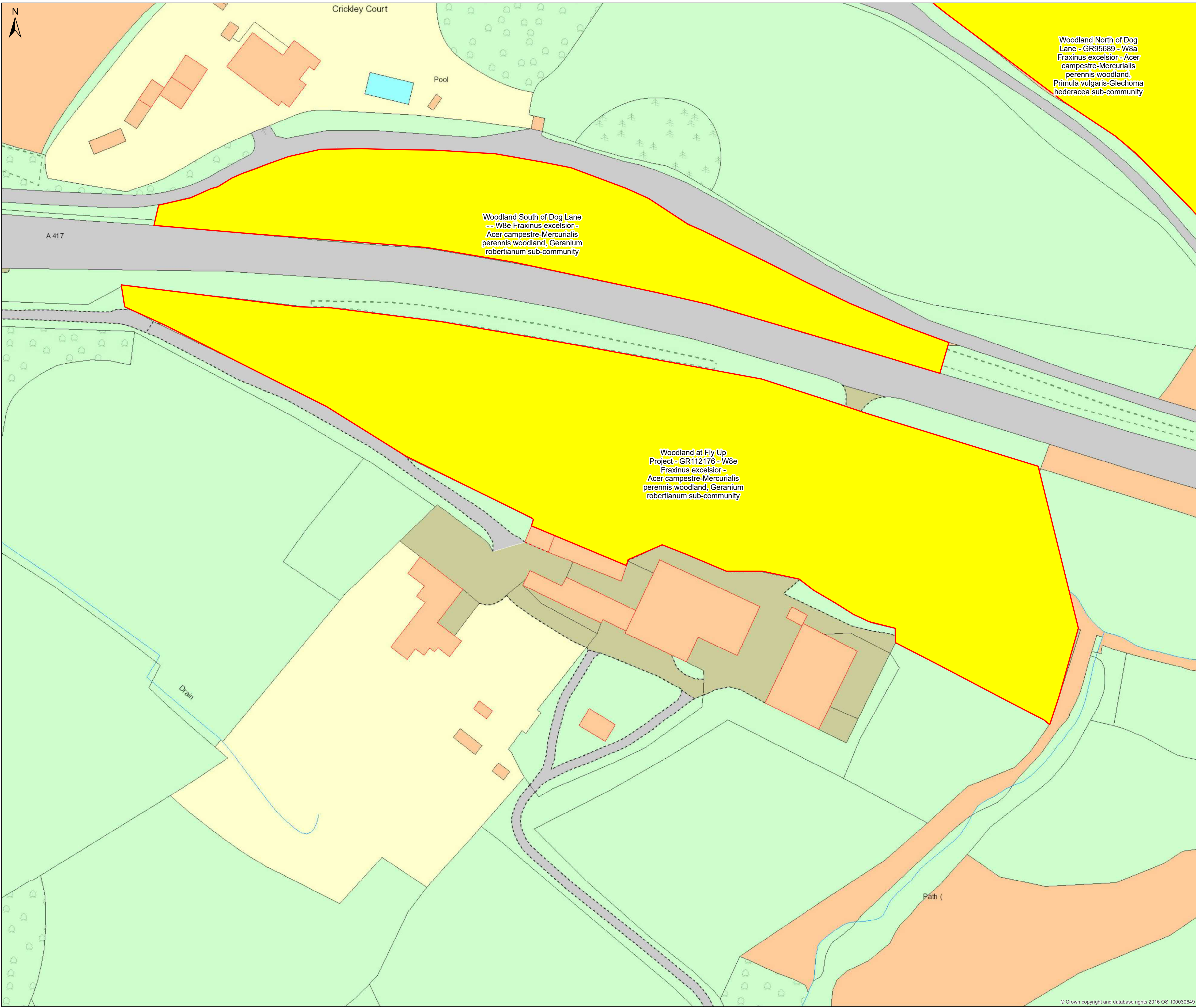


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551505	MMSJV	EBD	-	551505
000	DR	LB	00051	Revision
				P01



Notes

Legend

 Woodland Locations

P01	12/07/2019	First Revision	TW	VH	SM
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Mott MacDonald Sweco



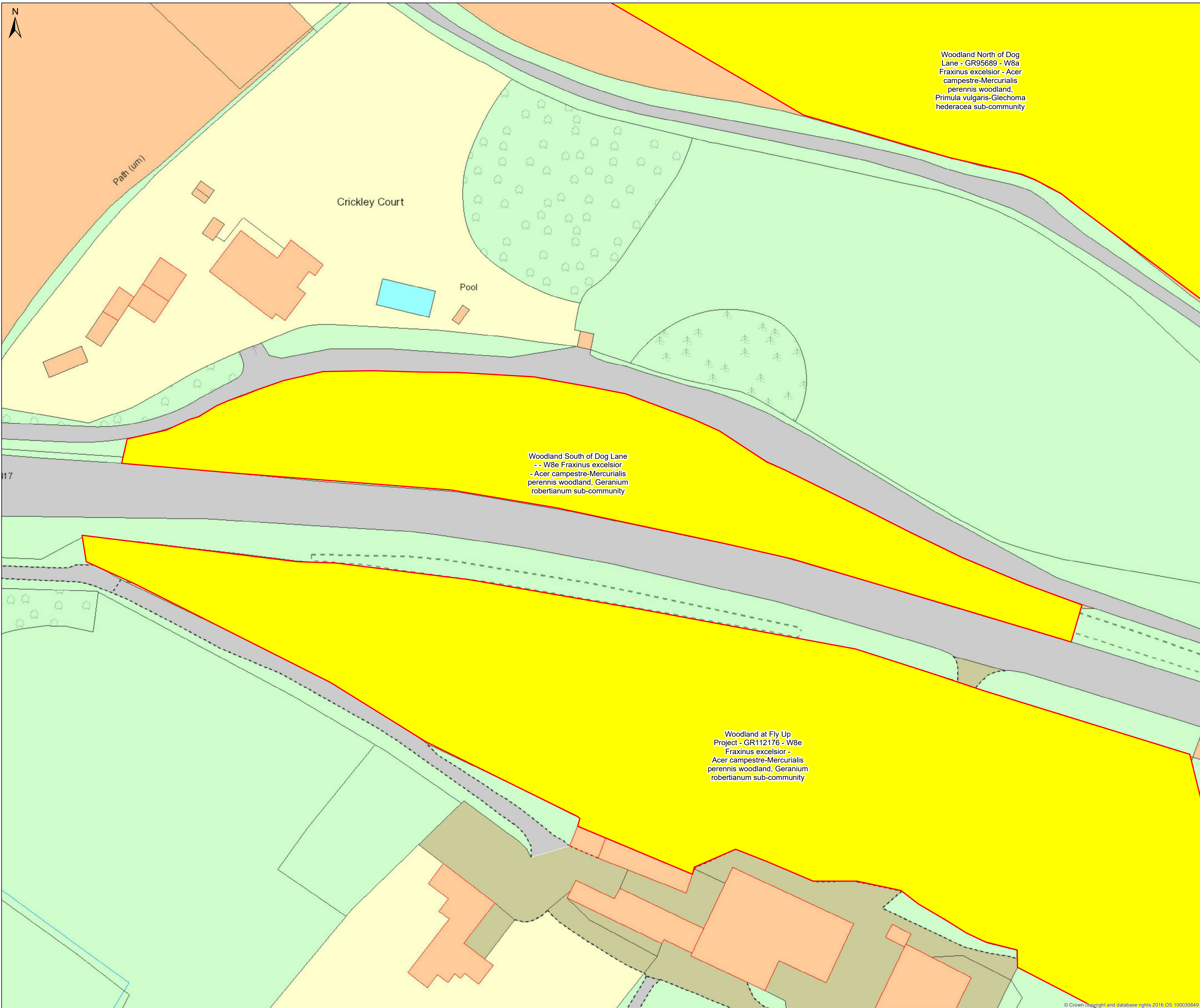
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NVC WOODLAND SURVEYS
 Page 12 of 18

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551505 - MMSJV	-	EBD	-	551505
000	-	DR	-	00051
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				Revision
				P01



Notes

Legend

Woodland Locations

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Mott MacDonald Sweco

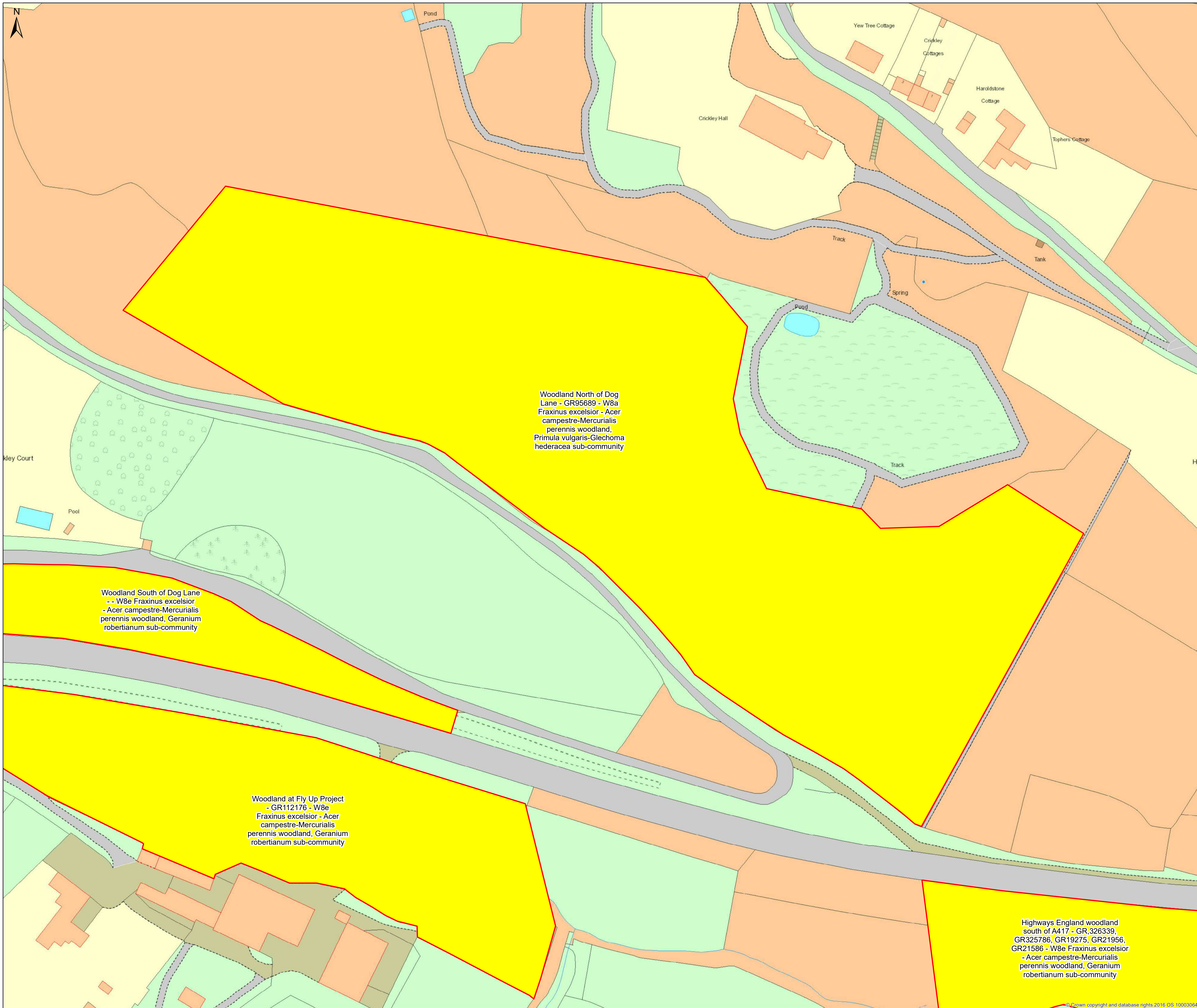


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Drawing Title: NVC WOODLAND SURVEYS
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Location	DR	Type	LB	Number	00051	Revision	P01		



Notes

Legend

Woodland Locations

Rev	Date	Amendment Details	Drawn	Chk'd	App'd
P01	12/07/2019	First Revision	TW	VH	SM

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Client: highways england

Drawing Status: **FOR INFORMATION** Suitability: **S2**

Project Title: **A417 Missing Link**

Drawing Title: **NVC WOODLAND SURVEYS**
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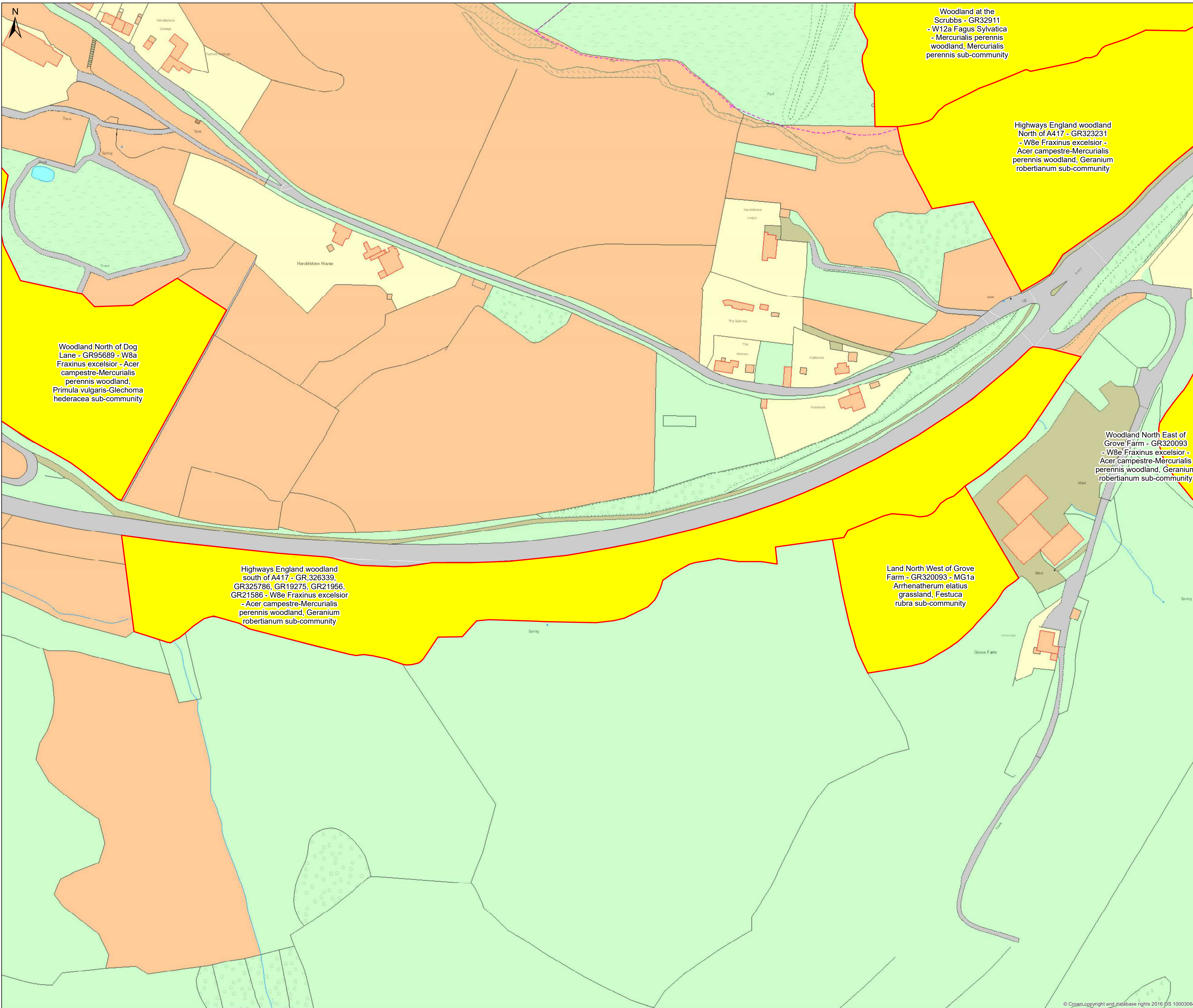
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Drawing Number	Originator	Volume	Project Ref. No.
551505 - MMSJV	EBD	-	551505

Location	Type	Role	Number	Revision
000	DR	LB	00051	P01

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Notes

Legend

Woodland Locations

P01	12/07/2019	First Revision	TW	VH	SM
Rev	Date	Amendment Details	Drawn	Chk'd	App'd

Mott MacDonald Sweco



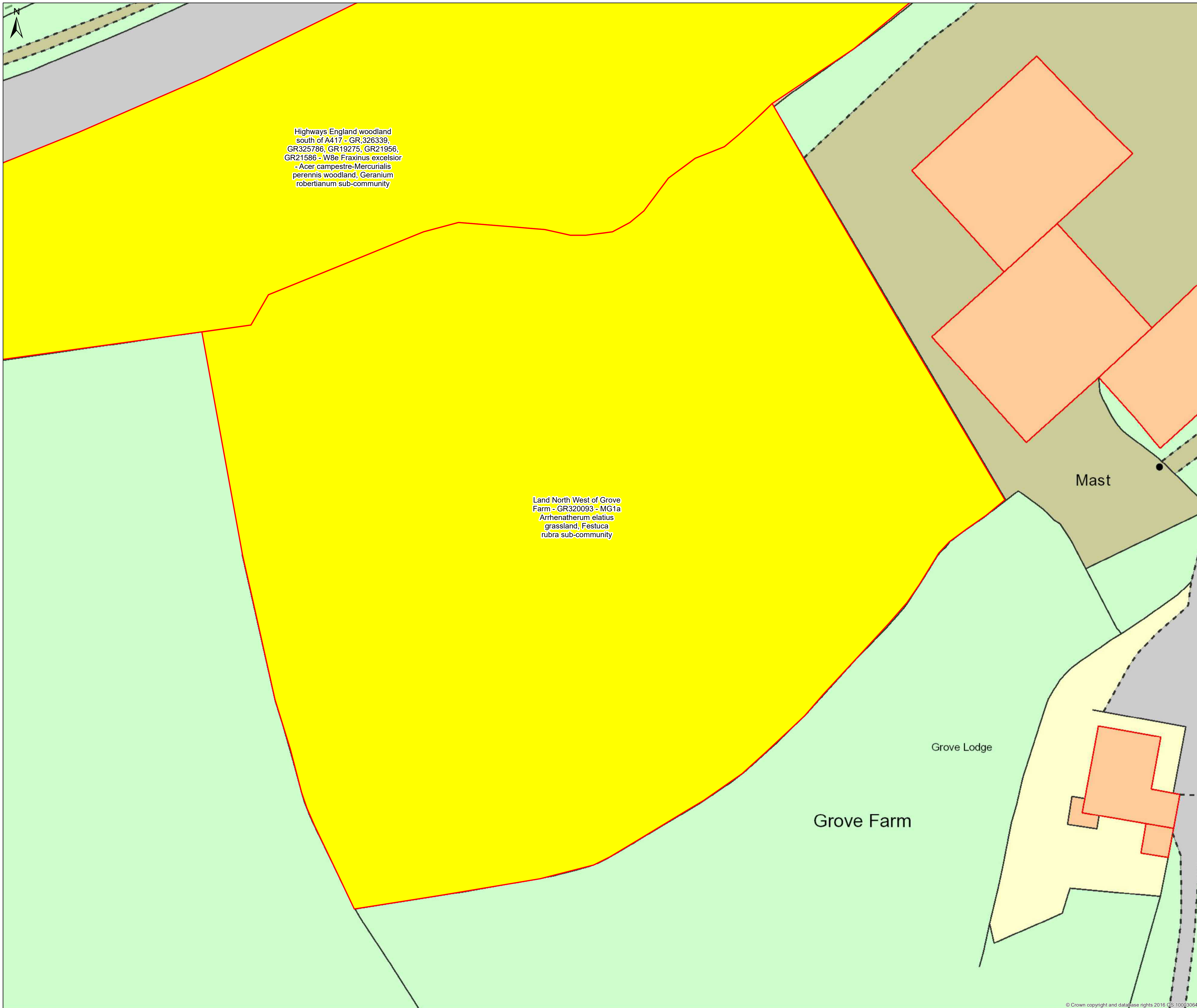
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NVC WOODLAND SURVEYS
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551505 - MMSJV	-	EBD	-	551505
000	-	DR	-	00051
Location	Type	Role	Number	Revision
				P01



Highways England woodland
south of A417 - GR:326339,
GR325786, GR19275, GR21956,
GR21586 - W8e Fraxinus excelsior
- Acer campestre-Mercurialis
perennis woodland, Geranium
robertianum sub-community

Land North West of Grove
Farm - GR320093 - MG1a
Arrhenatherum elatius
grassland, Festuca
rubra sub-community

Mast

Grove Lodge

Grove Farm

Notes

Legend

Woodland Locations

P01	12/07/2019	First Revision	TW	VH	SM
Rev	Date	Amendment Details	Drawn	Chk'd	App'd

**Mott MacDonald
Sweco**



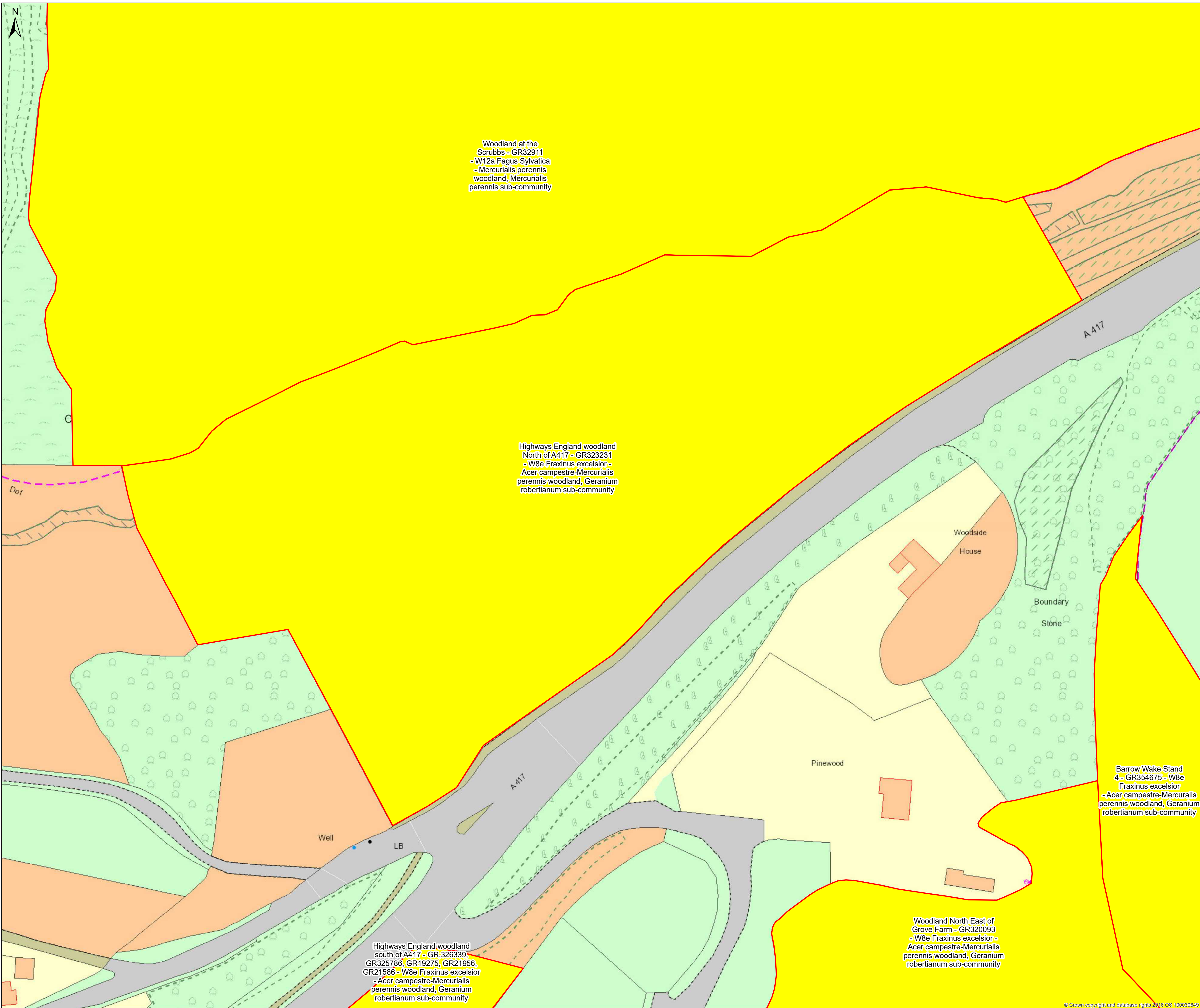
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NVC WOODLAND SURVEYS
Page 16 of 18

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Location	Type	Role	Number
			P01



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Legend

Woodland Locations

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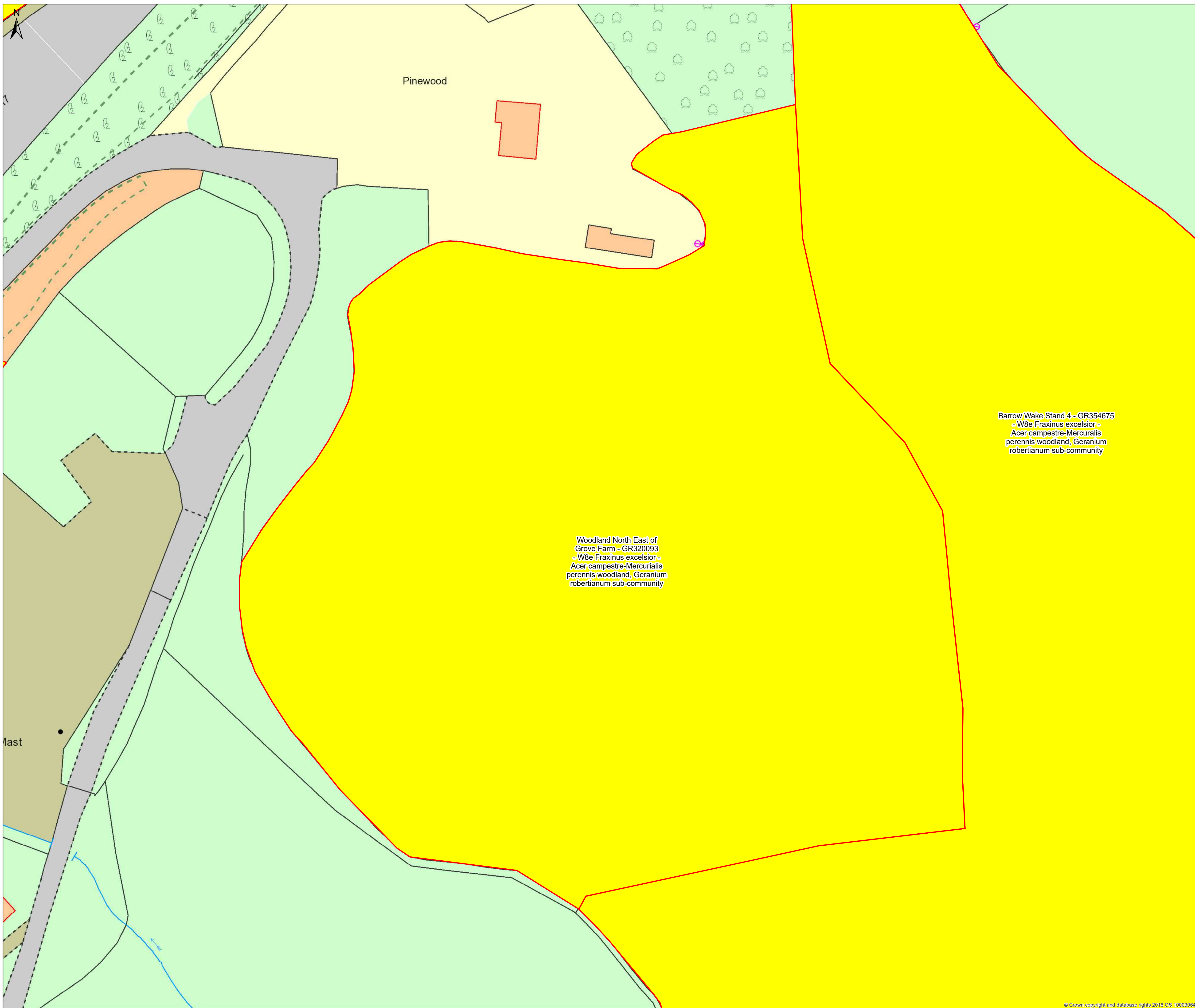
Mott MacDonald Sweco



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Drawing Status	FOR INFORMATION
Suitability	S2

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Legend

Woodland Locations

P01	12/07/2019	First Revision	TW	VH	SM
Rev	Date	Amendment Details	Drawn	Chk'd	App'd

Mott MacDonald Sweco

Client

Drawing Status	Suitability
FOR INFORMATION	S2




Project Title
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Drawing Title
NVC WOODLAND SURVEYS
Page 18 of 18

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000	- DR	- LB	-	00051
	Location	Type	Role	Number
				P01

Appendix B Photographs of Survey Quadrats

Land Parcel	Photo
Ullen Wood (GR354154) Canopy Quadrat	
Ullen Wood (GR354154) Ground flora Quadrat 1	
Ullen Wood (GR354154) Ground flora Quadrat 2	

Ullen Wood
(GR354154)
Ground flora
Quadrat 3



Ullen Wood
(GR354154)
Ground flora
Quadrat 4



Ullen Wood
(GR354154)
Ground flora
Quadrat 5



Ullen Wood
(GR352384)
Canopy
Quadrat



Ullen Wood
(GR352384)
Ground flora
Quadrat 1



Ullen Wood
(GR352384)
Ground flora
Quadrat 2



Ullen Wood
(GR352384)
Ground flora
Quadrat 3



Ullen Wood
(GR352384)
Ground flora
Quadrat 4



Ullen Wood
(GR352384)
Ground flora
Quadrat 5



Ullen Wood
(GR346313)
Canopy
Quadrat



Ullen Wood
(GR346313)
Ground flora
Quadrat 1



Ullen Wood
(GR346313)
Ground flora
Quadrat 2



Ullen Wood
(GR346313)
Ground flora
Quadrat 3



Ullen Wood
(GR346313)
Ground flora
Quadrat 4



Ullen Wood
(GR346313)
Ground flora
Quadrat 5



The Scrubbs
Canopy
Quadrat



The Scrubbs
Ground flora
Quadrat 1



The Scrubbs
Ground flora
Quadrat 2



The Scrubbs
Ground flora
Quadrat 3



The Scrubbs
Ground flora
Quadrat 4



The Scrubbs
Ground flora
Quadrat 5



Crickley Hill
Stand 1
Canopy
Quadrat



Crickley Hill
Stand 1
Ground flora
Quadrat 1



Crickley Hill
Stand 1
Ground flora
Quadrat 2



Crickley Hill
Stand 1
Ground flora
Quadrat 3



Crickley Hill
Stand 1
Ground flora
Quadrat 4



Crickley Hill
Stand 1
Ground flora
Quadrat 5



Crickley Hill
Stand 2
Canopy
Quadrat



Crickley Hill
Stand 2
Ground flora
Quadrat 1



Crickley Hill
Stand 2
Ground flora
Quadrat 2



Crickley Hill
Stand 2
Ground flora
Quadrat 3



Crickley Hill
Stand 2
Ground flora
Quadrat 4



Crickley Hill
Stand 2
Ground flora
Quadrat 5



Barrow Wake
Stand 1
Canopy
Quadrat



Barrow Wake
Stand 1
Ground flora
Quadrat 1



Barrow Wake
Stand 1
Ground flora
Quadrat 2



Barrow Wake
Stand 1
Ground flora
Quadrat 3



Barrow Wake
Stand 1
Ground flora
Quadrat 4



Barrow Wake
Stand 1
Ground flora
Quadrat 5



Barrow Wake
Stand 2
Canopy
Quadrat



Barrow Wake
Stand 2
Ground flora
Quadrat 1



Barrow Wake
Stand 2
Ground flora
Quadrat 2



Barrow Wake
Stand 2
Ground flora
Quadrat 3



Barrow Wake
Stand 2
Ground flora
Quadrat 4



Barrow Wake
Stand 2
Ground flora
Quadrat 5



Barrow Wake
Stand 3
Canopy
Quadrat



Barrow Wake
Stand 3
Ground flora
Quadrat 1



Barrow Wake
Stand 3
Ground flora
Quadrat 2



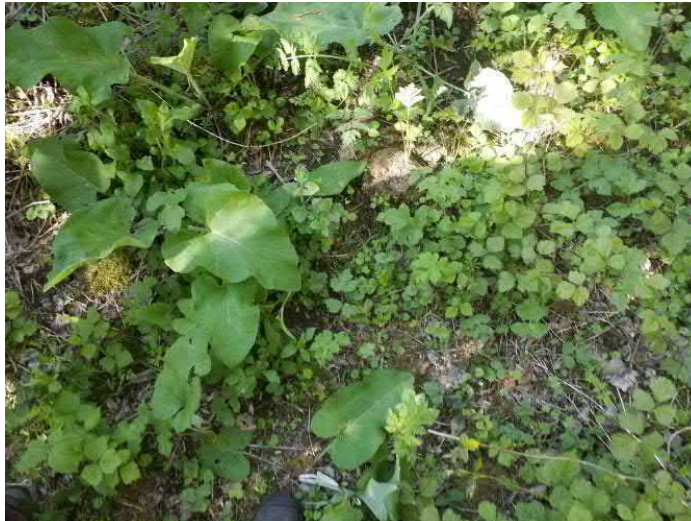
Barrow Wake
Stand 3
Ground flora
Quadrat 3



Barrow Wake
Stand 3
Ground flora
Quadrat 4



Barrow Wake
Stand 3
Ground flora
Quadrat 5



Barrow Wake
Stand 4
Canopy
Quadrat



Barrow Wake
Stand 4
Ground flora
Quadrat 1



Barrow Wake
Stand 4
Ground flora
Quadrat 2



Barrow Wake
Stand 4
Ground flora
Quadrat 3



Barrow Wake
Stand 4
Ground flora
Quadrat 4



Barrow Wake
Stand 4
Ground flora
Quadrat 5



Shab Hill
Stand 1
Canopy
Quadrat



Shab Hill
Stand 1
Ground flora
Quadrat 1



Shab Hill
Stand 1
Ground flora
Quadrat 2



Shab Hill
Stand 1
Ground flora
Quadrat 3



Shab Hill
Stand 1
Ground flora
Quadrat 4



Shab Hill
Stand 1
Ground flora
Quadrat 5



Shab Hill
Stand 2
Canopy
Quadrat



Shab Hill
Stand 2
Ground flora
Quadrat 1



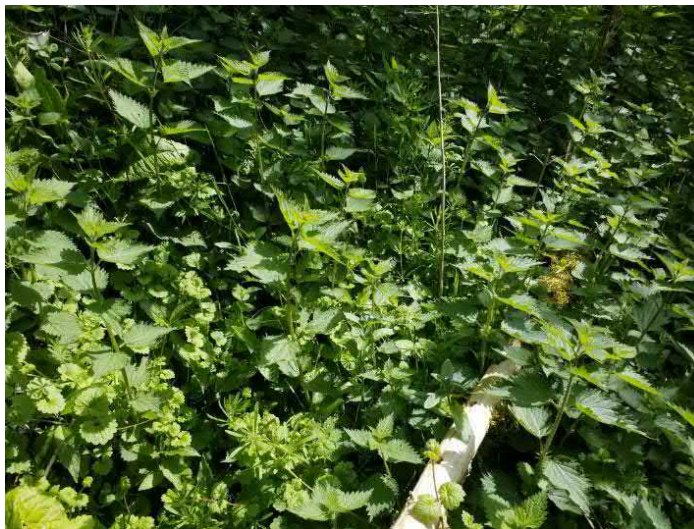
Shab Hill
Stand 2
Ground flora
Quadrat 2



Shab Hill
Stand 2
Ground flora
Quadrat 3



Shab Hill
Stand 2
Ground flora
Quadrat 4



Shab Hill
Stand 2
Ground flora
Quadrat 5



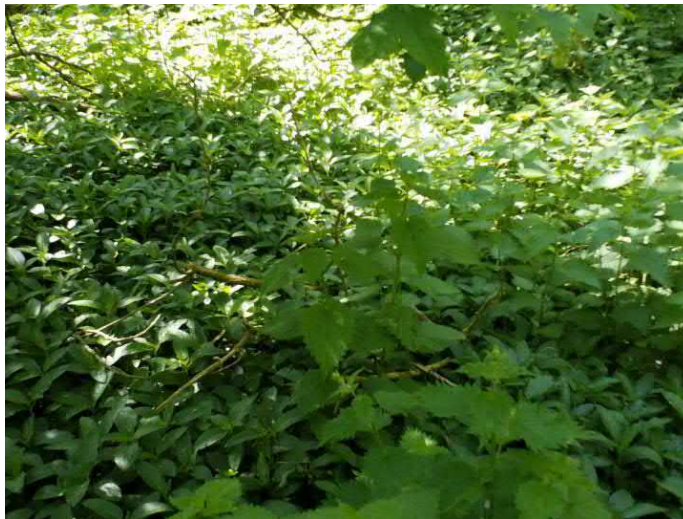
Shab Hill
Stand 3
Canopy
Quadrat



Shab Hill
Stand 3
Ground flora
Quadrat 1



Shab Hill
Stand 3
Ground flora
Quadrat 2



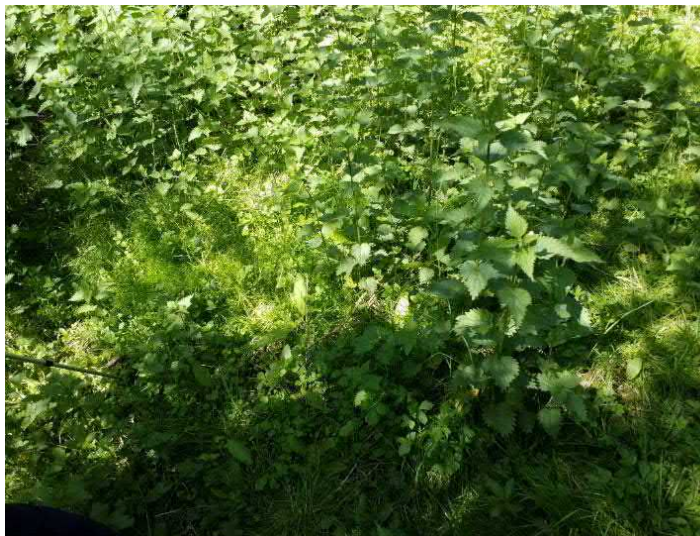
Shab Hill
Stand 3
Ground flora
Quadrat 3






Shab Hill
Stand 3
Ground flora
Quadrat 4



Shab Hill
Stand 3
Ground flora
Quadrat 5

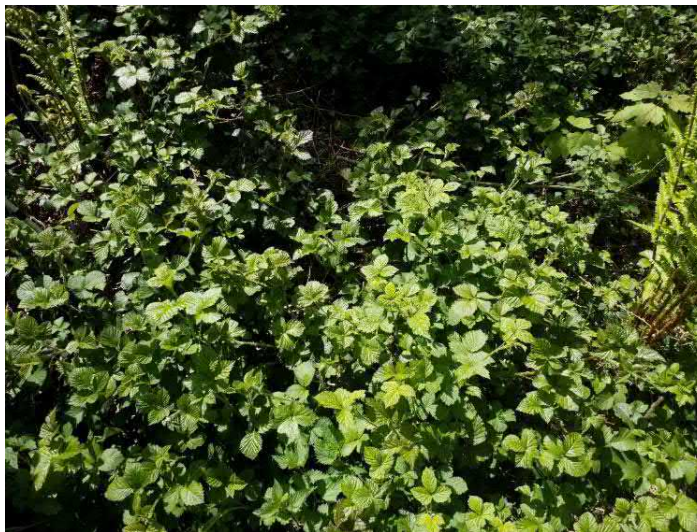


<p>Rushwood Kennels Canopy Quadrat</p>	
<p>Rushwood Kennels Ground flora Quadrat 1</p>	
<p>Rushwood Kennels Ground flora Quadrat 2</p>	
<p>Rushwood Kennels Ground flora Quadrat 3</p>	<p>No photo available</p>

Rushwood
Kennels
Ground flora
Quadrat 4



Rushwood
Kennels
Ground flora
Quadrat 5



Fly Up
Project
Canopy
Quadrat



Fly Up
Project
Ground flora
quadrat



Birdlip
Quarry
Canopy
Quadrat



Birdlip
Quarry
Ground flora
Quadrat 1



Birdlip
Quarry
Ground flora
Quadrat 2



Birdlip
Quarry
Ground flora
Quadrat 3



Birdlip
Quarry
Ground flora
Quadrat 4



Birdlip
Quarry
Ground flora
Quadrat 5



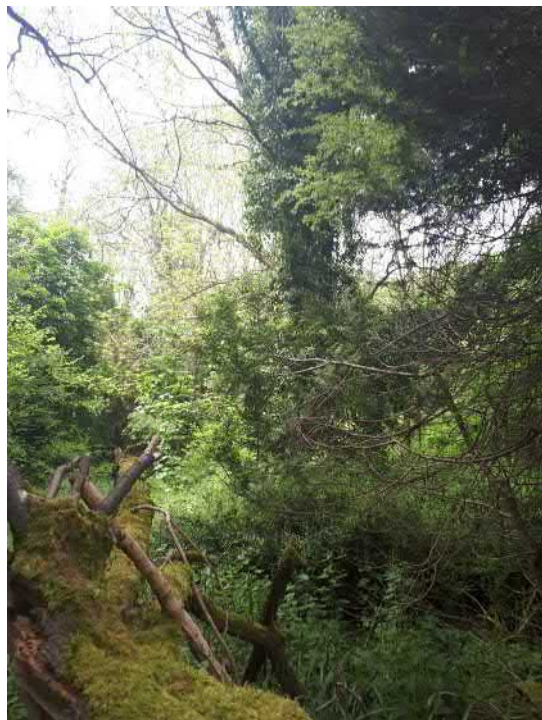
Woodland
north east of
Grove Farm
Canopy
Quadrat



Woodland
north east of
Grove Farm
Ground flora
Quadrat



Highways
England
woodland
(south of
A417)
Canopy
Quadrat



Highways
England
woodland
(south of
A417)
Ground flora
Quadrat 1



Highways
England
woodland
(south of
A417)
Ground flora
Quadrat 2



Highways
England
woodland
(south of
A417)
Ground flora
Quadrat 3



Highways
England
woodland
(south of
A417)
Ground flora
Quadrat 4



Highways
England
woodland
(south of
A417)
Ground flora
Quadrat 5



Land north
west of
Grove Farm
Canopy
Quadrat



Land north
west of
Grove Farm
Ground flora
Quadrat 1



Land north
west of
Grove Farm
Ground flora
Quadrat 2



Land north
west of
Grove Farm
Ground flora
Quadrat 3



Land north
west of
Grove Farm
Ground flora
Quadrat 4



Land north
west of
Grove Farm
Ground flora
Quadrat 5



Woodland
(south of Dog
Lane)
Canopy
Quadrat



Woodland
(south of Dog
Lane)
Ground flora
Quadrat 1



Woodland
(south of Dog
Lane)
Ground flora
Quadrat 2



Woodland
(south of Dog
Lane)
Ground flora
Quadrat 3



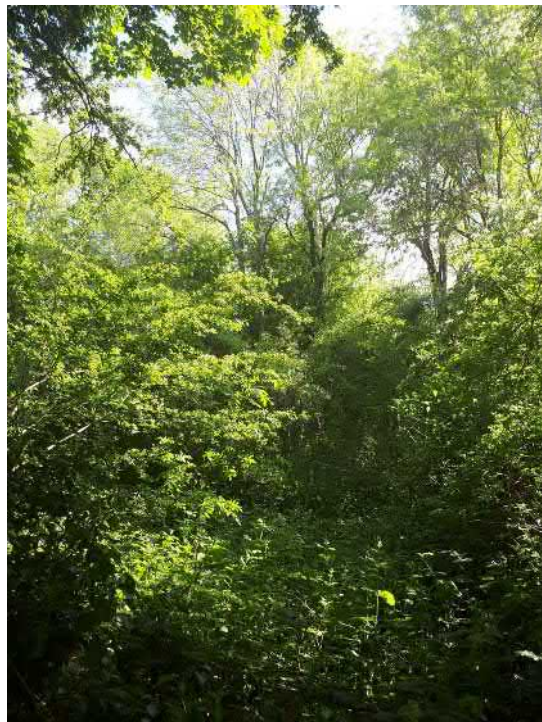
Woodland
(south of Dog
Lane)
Ground flora
Quadrat 4



Woodland
(south of Dog
Lane)
Ground flora
Quadrat 5



Woodland
(north of Dog
Lane)
Canopy
Quadrat



Woodland
(north of Dog
Lane)
Ground flora
Quadrat



Highways
England
woodland
(north of
A417)
Canopy
Quadrat



Highways
England
woodland
(north of
A417)
Ground flora
Quadrat 1



Highways
England
woodland
(north of
A417)
Ground flora
Quadrat 2



Highways
England
woodland
(north of
A417)
Ground flora
Quadrat 3



Highways
England
woodland
(north of
A417)
Ground flora
Quadrat 4



Highways
England
woodland
(north of
A417)
Ground flora
Quadrat 5



Woodland at
Birdlip Radio
Station
Canopy
Quadrat



Woodland at
Birdlip Radio
Station
Ground flora
Quadrat 1



Woodland at
Birdlip Radio
Station
Ground flora
Quadrat 2



Woodland at
Birdlip Radio
Station
Ground flora
Quadrat 3



Woodland at
Birdlip Radio
Station
Ground flora
Quadrat 4



Woodland at
Birdlip Radio
Station
Ground flora
Quadrat 5



Woodland at
Cukoopen
Barn Farm
Canopy
Quadrat



Woodland at
Cukoopen
Barn Farm
Ground flora
Quadrat 1



Woodland at
Cukoopen
Barn Farm
Ground flora
Quadrat 2



Woodland at
Cukoopen
Barn Farm
Ground flora
Quadrat 3



Woodland at
Cukoopen
Barn Farm
Ground flora
Quadrat 4



Woodland at
Cukoopen
Barn Farm
Ground flora
Quadrat 5



Appendix C Species Tables

Species name	Scientific name	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Constancy	Dafor values
CANOPY								
Beech	<i>Fagus sylvatica</i>	4						O
Ash	<i>Fraxinus excelsior</i>	8						F
SUB CANOPY								
Hawthorn	<i>Crataegus monogyna</i>	2						R
Elder	<i>Sambucus nigra</i>	2						R
GROUND FLORA LAYER								
Ash (seedlings)	<i>Fraxinus excelsior</i> (seedlings)	2	1	4	4	1	V	F
Dog's mercury	<i>Mercurialis perennis</i>	4	8	9	5	5	V	LD
Wood avens	<i>Geum urbanum</i>	5		1	2	4	IV	LF
Rough-stalked feather-moss	<i>Brachythecium rutabulum</i>	4		4		4	III	LF
Bramble	<i>Rubus fruticosus</i> agg.	4		4	2		III	O
Violet species	<i>Viola</i> spp.				4	4	II	O
Dandelion	<i>Taraxacum officinale</i> agg.	1					I	R
Ivy	<i>Hedera helix</i>	3					I	R
Burdock species	<i>Arctium</i> spp.		3				I	R
Cleavers	<i>Galium aparine</i>		1				I	R
Common nettle	<i>Urtica dioica</i>		2				I	R
Hazel (seedlings)	<i>Corylus avellana</i> (seedlings)		1				I	R
Common feather-moss	<i>Kindbergia praelonga</i>		2				I	R
Barren strawberry	<i>Potentilla sterilis</i>				2		I	R
Hawthorn (seedlings)	<i>Crataegus monogyna</i> (seedlings)				1		I	R
Bare ground		9	4	5	9	4		
Species present not in quadrats								
Crosswort	<i>Cruciata laevipes</i>							LF
Pedunculate oak	<i>Quercus robur</i>							R
Ground-ivy	<i>Glechoma hederacea</i>							LF
Common knapweed	<i>Centaurea nigra</i>							R
Wood speedwell	<i>Veronica montana</i>							R
Salad burnet	<i>Sanguisorba minor</i>							R
Hogweed	<i>Heracleum sphondylium</i>							R
Cock's-foot	<i>Dactylis glomerata</i>							R
Perennial rye-grass	<i>Lolium perenne</i>							R
Curled dock	<i>Rumex crispus</i>							R
Broad-leaved dock	<i>Rumex obtusifolius</i>							LF
Lords-and-ladies	<i>Arum maculatum</i>							R
Lesser celandine	<i>Ficaria verna</i>							R
Smooth meadow-grass	<i>Poa pratensis</i>							R
Ivy-leaved speedwell	<i>Veronica hederifolia</i>							R
Grey willow	<i>Salix cinerea</i>							R
Common dog-violet	<i>Viola riviniana</i>							R
Sycamore	<i>Acer pseudoplatanus</i>							R
Common smoothcap	<i>Atrichum undulatum</i>							R
Hypnum moss	<i>Hypnum cupressiforme</i>							R
Beech (seedlings)	<i>Fagus sylvatica</i> (seedlings)							R

Barrow Wake Stand 2

Species name	Scientific name	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Constancy	Dafor values
CANOPY								
Grey Willow	<i>Salix cinerea subsp. oleifolia</i>	5						F
Sycamore	<i>Acer pseudoplatanus</i>	2						R
SUB CANOPY								
Hawthorn	<i>Crataegus monogyna</i>	2						R
Hazel	<i>Corylus avellana</i>	6						F
Elder	<i>Sambucus nigra</i>	3						O
GROUND FLORA LAYER								
Common nettle	<i>Urtica dioica</i>	4	4	4	5	2	V	F
Common feather-moss	<i>Kindbergia praelonga</i>	4		2	4	6	IV	F
Herb-robert	<i>Geranium robertianum</i>	4	1		5	1	IV	F
Dog's Mercury	<i>Mercurialis perennis</i>	5	7		4		III	O/LA
Rough-stalked feather-moss	<i>Brachythecium rutabulum</i>		4	4	5		III	F
Cleavers	<i>Galium aparine</i>				8	1	III	LA
Bramble	<i>Rubus fruticosus agg.</i>	4			2	5	III	O
Ivy-leaved speedwell	<i>Veronica hederifolia</i>	4		9		5	III	LD
Ground-ivy	<i>Glechoma hederacea</i>	4					I	R
Lords-and-ladies	<i>Arum maculatum</i>		1				I	R
Hogweed	<i>Heracleum sphondylium</i>			1			I	R
Wood avens	<i>Geum urbanum</i>					1	I	R
Lesser Celandine	<i>Ficaria verna</i>					2	I	R
Smooth meadow-grass	<i>Poa pratensis</i>					2	I	R
Violet species	<i>Viola spp.</i>					1	I	R
Bare ground		8	5	4	4	7		
Species present not in quadrats								
Great willowherb	<i>Epilobium hirsutum</i>							LF
White dead-nettle	<i>Lamium album</i>							R
Garlic mustard	<i>Alliaria petiolata</i>							R
Cow parsley	<i>Anthriscus sylvestris</i>							R
Dogwood	<i>Cornus sanguinea</i>							R
Male fern	<i>Dryopteris filix-mas</i>							R
Green alkanet	<i>Pentaglottis sempervirens</i>							R
Burdock species	<i>Arctium spp.</i>							R

Species name	Scientific name	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Constancy	Dafor values
CANOPY								
Grey willow	<i>Salix cinerea</i>	2						R
Ash	<i>Fraxinus excelsior</i>	5						F
SUB CANOPY								
Hazel	<i>Corylus avellana</i>	5						F
Elder	<i>Sambucus nigra</i>	4						O
GROUND FLORA LAYER								
Bramble	<i>Rubus fruticosus agg.</i>	4		1	6	4	IV	F
Wood avens	<i>Geum urbanum</i>		5	2	4	4	IV	F
Ground-ivy	<i>Glechoma hederacea</i>	2	2		1	4	IV	F
Hogweed	<i>Heracleum sphondylium</i>	1			4	2	III	O
Cleavers	<i>Galium aparine</i>	1			4	1	III	O
Rough-stalked feather-moss	<i>Brachythecium rutabulum</i>	3	4		4		III	O
Common dog-violet	<i>Viola riviniana</i>	2	2	1			III	O
Smooth meadow-grass	<i>Poa pratensis</i>	2		2		2	III	O
Violet species	<i>Viola spp.</i>	2	2	4			III	O
Common feather-moss	<i>Kindbergia praelonga</i>	4				5	II	LF
Red campion	<i>Silene dioica</i>		2			4	II	O
Hypnum moss	<i>Hypnum cupressiforme</i>		1	1			II	R
Germander speedwell	<i>Veronica chamaedrys</i>	1					I	R
Lesser twayblade	<i>Listera ovata</i>	4					I	R
Ash (seedlings)	<i>Fraxinus excelsior</i> (seedlings)		2				I	R
Dandelion	<i>Taraxacum officinale agg.</i>	2					I	R
Traveller's joy	<i>Clematis vitalba</i>				3		I	R
Creeping thistle	<i>Cirsium arvense</i>				1		I	R
Bush vetch	<i>Vicia sepium</i>					1	I	R
Burdock species	<i>Arctium spp.</i>					6	I	R/LF
Bare ground		5	8		7	7		
Species present not in quadrats								
Hawthorn	<i>Crataegus monogyna</i>							O
Common ragwort	<i>Senecio jacobaea</i>							R
Smooth sow-thistle	<i>Sonchus oleraceus</i>							R
Salad burnet	<i>Sanguisorba minor</i>							R
Dog's mercury	<i>Mercurialis perennis</i>							O
Lesser celandine	<i>Ficaria verna</i>							R
Holly	<i>Ilex aquifolium</i>							R
Bluebell	<i>Hyacinthoides non-scripta</i>							R
Bugle	<i>Ajuga reptans</i>							R
Wood anemone	<i>Anemone nemorosa</i>							R
Sanicle	<i>Sanicula europaea</i>							R
Wood sage	<i>Teucrium scorodonia</i>							R
Pedunculate oak (seedlings)	<i>Quercus robur</i> (seedlings)							O
Male fern	<i>Dryopteris filix-mas</i>							R
Lords-and-ladies	<i>Arum maculatum</i>							R
Meadow buttercup	<i>Rununculus acris</i>							R
Cow parsley	<i>Anthriscus sylvestris</i>							R

Species name	Scientific name	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Constancy	Dafor values
CANOPY								
Ash	<i>Fraxinus excelsior</i>	5						F
Pedunculate oak	<i>Quercus robur</i>	7						A
SUB CANOPY								
Hawthorn	<i>Crataegus monogyna</i>	6						F
GROUND FLORA LAYER								
Wood avens	<i>Geum urbanum</i>	5	5	4	2	3	V	F
Ash (seedlings)	<i>Fraxinus excelsior</i> (seedlings)	5	5	4		4	IV	F
Smooth meadow-grass	<i>Poa pratensis</i>	3	3			2	III	O
Herb-robert	<i>Geranium robertianum</i>			4	2	4	III	O/LF
Dog's mercury	<i>Mercurialis perennis</i>			5	5	4	III	O/LF
Cleavers	<i>Galium aparine</i>			1	2		II	R
Dandelion	<i>Taraxacum officinale agg.</i>	1		1			II	R
Woodruff	<i>Galium odoratum</i>		5		5		II	O/LF
False brome	<i>Brachypodium sylvaticum</i>		3			1	II	R
Pedunculate oak (seedlings)	<i>Quercus robur</i> (seedlings)		3				I	R
Barren strawberry	<i>Potentilla sterilis</i>			4			I	R
Common feather-moss	<i>Kindbergia praelonga</i>				4		I	LF
Rough-stalked feather-moss	<i>Brachythecium rutabulum</i>			4			I	R
Woody nightshade	<i>Solanum dulcamara</i>	1					I	R
Bramble	<i>Rubus fruticosus agg.</i>	4					I	O
Common nettle	<i>Urtica dioica</i>				1		I	R
Male fern	<i>Dryopteris filix-mas</i>				1		I	R
Wild garlic	<i>Allium ursinum</i>					1	I	R
Germander speedwell	<i>Veronica chamaedrys</i>					1	I	R
Bare ground		8	8	5	5	10		
Species present not in quadrats								
Hogweed	<i>Heracleum sphondylium</i>							R
Burdock species	<i>Arctium spp.</i>							O
Broad-leaved dock	<i>Rumex obtusifolius</i>							R
Garlic mustard	<i>Alliaria petiolata</i>							R
Tufted hair-grass	<i>Deschampsia cespitosa</i>							R
Grey willow	<i>Salix cinerea</i>							R
Salad burnet	<i>Sanguisorba minor</i>							R
Perennial rye-grass	<i>Lolium perenne</i>							R
Common dog-violet	<i>Viola riviniana</i>							R
Bugle	<i>Ajuga reptans</i>							R
Wood anemone	<i>Anemone nemorosa</i>							R
Lords-and-ladies	<i>Arum maculatum</i>							R
Wood sage	<i>Teucreum scorodonia</i>							R
Holly	<i>Ilex aquifolium</i>							R
Hart's-tongue	<i>Asplenium scolopendrium</i>							R

Shab Hill Stand 1

Species name	Scientific name	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Constancy	Dafor values
CANOPY								
Beech	<i>Fagus sylvatica</i>	10						D
SUB CANOPY								
Hawthorn	<i>Crataegus monogyna</i>	5						R
Elder	<i>Sambucus nigra</i>	3						R
GROUND FLORA LAYER								
	<i>Mercurialis perennis</i>	4	7	4	5		IV	F
	<i>Brachythecium rutabulum</i>	4	5	2	4		IV	F
	<i>Arum maculatum</i>			2	2	2	III	O
	<i>Kinbergia praelonga</i>				4	2	II	O
	<i>Crataegus monogyna</i> (seedlings)	1			1		II	R
	<i>Urtica dioica</i>	2					I	R
Bare ground		9	8	10	9	10		
Species present not in quadrats								
Holly	<i>Ilex aquifolium</i>							R
Hogweed	<i>Heracleum sphondylium</i>							R
Male fern	<i>Dryopteris filix-mas</i>							R
Bramble	<i>Rubus fruticosus agg.</i>							R

Species name	Scientific name	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Constancy	Dafor values
CANOPY								
Ash	<i>Fraxinus excelsior</i>	5						F
SUB CANOPY								
Grey willow	<i>Salix cinerea subsp. oleifolia</i>	2						O
Hawthorn	<i>Crataegus monogyna</i>	6						F
Sycamore	<i>Acer pseudoplatanus</i>	2						O
Elder	<i>Sambucus nigra</i>	2						O
GROUND FLORA LAYER								
Common nettle	<i>Urtica dioica</i>	5	1	8		5	IV	F/LA
Common feather-moss	<i>Kindbergia praelonga</i>	8	1	4	4		IV	F
Enchanter's nightshade	<i>Circaea lutetiana</i>	3		1	1		III	O
Dog' mercury	<i>Mercurialis perennis</i>	7	10	4			III	F/LD
Cleavers	<i>Galium aparine</i>	1		1	2		III	O
Ground-ivy	<i>Glechoma hederacea</i>	4			4		II	O
Rough-stalked feather-moss	<i>Brachythecium rutabulum</i>			5	2		II	O/LF
Wood avens	<i>Geum urbanum</i>	2				5	II	O/LF
Ash (seedlings)	<i>Fraxinus excelsior</i> (seedlings)	1					I	R
Smooth meadow-grass	<i>Poa pratensis</i>					5	I	R/LF
Wood forget-me-not	<i>Myosotis sylvatica</i>					4	I	R
broad-leaved dock	<i>Rumex obtusifolius</i>					3	I	R
Dandelion	<i>Taraxacum officinale agg.</i>					1	I	R
Bare ground		5	4	6	9	3		
Species present not in quadrats								
Ground elder	<i>Aegopodium podagraria</i>							R/LF
Creeping thistle	<i>Cirsium arvense</i>							R
Perennial rye-grass	<i>Lolium perenne</i>							R
Goat willow	<i>Salix caprea</i>							O
Male fern	<i>Dryopteris filix-mas</i>							R
Spear thistle	<i>Cirsium vulgare</i>							R
Dwarf cherry	<i>Prunus cerasus</i>							R
Bugle	<i>Ajuga reptans</i>							R
Creeping buttercup	<i>Ranunculus repens</i>							R

Species name	Scientific name	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Constancy	Dafor values
CANOPY								
Ash	<i>Fraxinus excelsior</i>	6						F
Beech	<i>Fagus sylvatica</i>	4						O
SUB CANOPY								
Hawthorn	<i>Crataegus monogyna</i>	2						R
Sycamore	<i>Acer pseudoplatanus</i>	4						O
Elder	<i>Sambucus nigra</i>	1						R
GROUND FLORA LAYER								
Bramble	<i>Rubus fruticosus agg.</i>	7	8	8	8	8	V	F/LA
Cleavers	<i>Galium aparine</i>	1		2	2	1	IV	F
Common feather-moss	<i>Kinbergia praelonga</i>	6	5		4	4	IV	F
Sycamore (seedlings)	<i>Acer pseudoplatanus</i> (seedlings)	4	1	4		2	IV	F
Male Fern	<i>Dryopteris filix-mas</i>	2			4	4	III	F
Dandelion	<i>Taraxacum officinale agg.</i>	3		4		3	III	F
Spear thistle	<i>Cirsium vulgare</i>	1	1	2			III	O
Curled dock	<i>Rumex crispus</i>	4		4			II	O
Rough-stalked feather-moss	<i>Brachythecium rutabulum</i>			2	4	4	III	F
Creeping buttercup	<i>Ranunculus repens</i>	4	1				II	O
Smooth meadow-grass	<i>Poa pratensis</i>	5	4				II	O
Perforate St.John's wort	<i>Hypericum perforatum</i>	2	2				II	O
Enchanter's nightshade	<i>Circaea lutetiana</i>	1	1				II	O
Wood forget-me-not	<i>Myosotis sylvatica</i>	3					I	O
Broad-leaved willowherb	<i>Epilobium montanum</i>	3					I	O
Violet species	<i>Viola spp.</i>	3					I	O
Wood sedge	<i>Carex sylvatica</i>		8				I	R/LF
Traveller's joy	<i>Clematis vitalba</i>		5				I	R/LF
Germander speedwell	<i>Veronica chamaedrys</i>		2				I	R
Cock's-foot	<i>Dactylis glomerata</i>			2			I	R
Bare ground		5	3	4	5	5		
Species present not in quadrats								
Ground-ivy	<i>Glechoma hederacea</i>							R/LF
Dog's Mercury	<i>Mercurialis perennis</i>							R/LF
Common nettle	<i>Urtica dioica</i>							R/LF
False oat-grass	<i>Arrhenatherum elatius</i>							R
Crosswort	<i>Cruciata lavipes</i>							R
Hogweed	<i>Heracleum sphondylium</i>							R
Broad-leaved dock	<i>Rumex obtusifolius</i>							O
Perennial rye-grass	<i>Lolium perenne</i>							R
Burdock species	<i>Arctium spp.</i>							R
Common twayblade	<i>Listera ovata</i>							R
Primrose	<i>Primula vulgaris</i>							R
Bluebell	<i>Hyacinthoides non-scripta</i>							R
Imperforate St.John's wort	<i>Hypericum maculatum</i>							R
Ivy-leaved speedwell	<i>Veronica serpyllifolia</i>							R
Bugle	<i>Ajuga reptans</i>							R
Black bryony	<i>Dioscorea communis</i>							R
Compact rush	<i>Juncus conglomeratus</i>							R
Rowan	<i>Sorbus aucuparia</i>							R
Creeping thistle	<i>Cirsium arvense</i>							R
Annual meadow-grass	<i>Poa annua</i>							R
Soft rush	<i>Juncus effusus</i>							R
Great willowherb	<i>Epilobium hirsutum</i>							O
Hard rush	<i>Juncus inflexus</i>							R

Species name	Scientific name	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Constancy	Dafor values
CANOPY								
Ash	<i>Fraxinus excelsior</i>	4						O
Beech	<i>Fagus sylvatica</i>	6						F
SUB CANOPY								
Hazel	<i>Corylus avellana</i>	5						F
Dogwood	<i>Cornus sanguinea</i>	2						R
GROUND FLORA LAYER								
Wood avens	<i>Geum urbanum</i>	5	2	4		6	IV	F
Ash (seedlings)	<i>Fraxinus excelsior</i> (seedlings)	4		3	4	4	IV	F
Field maple (seedlings)	<i>Acer campestre</i> (seedlings)	1	2		1	1	IV	O
Hogweed	<i>Heracleum sphondylium</i>	3	1		2	4	IV	F
Beech (seedlings)	<i>Fagus sylvatica</i> (seedlings)	2			1	1	III	O
Cleavers	<i>Galium aparine</i>			3	2		II	R
Hazel (seedlings)	<i>Corylus avellana</i> (seedlings)	1			2		II	R
Smooth meadow-grass	<i>Poa pratensis</i>	3	2				II	R
Pedunculate oak (seedlings)	<i>Quercus robur</i> (seedlings)	1					II	R
Rough-stalked feather -moss	<i>Brachythecium rutabulum</i>			3	2		II	R
Cleavers	<i>Galium aparine</i>			3	2		II	R
Common nettle	<i>Urtica dioica</i>	1					I	R
Dandelion	<i>Taraxacum officinale</i> agg.	1					I	R
Wood speedwell	<i>Veronica montana</i>	1					I	R
Cock's-foot	<i>Dactylis glomerata</i>	1					I	R
Sycamore (seedlings)	<i>Acer pseudoplatanus</i> (seedlings)		1				I	R
Common feather-moss	<i>Kindbergia praelonga</i>		2				I	R
Hawthorn (seedlings)	<i>Crataegus monogyna</i> (seedlings)		1				I	R
Germander speedwell	<i>Veronica chamaedrys</i>		1				I	R
Herb-robert	<i>Geranium robertianum</i>			2			I	R
Ground-ivy	<i>Glechoma hederacea</i>					1	I	R
Bare ground		9	10	10	9	8		
Species present not in quadrats								
Wild garlic	<i>Allium ursinum</i>							R
Bramble	<i>Rubus fruticosus</i> agg.							O
Curled dock	<i>Rumex crispus</i>							R
False brome	<i>Brachypodium sylvaticum</i>							R
Common chickweed	<i>Stellaria media</i>							R
Wood melick	<i>Melica uniflora</i>							R
Whitebeam	<i>Sorbus aria</i>							R
Lesser celandine	<i>Ficaria verna</i>							R
Pignut	<i>Conopodium majus</i>							R
Common bent	<i>Agrostis capillaris</i>							R
Wood anemone	<i>Anemone nemorosa</i>							R
Enchanter's nightshade	<i>Circaea lutetiana</i>							R
Creeping buttercup	<i>Ranunculus repens</i>							R
Yorkshire fog	<i>Holcus lanatus</i>							O
Bugle	<i>Ajuga reptans</i>							R
Sweet vernal-grass	<i>Anthoxanthum odoratum</i>							R
Wild cherry	<i>Prunus avium</i>							R
Ivy-leaved speedwell	<i>Veronica serpyllifolia</i>							R
Barren strawberry	<i>Potentilla sterilis</i>							O
Holly	<i>Ilex aquifolium</i>							O
Wayfaring tree	<i>Virburnum lantana</i>							R
Imperforate St. John's wort	<i>Hypericum maculatum</i>							R
Red fescue	<i>Festuca rubra</i>							R
Cowslip	<i>Primula veris</i>							R
Elder	<i>Sambucus nigra</i>							R
Yellow archangel	<i>Lamiastrum galeobdolon</i>							R
Black horehound	<i>Ballota nigra</i>							R
Blackthorn	<i>Prunus spinosa</i>							R
Broad-leaved dock	<i>Rumex obtusifolius</i>							R
Sanicle	<i>Sanicula europaea</i>							R

Crickley Hill Stand 2

Species name	Scientific name	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Constancy	Dafor values
CANOPY								
Ash	<i>Fraxinus excelsior</i>	7						A
Beech	<i>Fagus sylvatica</i>	4						O
SUB CANOPY								
Hazel	<i>Corylus avellana</i>	3						R
Hawthorn	<i>Crataegus monogyna</i>	4						O
GROUND FLORA LAYER								
Wild garlic	<i>Allium ursinum</i>		7	8	9	9	IV	F/LD
Ash (seedlings)	<i>Fraxinus excelsior</i> (seedlings)	1		4		3	III	F
Common feather-moss	<i>Kindbergia praelonga</i>	3		4	2		III	F
Dog's mercury	<i>Mercurialis perennis</i>	8		5			II	O/LA
Bluebell	<i>Hyacinthoides non-scripta</i>	1	1				II	R
Dogwood (seedlings)	<i>Cornus sanguinea</i> (seedlings)			1			II	R
Wood anemone	<i>Anemone nemorosa</i>				2	4	II	O
Rough-stalked feather-moss	<i>Brachythecium rutabulum</i>	1	2				II	O
Lords-and-ladies	<i>Arum maculatum</i>	1					I	R
Elder (seedlings)	<i>Sambucus nigra</i> (seedlings)		1				I	R
Hazel (seedlings)	<i>Corylus avellana</i> (seedlings)	1					I	R
Herb-paris	<i>Paris quadrifolia</i>				1		I	R
Common smoothcap	<i>Atrichum undulatum</i>					1	I	R
Bare ground		6	5	5	4	4		
Species present not in quadrats								
Pedunculate oak	<i>Quercus robur</i>							R
Traveller's joy	<i>Clematis vitalba</i>							R
Bramble	<i>Rubus fruticosus</i> agg.							O
Domestic apple	<i>Malus domestica</i>							R
Black horehound	<i>Ballotta nigra</i>							R

Species name	Scientific name	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Constancy	Dafor values
CANOPY								
Sycamore	<i>Acer pseudoplatanus</i>	4						O
Ash	<i>Fraxinus excelsior</i>	5						F
SUB CANOPY								
Hawthorn	<i>Crataegus monogyna</i>	4						O
GROUND FLORA LAYER								
Sycamore (seedlings)	<i>Acer pseudoplatanus</i> (seedlings)	2		3	4	1	IV	F
Germander speedwell	<i>Veronica chamaedrys</i>	4	4		4		III	O
Common nettle	<i>Urtica dioica</i>			4	4	2	III	O
Wood speedwell	<i>Veronica montana</i>	6	8		4		III	O
Dandelion	<i>Taraxacum officinale</i> agg.	1	2		2		III	O
Hogweed	<i>Heracleum sphondylium</i>	2		3			II	O
Yorkshire fog	<i>Holcus lanatus</i>	6			3		II	R/LF
Hawthorn (seedlings)	<i>Crataegus monogyna</i> (seedlings)	1		1			II	R
Cock's-foot	<i>Dactylis glomerata</i>	4			2		II	O
Perennial rye-grass	<i>Lolium perenne</i>				7	1	II	R/LF
Smooth meadow-grass	<i>Poa pratensis</i>			4	4		II	R
Three-nerved sandwort	<i>Moehringia trinerva</i>					2	I	R
False oat-grass	<i>Arrhenatherum elatius</i>		4				I	R
Bush Vetch	<i>Vicia sepium</i>		2				I	R
Creeping bent	<i>Agrostis stolonifera</i>		5				I	R
Bramble	<i>Rubus fruticosus</i> agg.		2				I	R
Rough-stalked feather-moss	<i>Brachythecium rutabulum</i>			3			I	R
Bare ground		7	4	9	5	10		
Species present not in quadrats								
Beech	<i>Fagus sylvatica</i>							R
Creeping cinquefoil	<i>Potentilla reptans</i>							R
Cleavers	<i>Galium aparine</i>							R
Common sorrel	<i>Rumex acetosa</i>							R
Crosswort	<i>Cruciata laevipes</i>							R

Species name	Scientific name	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Constancy	Dafor values
CANOPY								
Ash	<i>Fraxinus excelsior</i>	5						F
Sycamore	<i>Acer pseudoplatanus</i>	4						O
Wych-elm	<i>Ulmus glabra</i>	2						R
SUB CANOPY								
Elder	<i>Sambucus nigra</i>	4						O
Hazel	<i>Corylus avellana</i>	1						R
GROUND FLORA LAYER								
Ivy	<i>Hedera helix</i>	7	7	7	5	6	V	A
Ash (seedlings)	<i>Fraxinus excelsior</i> (seedlings)	4		6	7	7	IV	F
Field maple (seedlings)	<i>Acer campestre</i> (seedlings)	1		1		1	III	O
Sycamore (seedlings)	<i>Acer pseudoplatanus</i> (seedlings)		2	4		3	III	O
Hawthorn (seedlings)	<i>Crataegus monogyna</i> (seedlings)				1	1	II	R
Herb-robert	<i>Geranium robertianum</i>	2	1				II	R
Cleavers	<i>Galium aparine</i>	1					I	R
Male fern	<i>Dryopteris filix-mas</i>		3				I	R
Hart's tongue	<i>Asplenium scolopendrium</i>		3				I	R
Wood avens	<i>Geum urbanum</i>				1		I	R
Hazel (seedlings)	<i>Corylus avellana</i> (seedlings)		2				I	R
Common twayblade	<i>Listera ovata</i>		2				I	R
Lords-and-ladies	<i>Arum maculatum</i>		2				I	R
Beech (seedlings)	<i>Fagus sylvatica</i> (seedlings)			4			I	R
Wych-elm (seedlings)	<i>Ulmus glabra</i> (seedlings)				1		I	R
Bare ground		7	6	6	7	7		
Species present not in quadrats								
Red campion	<i>Silene dioica</i>							O
Dog's Mercury	<i>Mercurialis perennis</i>							O
False oat-grass	<i>Arrhenatherum elatius</i>							O
Common ragwort	<i>Senecio jacobaea</i>							R
Traveller's-joy	<i>Clematis vitalba</i>							R
Pignut	<i>Conopodium majus</i>							R
Cock's-foot	<i>Dactylis glomerata</i>							O
Bracken	<i>Pteridium aquilinum</i>							R
Creeping thistle	<i>Cirsium arvense</i>							R
Bush Vetch	<i>Vicia sepium</i>							R
Mugwort	<i>Artemisia vulgaris</i>							R
Wood sage	<i>Teucreum scorodonia</i>							R
Common mallow	<i>Malva sylvestris</i>							R
Comfrey species	<i>Symphytum spp.</i>							R
Colt's-foot	<i>Tussilago farfara</i>							R
Bramble	<i>Rubus fruticosus agg.</i>							O
Ox-eye daisy	<i>Leucanthemum vulgare</i>							R
Burdock species	<i>Arctium spp.</i>							R
Ribwort plantain	<i>Plantago lanceolata</i>							R
Curled dock	<i>Rumex crispus</i>							R
Creeping cinquefoil	<i>Potentilla reptans</i>							R
Broad-leaved dock	<i>Rumex obtusifolius</i>							R
Hogweed	<i>Heracleum sphondylium</i>							R
False brome	<i>Brachypodium sylvaticum</i>							R
Cow parsley	<i>Anthriscus sylvestris</i>							R
Meadow buttercup	<i>Ranunculus acris</i>							R
Garlic mustard	<i>Alliaria petiolata</i>							R
Dandelion	<i>Taraxacum officinale agg.</i>							R
Smooth sow-thistle	<i>Sonchus oleraceus</i>							R
Common nettle	<i>Urtica dioica</i>							R
Wych-elm	<i>Ulmus glabra</i>							R
Hawthorn	<i>Crataegus monogyna</i>							R
Beech	<i>Fagus sylvatica</i>							R
Leyland cypress	<i>Cupressocyparis x leylandii</i>							R
Wild cherry	<i>Prunus avium</i>							R

Birdlip Quarry

Species name	Scientific name	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Constancy	Dafor values
CANOPY								
Beech	<i>Fagus sylvatica</i>	9						D
SUB CANOPY								
Elder	<i>Sambucus nigra</i>	1						R
Holly	<i>Ilex aquifolium</i>	2						R
Rhododendron	<i>Rhododendron ponticum</i>	2						R
GROUND FLORA LAYER								
Ivy	<i>Hedera helix</i>	4	4		4	5	IV	A
Bluebell	<i>Hyacinthoides non-scripta</i>	6		2	4	6	IV	A
Hypnum moss	<i>Hypnum cupressiforme</i>		3	4	5		III	F
Lords-and-ladies	<i>Arum maculatum</i>			2	3	2	III	O
Redcurrant	<i>Ribes rubrum</i>	1		1			III	O
Ash (seedlings)	<i>Fraxinus excelsior</i> (seedlings)		4		1	3	III	F
Wood avens	<i>Geum urbanum</i>	1					I	R
Dandelion	<i>Taraxacum officinale</i> agg.	3					I	R
Wall lettuce	<i>Mycelis muralis</i>	1					I	R
Hogweed	<i>Heracleum sphondylium</i>	1					I	R
Elder (seedlings)	<i>Sambucus nigra</i> (seedlings)			2			I	R
Common chickweed	<i>Stellaria media</i>	1					I	R
Common nettle	<i>Urtica dioica</i>		3				I	R
Violet species	<i>Viola</i> sp.					2	I	R
Bare ground		8	10	9	8	7		
Species present not in quadrats								
Smooth meadow-grass	<i>Poa pratensis</i>							R
Herb-robert	<i>Geranium robertianum</i>							R

Species name	Scientific name	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Constancy	Dafor values
CANOPY								
Sycamore	<i>Acer pseudoplatanus</i>	5						F
Wych-elm	<i>Ulmus glabra</i>	4						O
Ash	<i>Fraxinus excelsior</i>	7						A
Field Maple	<i>Acer campestre</i>	1						R
SUB CANOPY								
Hazel	<i>Corylus avellana</i>	4						O
GROUND FLORA LAYER								
Dog's mercury	<i>Mercurialis perennis</i>							LF
Creeping cinquefoil	<i>Potentilla reptans</i>							R
Round-leaved crane's-bill	<i>Geranium rotundifolium</i>							R
Cleavers	<i>Galium aparine</i>							O
Herb-robert	<i>Geranium robertianum</i>							R
Wood forget-me-not	<i>Myosotis sylvatica</i>							R
Common nettle	<i>Urtica dioica</i>							O
Wood sedge	<i>Carex sylvatica</i>							R
Carnation sedge	<i>Carex panicea</i>							R
Creeping bent	<i>Agrostis stolonifera</i>							R
Marsh thistle	<i>Cirsium palustre</i>							R
Bramble	<i>Rubus fruticosus</i> agg.							R
Garlic mustard	<i>Alliaria petiolata</i>							R
Male fern	<i>Dryopteris filix-mas</i>							O
Daisy	<i>Bellis perennis</i>							R
Dandelion	<i>Taraxacum officinale</i>							R
Ivy	<i>Hedera helix</i>							O
Elder (seedlings)	<i>Sambucus nigra</i> (seedlings)							R
Crosswort	<i>Cruciata laevipes</i>							R
Wood melick	<i>Melica uniflora</i>							R
Common figwort	<i>Scrophularia nodosa</i>							R
Ground-ivy	<i>Glechoma hederacea</i>							R
Yorkshire fog	<i>Holcus lanatus</i>							R
Creeping buttercup	<i>Ranunculus repens</i>							R
Hogweed	<i>Heracleum sphondylium</i>							R
Broad-leaved dock	<i>Rumex obtusifolius</i>							R
Lords-and-ladies	<i>Arum maculatum</i>							O
Traveller's joy	<i>Clematis vitalba</i>							R
Hart's tongue	<i>Asplenium scolopendrium</i>							R
Black bryony	<i>Dioscorea communis</i>							R
Hazel (seedlings)	<i>Corylus avellana</i> (seedlings)							R
Sanicle	<i>Sanicula europaea</i>							R
False brome	<i>Brachypodium sylvaticum</i>							O
Yellow archangel	<i>Lamium galeobdolon</i>							R
Rough-stalked feather-moss	<i>Brachythecium rutabulum</i>							F
Bugle	<i>Ajuga reptans</i>							R
Tufted hair-grass	<i>Deschampsia cespitosa</i>							R
Common feather-moss	<i>Kindbergia praelonga</i>							F
Violet species	<i>Viola</i> spp.							O
Common dog-violet	<i>Viola riviniana</i>							R
Imperforate St.John's wort	<i>Hypericum maculatum</i>							R
Bluebell	<i>Hyacinthoides non-scripta</i>							R
Common spotted-orchid	<i>Dactylorhiza fuchsii</i>							R
Species present not in canopy quadrat								
Larch	<i>Larix decidua</i>							R
Beech	<i>Fagus sylvatica</i>							R
Hawthorn	<i>Crataegus monogyna</i>							R

Species name	Scientific name	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Constancy	Dafor values
CANOPY								
Ash	<i>Fraxinus excelsior</i>	5						O
Field Maple	<i>Acer campestre</i>	3						R
Beech	<i>Fagus sylvatica</i>	1						R
Rowan	<i>Sorbus aucuparia</i>	1						R
GROUND FLORA LAYER								
False oat-grass	<i>Arrhenatherum elatius</i>	7	7		7	4	IV	A
Broad-leaved dock	<i>Rumex obtusifolius</i>	4	2			4	III	F
Ground ivy	<i>Glechoma hederacea</i>	3	4			1	III	F
Creeping thistle	<i>Cirsium arvense</i>	2		4		2	III	O
Creeping thistle	<i>Cirsium vulgare</i>	2				1	II	O
Cleavers	<i>Galium aparine</i>	6				6	II	O-LF
Wood forget-me-not	<i>Myosotis sylvatica</i>	3			2		II	O
Herb-robert	<i>Geranium robertianum</i>	4			1		II	O
Hogweed	<i>Heracleum sphondylium</i>		1	2			II	O
Creeping cinquefoil	<i>Potentilla reptans</i>		1		1		II	O
Dandelion	<i>Taraxacum officinale agg.</i>		1		2		II	O
Colt's-foot	<i>Tussilago farfara</i>			6	6		II	O-LF
Cowslip	<i>Primula veris</i>			1	2		II	O
Red fescue	<i>Festuca rubra</i>			4	5		II	O-LF
Common nettle	<i>Urtica dioica</i>				3	4	II	O
Creeping buttercup	<i>Ranunculus repens</i>	2					I	R
Horsetail species	<i>Equisetum spp.</i>		2				I	R
Male fern	<i>Dryopteris filix-mas</i>		6				I	R
Hawthorn (seedlings)	<i>Crataegus monogyna</i> (seedlings)		1				I	R
Burdock species	<i>Arctium spp.</i>	4					I	R
Wood avens	<i>Geum urbanum</i>		1				I	R
Cock's-foot	<i>Dactylis glomerata</i>			6			I	R
Sweet vernal-grass	<i>Anthoxanthum odoratum</i>			1			I	R
Common sorrel	<i>Rumex acetosa</i>			1			I	R
Wood speedwell	<i>Veronica montana</i>			2			I	R
Common mouse-ear	<i>Cerastium fontanum</i>			3			I	R
Creeping bent	<i>Agrostis stolonifera</i>			4			I	R
Hedge woundwort	<i>Stachys sylvatica</i>				1		I	R
Ash (seedlings)	<i>Fraxinus excelsior</i> (seedlings)				2		I	R
White dead-nettle	<i>Lamium album</i>				2		I	R
Traveller's-joy	<i>Clematis vitalba</i>				2		I	R
Cow parsley	<i>Anthriscus sylvestris</i>					6	I	R

Species name	Scientific name	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Constancy	Dafor values
CANOPY								
Field maple	<i>Acer campestre</i>	5						O
Sycamore	<i>Acer pseudoplatanus</i>	8						A
SUB CANOPY								
Field maple	<i>Acer campestre</i>	1						R
GROUND FLORA LAYER								
Cleavers	<i>Galium aparine</i>	4	4	4	4	6	V	F
Ivy	<i>Hedera helix</i>	9	9	8	7	7	V	F-LD
Herb-robert	<i>Geranium robertianum</i>	3	3	4	6		IV	F
Common feather-moss	<i>Kindbergia praelonga</i>			2	3	2	III	O
Bramble	<i>Rubus fruticosus agg.</i>		2		4		II	O
Ash (seedlings)	<i>Fraxinus excelsior</i> (seedlings)		2	4			II	O
Ground-ivy	<i>Glechoma hederacea</i>				3	4	II	O
Winter heliotrope	<i>Petasites fragrans</i>				1	2	II	O
Rough-stalked feather-moss	<i>Brachythecium rutabulum</i>	4	4				II	O
Field maple (seedlings)	<i>Acer campestre</i> (seedlings)	1		2			II	R
Hawthorn (seedlings)	<i>Crataegus monogyna</i> (seedlings)	2					I	R
Dogwood (seedlings)	<i>Cornus sanguinea</i> (seedlings)		1				I	R
Stinking iris	<i>Iris foetidissima</i>			5			I	R
Common nettle	<i>Urtica dioica</i>				3		I	R
Gooseberry	<i>Ribes uva-crispa</i>		3				I	R
Sycamore (seedlings)	<i>Acer pseudoplatanus</i> (seedlings)					2	I	R
Bare ground		4	4	4	7	5		
Species present not in quadrats								
Wych-elm	<i>Ulmus glabra</i>	R						
Hawthorn	<i>Crataegus monogyna</i>	R						
Beech	<i>Fagus sylvatica</i>	R						
Dogwood	<i>Cornus sanguinea</i>	R						
Dog rose	<i>Rosa canina</i>	R						
Elder	<i>Sambucus nigra</i>	R						
False Brome	<i>Brachypodium sylvaticum</i>	R						
Cow parsley	<i>Anthriscus sylvestris</i>	R						
Broad-leaved speedwell	<i>Rumex obtusifolius</i>	R						
Hogweed	<i>Heracleum sphondylium</i>	R						
Spear thistle	<i>Cirsium vulgare</i>	R						
Wood avens	<i>Geum urbanum</i>	R						
White dead-nettle	<i>Lamium album</i>	R						
Germander speedwell	<i>Veronica chamaedrys</i>	R						
Bush Vetch	<i>Vicia sepium</i>	R						
Holly	<i>Ilex aquifolium</i> (seedlings)	R						
Male fern	<i>Dropteris filix-mas</i>	R						
Garlic mustard	<i>Alliaria petiolata</i>	R						
Hart's tongue	<i>Asplenium scolopendrium</i>	R						
Common field-speedwell	<i>Veronica persica</i>	R						
Lords-and-ladies	<i>Arum maculatum</i>	R						
Violet species	<i>Viola spp.</i>	R						
Wild garlic	<i>Allium ursinum</i>	R						
Cowslip	<i>Primula veris</i>	R						

Species name	Scientific name	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Constancy	Dafor values
CANOPY								
Ash	<i>Fraxinus excelsior</i>	5						F
Sycamore	<i>Acer pseudoplatanus</i>	2						R
Field maple	<i>Acer campestre</i>	1						R
SUB CANOPY								
Hawthorn	<i>Crataegus monogyna</i>	2						R
Field Maple	<i>Acer campestre</i>	2						R
GROUND FLORA LAYER								
Gooseberry	<i>Ribes uva-crispa</i>							R
Garlic Mustard	<i>Alliaria petiolata</i>							O-LF
Dandelion	<i>Taraxacum officinale agg.</i>							R
Wood avens	<i>Geum urbanum</i>							R
Cleavers	<i>Galium aparine</i>							O-LF
Cow parsley	<i>Anthriscus sylvestris</i>							LF
Common feather-moss	<i>Kindbergia praelonga</i>							O-LF
Barren strawberry	<i>Potentilla sterilis</i>							R
False brome	<i>Brachypodium sylvaticum</i>							O-LF
Dog's mercury	<i>Mercurialis perennis</i>							R
Dandelion	<i>Taraxacum officinale agg.</i>							LF
Broad-leaved dock	<i>Rumex obtusifolius</i>							R
Herb-robert	<i>Geranium robertianum</i>							R
Black bryony	<i>Dioscorea communis</i>							R
Perennial rye-grass	<i>Lolium perenne</i>							R
Germander speedwell	<i>Veronica chamaedrys</i>							R
Ash (seedlings)	<i>Fraxinus excelsior</i> (seedlings)							R
Hawthorn (seedlings)	<i>Crataegus monogyna</i> (seedlings)							R
Cock's-foot	<i>Dactylis glomerata</i>							R
Greater plantain	<i>Plantago major</i>							R
Bush vetch	<i>Vicia sepium</i>							R
Common nettle	<i>Urtica dioica</i>							F
Ground-ivy	<i>Glechoma hederacea</i>							R
Bramble	<i>Rubus fruticosus agg.</i>							O-LF
Wild garlic	<i>Allium ursinum</i>							R
Lords-and-ladies	<i>Arum maculatum</i>							R
Hart's tongue	<i>Asplenium scolopendrium</i>							R
Fat hen	<i>Chenopodium album</i>							R
Common chickweed	<i>Stellaria media</i>							R
Wood avens	<i>Myosotis sylvestris</i>							R
White dead-nettle	<i>Lamium album</i>							R
Hogweed	<i>Heracleum sphondylium</i>							R
Creeping bent	<i>Agrostis stolonifera</i>							R
Winter heliotrope	<i>Petasites fragrans</i>							R-LF
Field maple	<i>Acer campestre</i> (seedlings)							R
Pendulous sedge	<i>Carex pendula</i>							R
Traveller's joy	<i>Clematis vitalba</i>							R
Burdock species	<i>Arcium spp.</i>							R
Violet species	<i>Viola spp.</i>							R
Spear thistle	<i>Cirsium vulgare</i>							R
Creeping buttercup	<i>Ranunculus repens</i>							R
Elder (seedlings)	<i>Sambucus nigra</i> (seedlings)							R
Sycamore (seedlings)	<i>Acer pseudoplatanus</i> (seedlings)							R
Prickly sow-thistle	<i>Sonchus asper</i>							R
Bristly ox-tongue	<i>Helminthotheca echioides</i>							R
Stinking iris	<i>Iris foetidissima</i>							R
Barren brome	<i>Anisantha sterilis</i>							R
Marsh woundwort	<i>Stachys sylvatica</i>							R
Comfrey species	<i>Symphytum spp.</i>							R
Meadow buttercup	<i>Ranunculus acris</i>							R
Yorkshire fog	<i>Holcus lanatus</i>							R
Black medick	<i>Medicago lupulina</i>							R
Imperforate St. John's wort	<i>Hypericum maculatum</i>							R
Ox-eye daisy	<i>Leucanthemum vulgare</i>							R
Lesser stitchwort	<i>Stellaria graminea</i>							R
Ivy	<i>Hedera helix</i>							R
Species present not in canopy quadrat								
Hazel	<i>Corylus avellana</i>							O
English elm	<i>Ulmus procera</i>							R
Elder	<i>Sambucus nigra</i>							O

Species name	Scientific name	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Constancy	Dafor values
CANOPY								
Beech	<i>Fagus sylvatica</i>	7						A
SUB CANOPY								
Holly	<i>Ilex aquifolium</i>	4						O
Hazel	<i>Corylus avellana</i>	5						F
GROUND FLORA LAYER								
Wood anemone	<i>Anemone nemorosa</i>	3	3	4	2	1	V	F
Dog's mercury	<i>Mercurialis perennis</i>	5	4	5	4	8	V	F-LA
Rough-stalked feather-moss	<i>Brachythecium rutabulum</i>	2	2	3	1	1	V	F
Lords-and-ladies	<i>Arum maculatum</i>	1	2	1	2	2	V	F
Ash (seedlings)	<i>Fraxinus excelsior</i> (seedlings)	1	1	2	1	1	V	F
Bluebell	<i>Hyacinthoides non-scripta</i>	1	4	2			III	O
Holly	<i>Ilex aquifolium</i> (seedlings)			4	4		II	O
Ivy	<i>Hedera helix</i>	1		1			II	O
Hazel (seedlings)	<i>Corylus avellana</i> (seedlings)	1				2	II	O
Hawthorn	<i>Crataegus monogyna</i> (seedlings)	1					I	R
Field maple (seedlings)	<i>Acer campestre</i> (seedlings)		1				I	R
Violet species	<i>Viola riviniana</i>	1					I	R
Beech	<i>Fagus sylvatica</i> (seedlings)				1		I	R
Traveller's-joy	<i>Clematis vitalba</i>					1	I	R
Common feather-moss	<i>Kinbergia praelonga</i>					1	I	R
Bare ground		8	9	8	9	5		
Species present not in quadrats								
Ground-ivy	<i>Glechoma hederacea</i>							R
Bramble	<i>Rubus fruticosus</i> agg.							O
Ribwort plantain	<i>Plantago lanceolata</i>							R
Germander speedwell	<i>Veronica chamaedrys</i>							R
Crosswort	<i>Cruciata laevipes</i>							R
Cleavers	<i>Galium aparine</i>							R
Creeping thistle	<i>Cirsium arvense</i>							R
Wood forget-me-not	<i>Myosotis sylvatica</i>							R
Cowslip	<i>Galium verum</i>							R
Barren strawberry	<i>Potentilla sterilis</i>							R
Common ragwort	<i>Senecio jacobaea</i>							R
Smooth sow-thistle	<i>Sonchus oleraceus</i>							R
Salad burnet	<i>Sanguisorba minor</i>							R
Lesser celandine	<i>Ficaria verna</i>							R
Thyme-leaved speedwell	<i>Veronica serpyllifolia</i>							R
Holly (seedlings)	<i>Ilex aquifolium</i> (seedlings)							R
Bugle	<i>Ajuga reptans</i>							R
Dandelion	<i>Taraxacum officinale</i> agg.							R
Sanicle	<i>Sanicula europaea</i>							R
Burdock species	<i>Arctium</i> spp.							R
Wood sage	<i>Teucreum scorodonia</i>							R
Pedunculate oak	<i>Quercus robur</i> (seedlings)							R
Male fern	<i>Dryopteris filix-mas</i>							R
Common nettle	<i>Urtica dioica</i>							R
Wood avens	<i>Geum urbanum</i>							R
Herb-robert	<i>Geranium robertianum</i>							R
Yellow archangel	<i>Lamiasastrum galeobdolon</i>							R
Wood sedge	<i>Carex sylvatica</i>							R
Annual meadow-grass	<i>Poa annua</i>							R
Elder	<i>Sambucus nigra</i>							R
Garlic mustard	<i>Alliaria petiolata</i>							R

Species name	Scientific name	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Constancy	Dafor values
CANOPY								
Ash	<i>Fraxinus excelsior</i>	5						O
Beech	<i>Fagus sylvatica</i>	2						R
SUB CANOPY								
Hawthorn	<i>Crataegus monogyna</i>	2						R
Hazel	<i>Corylus avellana</i>	3						R
GROUND FLORA LAYER								
Bluebell	<i>Hyacinthoides non-scripta</i>	4	4	4	7	5	V	F
Dog's mercury	<i>Mercurialis perennis</i>	9	8	7	4	7	V	F-LD
Wood avens	<i>Geum urbanum</i>		4	4	3		III	O
Rough-stalked feather-moss	<i>Brachythecium rutabulum</i>	1		3		2	III	O
Ash (seedlings)	<i>Fraxinus excelsior</i> (seedlings)	1			1		II	R
Enchanter's nightshade	<i>Circaea lutetiana</i>			2	2		II	R
Common feather-moss	<i>Kindbergia praelonga</i>				4	4	II	O
Male fern	<i>Dryopteris filix-mas</i>			4	4		II	O
Wild garlic	<i>Allium ursinum</i>	5					I	R
Woodruff	<i>Galium odoratum</i>		5				I	R
Bramble	<i>Rubus fruticosus</i> agg.		3				I	R
Tufted hair-grass	<i>Deschampsia cespitosa</i>			3			I	R
Wood sedge	<i>Carex sylvatica</i>			3			I	R
Fox-tailed feachter-moss	<i>Thamnobryum alopecurum</i>				2		I	R
Bare ground		4	4	5	4	7		
Species present not in quadrats								
False brome	<i>Brachypodium sylvaticum</i>							R
Dandelion	<i>Taraxacum officinale</i> agg.							O
Bugle	<i>Ajuga reptans</i>							R
Holly	<i>Ilex aquifolium</i>							O
Lords-and-ladies	<i>Arum maculatum</i>							R
Traveller's-joy	<i>Clematis vitalba</i>							R
Hogweed	<i>Heracleum sphondylium</i>							O
Hazel (seedlings)	<i>Corylus avellana</i> (seedlings)							R
Herb-robert	<i>Geranium robertianum</i>							R
Hawthorn	<i>Crataegus monogyna</i> (seedlings)							C
Violet species	<i>Viola</i> spp.							R
Ivy	<i>Hedera helix</i>							F
Swedish whitebeam	<i>Sorbus x intermedia</i>							R
Common lime	<i>Tilia x europaea</i>							R
Field maple	<i>Acer campestre</i>							R
Wild cherry	<i>Prunus avium</i>							R
Silver birch	<i>Betula pendula</i>							R

Species name	Scientific name	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Constancy	Dafor values
CANOPY								
Ash	<i>Fraxinus excelsior</i>	5						O
Sycamore	<i>Acer pseudoplatanus</i>	4						O
Beech	<i>Fagus sylvatica</i>	3						R
Silver birch	<i>Betula pendula</i>	1						R
SUB CANOPY								
Hazel	<i>Corylus avellana</i>	4						O
GROUND FLORA LAYER								
Wild garlic	<i>Allium ursinum</i>	5		5	9	8	IV	F-LD
Ash (seedlings)	<i>Fraxinus excelsior</i> (seedlings)	4	1	4		1	IV	F
Bluebell	<i>Hyacinthoides non-scripta</i>		4	4	4	5	IV	F
Common feather-moss	<i>Kindbergia praelonga</i>		4	7	5	4	IV	F-LA
Yellow archangel	<i>Lamium galeobdolon</i>		2	1	1		III	O
Dog's mercury	<i>Mercurialis perennis</i>	7	5	3			III	O-LA
Black horehound	<i>Ballota nigra</i>		1	1		1	III	O
Bramble	<i>Rubus fruticosus</i> agg.		1			1	II	O
Ground-ivy	<i>Glechoma hederacea</i>		2			2	II	O
Wood anemone	<i>Anemone nemorosa</i>	1				1	II	R
Woodruff	<i>Galium odoratum</i>	4	4				II	R
Tufted hair-grass	<i>Deschampsia cespitosa</i>		5			2	II	R
False brome	<i>Brachypodium sylvaticum</i>		3				I	R
Rough-stalked feather-moss	<i>Brachythecium rutabulum</i>	4					I	R
Dandelion	<i>Taraxacum officinale</i> agg.					1	I	R
Hawthorn (seedlings)	<i>Crataegus monogyna</i> (seedling)			1			I	R
Sanicle	<i>Sanicula europaea</i>		2				I	R
Bugle	<i>Ajuga reptans</i>		4				I	R
Wood melick	<i>Melica uniflora</i>		3				I	R
Wood avens	<i>Geum urbanum</i>		3				I	R
Common striated feather-moss	<i>Eurhynchium striatum</i>		5				I	R
Wood sedge	<i>Carex sylvatica</i>		2				I	R
Germander speedwell	<i>Veronica chamaedrys</i>		1				I	R
Violet species	<i>Viola</i> spp.			1			I	R
Beech (seedlings)	<i>Fagus sylvatica</i> (seedlings)			1			I	R
Pignut	<i>Conopodium majus</i>					1	I	R
Bare ground		4						
Species present not in quadrats								
Lords-and-ladies	<i>Arum maculatum</i>							R
Cowslip	<i>Primula veris</i>							R
Wood spurge	<i>Euphorbia amygdoloides</i>							R
Wood avens	<i>Geum urbanum</i>							R

Species name	Scientific name	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Constancy	Dafor values
CANOPY								
Ash	<i>Fraxinus excelsior</i>	5						O
Horse chestnut	<i>Aesculus hippocastanum</i>	2						R
Common whitebeam	<i>Sorbus aria</i>	1						R
Sessile oak	<i>Quercus petraea</i>	1						R
SUB CANOPY								
Horse chestnut	<i>Aesculus hippocastanum</i>	1						R
Hazel	<i>Corylus avellana</i>	4						R
GROUND FLORA LAYER								
Wild garlic	<i>Allium ursinum</i>	6	5	6	7	9	V	F-LD
Ash (seedlings)	<i>Fraxinus excelsior</i> (seedlings)	6	8	4	5	1	V	F-LA
Bluebell	<i>Hyacinthoides non-scripta</i>	4	2	3	4	3	V	F
Rough-stalked feather-moss	<i>Brachythecium rutabulum</i>	7	5	7	6	3	V	F-LA
Wood anemone	<i>Anemone nemorosa</i>	2	4	4	3		IV	F
Bramble	<i>Rubus fruticosus</i> agg.	1	2	2	2		IV	F
Dog's mercury	<i>Mercurialis perennis</i>	5	5	7			III	O-LA
Soft shield-fern	<i>Polystichum setiferum</i>		3	4		2	III	F
Fox-tailed feather-moss	<i>Thamnobryum alopecurum</i>			4	4		II	O
Common feather-moss	<i>Kindbergia praelonga</i>			4		3	II	O
Yellow archangel	<i>Lamiastrum galeobdolon</i>	1		1			II	R
Male fern	<i>Dryopteris filix-mas</i>	4			4		II	O
Hazel (seedlings)	<i>Corylus avellana</i> (seedlings)			2	1		II	R
Hawthorn (seedlings)	<i>Crataegus monogyna</i> (seedlings)	1		1			II	R
False brome	<i>Brachypodium sylvaticum</i>		1				I	R
Bush vetch	<i>Vicia sepium</i>		1				I	R
Sycamore (seedlings)	<i>Acer pseudoplatanus</i> (seedlings)			1			I	R
Bare ground		4	4	4	3			
Species present not in quadrats								
Silver birch	<i>Betula pendula</i>							R
Lords-and-ladies	<i>Arum maculatum</i>							R
Dogwood (seedlings)	<i>Cornus sanguineus</i> (seedlings)							R
Field maple	<i>Acer campestre</i>							R
Herb-paris	<i>Paris quadrifolia</i>							R
Tufted hair-grass	<i>Deschampsia cespitosa</i>							R
Common spotted-orchid	<i>Dactylorhiza fuchsii</i>							R
Wood melick	<i>Melica uniflora</i>							R
Woodruff	<i>Galium odoratum</i>							R
Wood sedge	<i>Carex sylvatica</i>							R-LA
Common striated feather-moss	<i>Eurhynchium striatum</i>							R
Dandelion	<i>Taraxacum officinale</i> agg.							R
Wood spurge	<i>Euphorbia amygdoloides</i>							R
Wood sorrel	<i>Oxalis acetosa</i>							R
Ground-ivy	<i>Glechoma hederacea</i>							R
Pignut	<i>Conopodium majus</i>							R
Yellow archangle	<i>Lamiastrum galeobdolon</i>							R
Wood avens	<i>Geum urbanum</i>							R
Beech	<i>Fagus sylvatica</i>							R

Species name	Scientific name	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Constancy	Dafor values
CANOPY								
Ash	<i>Fraxinus excelsior</i>	4						O
Leyland cypress	<i>Cupressocyparis leylandii</i>	2						R
Wych-elm	<i>Ulmus glabra</i>	2						R
Sessile oak	<i>Quercus petraea</i>	2						R
SUB CANOPY								
Hazel	<i>Corylus avellana</i>	4						O
GROUND FLORA LAYER								
Wild garlic	<i>Allium ursinum</i>	9	7	9	6	6	V	F-LD
Common feather-moss	<i>Kindbergia praelonga</i>	7	7	7	8	7	V	F-LA
Wood anemone	<i>Anemone nemorosa</i>	4	4	1	4	4	V	F
Male fern	<i>Dryopteris filix-mas</i>		4	1	4	3	IV	F
Dog's Mercury	<i>Mercurialis perennis</i>	5	5		8	7	IV	F-LA
Bluebell	<i>Hyacinthoides non-scripta</i>	4	5		4	5	IV	F
Yellow archangel	<i>Lamium galeobdolon</i>	2	4		4	4	IV	F
Ground-ivy	<i>Glechoma hederacea</i>	4			4	4	III	F
Wood sorrel	<i>Oxalis acetosella</i>				2	3	II	O
Rough-stalked feather-moss	<i>Brachythecium rutabulum</i>	6	7				II	O-LA
Ash (seedlings)	<i>Fraxinus excelsior</i> (seedlings)	3	4				II	O
Sort shield-fern	<i>Polystichum setiferum</i>		2			2	II	O
Lords-and-ladies	<i>Arum maculatum</i>	1					I	R
Hazel (seedlings)	<i>Corylus avellana</i> (seedlings)		1				I	R
Bramble	<i>Rubus fruticosus</i> agg.					1	I	R
Wood spurge	<i>Euphorbia amygdaloides</i>					1	I	R
Pignut	<i>Conopodium majus</i>					1	I	R
Common smoothcap	<i>Atrichum undulatum</i>					1	I	R
Bare ground				4				
Species present not in quadrats								
Silver birch	<i>Betula pendula</i>							R
Hawthorn (seedlings)	<i>Crataegus monogyna</i> (seedlings)							R
Common dog-violet	<i>Viola riviniana</i>							R
False brome	<i>Brachypodium sylvaticum</i>							R
Bush vetch	<i>Vicia sepium</i>							R
Herb-paris	<i>Paris quadrifolia</i>							R
Tufted hair-grass	<i>Deschampsia cespitosa</i>							R
Bugle	<i>Ajuga reptans</i>							R
Lesser celandine	<i>Ficaria verna</i>							R
Creeping bent	<i>Agrostis stolonifera</i>							R
Beech (seedlings)	<i>Fagus sylvatica</i> (seedlings)							R
Cleavers	<i>Galium aparine</i>							R
Wod sedge	<i>Carex sylvatica</i>							R-LA
Sycamore	<i>Acer pseudoplatanus</i>							R

Appendix D MAVIS Communities

Fly Up Project (GR112176)

NVC: W6b 23.41

NVC: W8d 21.92

NVC: W6 21.91

NVC: W8e 21.45

NVC: W13 20.17

NVC: W12a 20.10

NVC: W6e 18.60

NVC: W21a 18.20

NVC: W13a 17.57

NVC: W6d 17.53

Highways England woodland north of A417 (GR323231)

NVC: W8d 37.94

NVC: W12 34.73

NVC: W12a 34.20

NVC: W12b 33.84

NVC: W10c 33.83

NVC: W8e 31.45

NVC: W10 30.99

NVC: W8 29.70

NVC: W12c 28.35

NVC: W21c 28.20

Barrow Wake woodland Stands 1 (GR354675)

NVC: W8d 37.10

NVC: W13 34.87

NVC: W13b 34.78

NVC: W12c 33.81

NVC: W12 33.68

NVC: W8e 29.93

NVC: W8 29.67

NVC: W8a 29.24

NVC: W12b 28.96

NVC: W12a 27.85

Barrow Wake woodland Stand 2 (GR354675)

NVC: W6 42.08

NVC: W6a 41.63

NVC: W21b 40.11

NVC: W25a 37.81

NVC: W8f 37.09

NVC: W6d 36.97

NVC: W21 35.96

NVC: W24 35.87

NVC: W25 35.48

NVC: W24a 35.03

Barrow Wake woodland Stand 3 (GR354675)

NVC: W24 35.99

NVC: W24a 33.69

NVC: W8d 31.93

NVC: W6a 31.48

NVC: W8a 31.23

NVC: W12 31.02

NVC: W8e 30.71

NVC: W6d 30.35

NVC: W25a 29.99

NVC: W21c 29.73

Barrow Wake woodland Stand 4 (GR354675)

NVC: W24 35.87

NVC: W8d 35.44

NVC: W12 34.93

NVC: W12a 34.65

NVC: W24a 33.11

NVC: W8e 32.97

NVC: W12b 32.51

NVC: W24b 31.67

NVC: W6 30.33

NVC: W8 30.16

Crickley Hill woodland Stand 1 (GR32911)

NVC: W12 35.21

NVC: W12b 34.80

NVC: W8d 34.73

NVC: W12c 30.99

NVC: W8e 30.97

NVC: W24 30.20

NVC: W10d 30.06

NVC: W8 29.85

NVC: OV24 29.61

NVC: MG1b 29.32

Crickley Hill woodland Stand 2 (GR32911)

NVC: W12c 37.68

NVC: W8f 35.28

NVC: W8d 32.99

NVC: W12 32.32

NVC: W13 28.99

NVC: W8e 28.81

NVC: W21b 28.63

NVC: W12a 28.02

NVC: W10b 28.02

NVC: W8b 27.98

Woodland north east of Grove Farm (GR320093)

NVC: W8d 26.79

NVC: W8f 26.32

NVC: W8e 25.17

NVC: W12a 23.19

NVC: W8c 23.09

NVC: W8 21.08

NVC: W8g 21.00

NVC: W8b 20.78

NVC: W10e 19.89

NVC: W12 18.12

Highways England woodland south of A417 (GR326339, GR325786, GR19275, GR21956, GR21586)

NVC: W6 36.17

NVC: W21 35.05

NVC: W22 34.19

NVC: W21b 34.06

NVC: W25a 33.79

NVC: W21a 33.65

NVC: W8f 33.41

NVC: W6a 33.33

NVC: W21c 31.82

NVC: W22b 31.78

Land north west of Grove Farm (GR320093)

NVC: MG1b 49.14

NVC: W24 48.02

NVC: OV24b 44.94

NVC: OV24 44.62

NVC: MG1a 43.08

NVC: MG1 42.64

NVC: W24a 41.60

NVC: MG1c 41.28

NVC: OV24a 40.68

NVC: OV26d 39.96

Woodland at Cukoopen Barn Farm (GR136598)

NVC: W8d 45.53

NVC: W12 42.01

NVC: W12a 40.68

NVC: W8a 38.61

NVC: W8 37.11

NVC: W8e 36.89

NVC: W12c 36.89

NVC: W8f 36.23

NVC: W8b 34.18

NVC: W10 32.79

Woodland north of Dog Lane (GR95689)

NVC: W21b 35.58

NVC: W21c 31.75

NVC: W12b 31.67

NVC: W21a 31.48

NVC: W8d 31.08

NVC: W21 30.58

NVC: W8e 30.48

NVC: W12 30.47

NVC: W6a 29.38

NVC: W25a 29.23

Woodland north of Dog Lane (GR95689)

NVC: W8d 26.37

NVC: W12a 22.34

NVC: W8e 21.52

NVC: W8f 20.18

NVC: W12 19.21

NVC: W12c 18.45

NVC: W8b 18.32

NVC: W8c 17.61

NVC: W21a 17.44

NVC: W8g 16.57

Woodland at Birdlip Quarry (GR353298)

NVC: W8d 31.91

NVC: W10c 31.32

NVC: W21b 29.24

NVC: W21 28.23

NVC: W10b 28.17

NVC: W12a 27.30

NVC: W12 26.74

NVC: W10 26.22

NVC: W10a 26.07

NVC: W10d 25.82

Woodland at Birdlip Radio Station (GR252644)

NVC: MG1b 39.78

NVC: OV24 39.07

NVC: OV24b 37.36

NVC: W24 36.21
NVC: MG1a 35.86
NVC: W24b 34.28
NVC: MG1c 33.57
NVC: MG1 33.22
NVC: OV24a 33.01
NVC: SD18b 32.56

Woodland at Rushwood Kennels (GR138283)

NVC: W6 35.78
NVC: W6d 34.64
NVC: W8e 32.15
NVC: W6a 32.14
NVC: W8 30.57
NVC: W24a 29.72
NVC: W12c 29.57
NVC: W8b 29.23
NVC: W8d 29.07
NVC: W24 29.03

Shab Hill woodland Stand 1 (GR97761)

NVC: W13 39.74
NVC: W13b 35.79
NVC: W12c 34.36
NVC: W21b 32.18
NVC: W12 31.11
NVC: W8d 28.74
NVC: W8f 28.09
NVC: W12a 26.85
NVC: W21 26.14
NVC: W12b 24.21

Shab Hill woodland Stand 2 (GR97761)

NVC: OV24a 45.40
NVC: W6a 43.07
NVC: OV27b 42.48
NVC: OV24 42.00
NVC: W24a 40.64
NVC: W24 40.00
NVC: OV24b 38.50
NVC: SD18b 38.42
NVC: W6 37.96
NVC: W21b 37.88

Shab Hill woodland Stand 3 (GR97761)

NVC: W6 49.04
NVC: W6a 48.47
NVC: W6d 48.17
NVC: W21b 42.80
NVC: W25a 38.46
NVC: W21 37.89
NVC: W8e 37.14
NVC: SD18b 36.99
NVC: W12c 36.94
NVC: W6e 36.91

Woodland at The Scrubbs (GR32911)

NVC: W8d 40.36
NVC: W12 34.54
NVC: W8 32.30
NVC: W12a 31.84
NVC: W8e 31.29
NVC: W10b 30.77
NVC: W12c 30.62

NVC: W8b 30.50

NVC: W8f 30.26

NVC: W12b 28.92

Ullen Wood (GR346313)

NVC: W8d 45.39

NVC: W8b 45.08

NVC: W12 44.93

NVC: W12a 42.70

NVC: W10b 42.31

NVC: W10 41.27

NVC: W8e 40.31

NVC: W8a 40.11

NVC: W8 39.64

NVC: W10a 38.40

Ullen Wood (GR352384)

NVC: W8f 37.81

NVC: W8d 34.32

NVC: W8b 34.04

NVC: W12 33.74

NVC: W8e 33.24

NVC: W12a 33.17

NVC: W10b 31.75

NVC: W8 30.22

NVC: W8a 30.17

NVC: W10 27.93

Ullen Wood (GR354154)

NVC: W8b 44.89

NVC: W8f 42.61

NVC: W8d 39.30

NVC: W10b 37.77

NVC: W8e 37.36

NVC: W8a 36.97

NVC: W8 36.79

NVC: W10 34.76

NVC: W12 32.36

NVC: W12a 32.12