Norfolk County Council

Norwich Western Link Road

National Vegetation Classification Survey Report

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WSP

62-64 Hills Road
Cambridge
CB2 1LA

Phone: +44 1223 558 050

Fax: +44 1223 558 051

WSP.com

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1 Introduction

1.1 Project background

1.1.1. The Norwich Western Link Road (NWL) is a highway scheme linking the A1270 Broadland Northway from its junction with the A1067 Fakenham Road to the A47 trunk road near Honingham. The NWL, hereafter referred to as the Scheme, will comprise the following listed below:

- Dualling the A1067 Fakenham Road westwards from its existing junction with the A1270 to a new roundabout located approximately 400m to the north-west;
- Construction of a new roundabout; and
- Constructing a dual carriageway link from the new roundabout to a new junction with the A47 near Honingham.

1.1.2. As part of a separate planned scheme, National Highways proposes to realign and dual the A47 from the existing roundabout at Easton to join the existing dual carriageway section at North Tuddenham. If that scheme proceeds, it is expected that National Highways will construct the Honingham junction and the Norwich Western Link will connect to the north-eastern side of that junction.

1.1.3. The Scheme will cross the River Wensum and its flood plain by means of a viaduct. In addition, six other structures are proposed to cross minor roads and to provide habitat connectivity. The Scheme will include ancillary works such as provision for non-motorised users, necessary realignment of the local road network, including the stopping up of some minor roads, and the provision of environmental mitigation measures.

1.2 Ecological background

1.2.1. A desk study (WSP UK Ltd., 2018a) and Phase 1 Habitat Survey (WSP UK Ltd., 2018b) of the Scheme was commissioned in 2018, to inform route options. The initial Phase 1 Habitat Survey was undertaken in 2018 when multiple route options were being considered. The survey area considered at this time therefore covered a wider extent than that relevant to the Scheme following the Preferred Route announcement. The Phase 1 Habitat Survey identified broad habitat areas and types.

1.2.2. The 2018 Desk Study was updated in March 2020 to include recent data relevant to the Preferred Route and so the 2018 report is not referenced further.

1.3 Brief and objectives

1.3.1. WSP UK Ltd was commissioned by Norfolk County Council to complete a National Vegetation Classification (NVC) survey, with the following objectives:

- Undertake an NVC survey, using the methods outlined in Rodwell, 2006, describing the semi-natural vegetation communities within the Scheme boundary as shown in separate document Appendix A. Semi-natural habitats included woodland, scrub, grassland, rush pasture, swamp and arable field margins;

- Assess the value of the habitats surveyed using published lists of species used as indicators for Natural Environment & Rural Communities (NERC) Act 2006, Section 41: Habitats of Principal Importance (HPI) in England; and
- Assess the vegetation communities against criteria used to define habitats included within the Norfolk Biodiversity Action Plan (BAP).

1.4 Relevant legislation and policy

1.4.1. The NVC survey has been compiled with reference to the following relevant nature conservation legislation, planning policy and the UK Biodiversity Framework from which the protection of sites, habitats and species is derived in England. Relevant legislation and policy include:

- The Natural Environment and Rural Communities (NERC) Act 2006;
- The UK Post-2010 Biodiversity Framework (2011-2020) (JNCC and DEFRA, 2012);
- Biodiversity 2020: A strategy for England's wildlife and ecosystem services (DEFRA, 2011);
- UK Biodiversity Action Plan (UKBAP) - The UK BAP has now been replaced by the UK Post-2010 Biodiversity Framework, however, it contains useful information on how to characterise important species assemblages and habitats which is still relevant.
- Norfolk Biodiversity Action Plan (Norfolk Biodiversity Partnership); and
- Norwich Local Plan (adopted 2014).

2 Methods

2.1 Overview

2.1.1. Areas of homogeneous vegetation, (homogeneous vegetation exhibits a uniform character across a specified area. It is generally comprised of a suite of species which occur regularly across the area, with very few patches possessing atypical vegetation structure or species), within the Scheme boundary were subject to NVC surveys in April and June 2021 by an experienced botanical specialist from WSP who has over 16 years of relevant experience. The methodology employed for the NVC surveys followed the methods outlined in Rodwell, 2006. Woodland habitats were surveyed between the 6th and 7th April with grassland and arable field margins being surveyed between the 15th and 17th June. Grassland sites were visited during the peak flowering season for most species, whilst a spring visit was made to woodland sites to record vernal (species which flower in spring) ground flora, which would normally have finished flowering and/or be obscured by sprawling ground layer species later in the year.

2.1.2. Homogeneous stands of vegetation were first identified using visual inspection and surveyor experience, gained within similar habitats. Sample quadrats were then located in these homogeneous areas. This inevitably involved some surveyor bias but avoided problems of the arrangement of random samples and incorporating obvious vegetation boundaries (ecotones) or unrepresentative floristic features. The field data was analysed, and the vegetation present was assigned, where possible, to an NVC vegetation community published in British Plant Communities (Rodwell, 1991a, 1991b, 1992, 1995 and 2000).

2.1.3. Where the vegetation was in narrow strips, heavily disturbed or modified, and could not be characterised as a homogeneous stand, quadrat sampling would not have been appropriate. Vegetation within these areas was assessed as a ‘whole stand’, and a qualitative assessment was made of the vegetation communities present.

2.1.4. Where mosaics, (mosaics comprise vegetation of more than one community type, which occur repeatedly across the sampling area at a very small scale, forming a patchwork of community types which are too small to individually map) of vegetation occurred and mapping of different small-scale communities was not practical, quadrats were placed within each type of homogeneous vegetation present. The extent of different communities found to be present was then estimated as a percentage of the total sampling area which contained the mosaic.

2.2 Quadrat size

2.2.1. Throughout the NVC surveys, the size of the sampling quadrats was selected appropriately to match the scale of the vegetation being sampled. The following quadrat dimensions were employed:

- 2 metre (m) x 2m for short, herbaceous vegetation/grassland communities; and
- 4m x 4m for taller herbaceous vegetation/grassland communities;

2.2.2. Woodland stands were sampled using nested quadrats, whereby the canopy, understorey and ground layers were sampled using different sized quadrats, with the smaller quadrats contained within the larger quadrats. The following quadrat dimensions were employed:

- 10m x 10m for woodland canopy and understorey. Normally high canopy is sampled using 50m x 50m quadrats but woodland within the Scheme boundary was mostly too small to accommodate 50m x 50m quadrats;
- 4m x 4m for tall woodland ground layer vegetation; and
- 2m x 2m for short woodland ground layer vegetation.

2.3 Measuring abundance

2.3.1. Within each quadrat a quantitative measure of the abundance of each species of vascular plant and bryophyte recorded using the Domin scale. Cover was assessed by eye as a vertical projection on to the ground of all live, above-ground parts of the plants within the quadrat. The Domin scale categories are presented below:

- Cover of 91-100% is recorded as Domin 10;
- Cover of 76-90% is recorded as Domin 9;
- Cover of 51-75% is recorded as Domin 8;
- Cover of 34-50% is recorded as Domin 7;
- Cover of 26-33% is recorded as Domin 6;
- Cover of 11-25% is recorded as Domin 5;
- Cover of 4-10% is recorded as Domin 4;
- Cover of <4% with many individuals is recorded as Domin 3;
- Cover of <4% with several individuals is recorded as Domin 2; and
- Cover of <4% with few individuals is recorded as Domin 1.

1.1.1. Frequency was used in conjunction with abundance when determining the community type, either using dichotomous keys within British Plant Communities (Rodwell, 1991a, 1991b, 1992) or the MATCH (v.2.16) computer program (University of Lancaster, 2000). Roman numerals I-V are used to measure frequency with:

- I signifying a species present in 1-20% of samples (scarce);
- II signifying a species present in 21-40% of samples (occasional);
- III signifying a species present in 41-60% of samples (frequent);
- IV signifying a species present in 61-80% of samples (constant); and
- V signifying a species present in 81-100% of samples (constant)

1.1.2. Floristic tables were compiled from the quadrat data, showing the range of Domin scores of each species, and its frequency class within the community. Species occurring at frequencies of IV and V are described as constants within the community, while species occurring at other frequencies are described as companions.

2.4 Determining vegetation community type

2.4.1. Shortlists of possible communities were identified using the MATCH (v.2.16) computer program. This program compares the survey data with floristic tables of NVC communities. The shortlists were subsequently refined using NVC keys and the appropriate community descriptions as given in *British Plant Communities* volumes 1, 2, 3, 4 and 5 (Rodwell et al. 1991a, 1991b, 1992, 1995 and 2000).

2.4.2. The coefficient of similarity generated by MATCH (calculated as a percentage) was used to improve the confidence with which data collected could be assigned to a particular NVC community. In line with the published guidance, however, the MATCH assessments were not used in isolation: a combination of the keys and descriptions within the published NVC handbooks, MATCH assessment, and surveyor experience was used to determine community types.

2.4.3. Within this report, MATCH coefficients below 40% were considered to represent particularly poor fits, while those over 50% were considered particularly good fits. Coefficients between 40% and 49% inclusive were not considered to provide a definitive result with confidence, and in these cases, the published keys and descriptions, plus surveyor experience was used as a favoured method. In some cases, even particularly good fits for MATCH assessments were disregarded where the result was not considered to be a true reflection of the existing conditions by the surveyor. This judgement may have been made because of the absence of one or more species at the survey site, which are normally constant species within the community with the highest percentage similarity coefficient, using the MATCH program.

2.5 Habitats of principal importance

2.5.1. To assess whether grassland habitats qualify as HPI (formerly UK BAP habitats) it is necessary to compare species present with published lists of wildflower indicator species.

2.5.2. Lists of indicator species for a range of grasslands and rush-dominated habitats are contained within the Higher Level Stewardship (HLS) Farm Environment Plan (FEP) Manual (NE, 2010). Those lists relevant to the habitats present within the Scheme boundary are shown in Appendix C. The species lists within the FEP, along with tables of condition assessment criteria, are used to evaluate habitat condition as part of an HLS application, relating to the overall environmental interest of a farm site. The species lists can also be used for non-farm sites, to provide standardised lists of indicator species for different HPIs.

2.5.3. The definition of lowland mixed deciduous woodland HPI includes woodland growing on the full range of soil conditions, from very acidic to base-rich, and takes in most semi-natural woodland in lowland England (BRIG (ed. Ant Maddock (2008)). The majority of lowland mixed deciduous woodland HPI belongs to either the W8 *Fraxinus excelsior - Acer campestre - Mercurialis perennis* woodland community or the W10 *Quercus robur - Pteridium aquilinum - Rubus fruticosus* woodland community.

2.6 Norfolk BAP criteria

2.6.1. The lowland meadows and pastures Habitat Action Plan (HAP) (NWT, 2007) within the Norfolk BAP (NBP, 1996) adopts a wide-ranging approach to lowland grasslands treated as lowland meadows. They are taken to include most forms of unimproved neutral grassland across the enclosed lowland landscapes of the UK. In terms of NVC plant communities, the HAP specifically includes:

- MG5 *Cynosurus cristatus - Centaurea nigra* grassland;
- MG8 *Cynosurus cristatus - Caltha palustris* grassland;
- MG11 *Festuca rubra - Agrostis stolonifera - Potentilla anserina* grassland;
- MG12 *Schedonorus arundinaceus* grassland; and
- MG13 *Agrostis stolonifera - Alopecurus geniculatus* grassland.

2.6.2. Representative species lists for each of these NVC communities are included within the HAP and are reproduced in Appendix D of this report. The plan does not cover improved or semi-improved grassland, or re-created grassland that is species poor.

2.6.3. The lowland mixed deciduous woodland HAP (NCC, 2006) within the Norfolk BAP adopts a similar definition of lowland mixed deciduous woodland as the definition used for HPI, whereby all areas of trees, shrubs and associated ground flora are included, except for wood-pasture and wet woodlands (NCC, 2005), which have their own Norfolk HAPs.

2.7 Taxonomy

2.7.1. Names of vascular plants follow Stace (2019) with bryophytes following Hill et al. (2008).

2.8 Notes and limitations

2.8.1. There were no significant limitations to the survey. The quadrat sampling was undertaken during the optimal time of year for botanical surveys (woodlands surveyed in April and grasslands/arable field margins surveyed in June), when most species present within the survey areas would have been evident. Full access was also available for all land within the Scheme boundary.

2.8.2. As the survey was undertaken over a total of only five days in April/June 2021, it is possible that some species which are more evident at other times of year have been missed. However, the survey was adequate to meet the aims of classifying NVC habitat types and assessing the importance of the habitats.

2.8.3. Hedgerows were present within the Scheme boundary but are reported separately within the hedgerow report (WSP UK Ltd., 2021).

3 Results

3.1 Overview

3.1.1. Floristic tables for all sampling compartments (Tables A: 1-17) are shown in Appendix B. The extent of the Scheme and the extent of the NVC community areas surveyed is shown in separate document Appendix A, with representative photographs of habitats within these areas shown in Appendix C. Indicator species for NVC communities included within the Norfolk lowland meadows and pastures HAP are shown in Appendix D, which also includes tables of lowland meadows and purple moor-grass and rush pastures indicator species taken from FEP. The results of the NVC survey analysis for each area is given below. Where reference is made to NVC community types, these are based on the published keys and community accounts within Rodwell, 1991a, 1991b, 1992, 1995 and 2000.

3.2 Grassland and arable margins

G1 – slopes around attenuation pond, north-east of A1270/A1067 roundabout – MG1e *Arrhenatherum elatius grassland – Centaurea nigra* sub-community

3.2.1. This area was not subject to quadrat sampling as it appeared very similar to area G3, the northern verge along Fakenham Road (A1067). Both areas were dominated by oxeye daisy *Leucanthemum vulgare* with constant sheep's fescue *Festuca ovina*, common knapweed *Centaurea nigra*, yarrow *Achillea millefolium*, ribwort plantain *Plantago lanceolata*, common ragwort *Jacobaea vulgaris* and cock's-foot *Dactylis glomerata*. Although the species composition of the vegetation in G1 was similar to G3, it was sparser, with frequent bare ground (Photograph 1) and several species were present in G1 that were not found in G3 including tufted vetch *Vicia cracca*, hedge bedstraw *Galium album*, common centaury *Centaurium erythraea*, yellow rattle *Rhinanthus minor*, lady's bedstraw *Galium verum* and quaking grass *Briza media.* NVC classification for this area is discussed below with G3.

G2 – field to the north of A1270/A1067 roundabout, north and west of attenuation pond – MG1a Arrhenatherum *elatius* grassland – *Festuca rubra* sub-community

3.2.2. This area was subject to quadrat sampling as it differed from G1 and G3 in possessing a denser, grass-dominated sward, dominated by cock's-foot, with constant soft brome *Bromus hordeaceus* and Yorkshire-fog *Holcus lanatus* (Photograph 2). Quadrat sampling results are shown in Appendix C; Table A-1. Small amounts of false oat-grass *Arrhenatherum elatius* were present in the field but were not recorded within quadrats. This area was less species-rich that areas G1 and G3.

3.2.3. The results of the MATCH analysis gave the highest similarity co-efficient (41.7%) for the MG1a *Arrhenatherum elatius* grassland – *Festuca rubra* sub-community. Although false oat-grass was scarce in the field, the MG1a sub-community does appear to be a suitable classification, with cock's-foot sometimes being more abundant than false oat-grass in MG1. The MG1a sub-community is generally grass-dominated, including constant red fescue, and is typically very species-poor. It often develops on newly-created road verges, where cock's-foot and false oat-grass gradually increase within the sward, due to cessation or reduction of mowing, and start to overcome the previous dominance of red fescue.

G3 – northern verge along Fakenham Road (A1067) – MG1e *Arrhenatherum elatius* grassland – *Centaurea nigra* sub-community and OV24 *Urtica dioica – Galium aparine* community

3.2.4. The western end of this verge consisted of dense stands of common nettle and bracken, extending approximately 100m south-westwards, where sparse grass and oxeye daisy was then observed to dominate. The level ground at the western end becomes more sloping further east, with a shallow dry ditch running along the back of the verge. Vegetation at the western end was not sampled but most of the first 100m shows a strong affinity with the OV24 *Urtica dioica – Galium aparine* community, within which common nettle dominates, with companion species often excluded from the densest areas (Photograph 3). The closely related OV25 *Urtica dioica – Cirsium arvense* community normally has a far patchier coverage of nettles, with a greater number of companion species growing in association with the nettles.

3.2.5. The sparse grassland further east (Photograph 4) was dominated by oxeye daisy with constant sheep's fescue, common knapweed, yarrow, ribwort plantain, common ragwort and cock's-foot. Quadrat sampling results are shown in Appendix B; Table A-2. The results of the MATCH analysis gave the highest similarity co-efficient (43.6%) for the MG1d *Arrhenatherum elatius* grassland – *Pastinaca sativa* sub-community. This was considered to not fit with the vegetation within G3 or G1 as wild parsnip *Pastinaca sativa* was absent.

3.2.6. A more appropriate sub-community designation would be the MG1e *Arrhenatherum elatius* grassland – *Centaurea nigra* sub-community. This sub-community is far richer than other MG1 sub-communities, with common knapweed constant throughout, often accompanied by oxeye daisy and common ragwort, both of which are constant in G3. Oxeye daisy is overwhelmingly dominant in parts of G3. This is not typical for MG1e, but commercial wildflower seed mixes often have a very large proportion of oxeye daisy seed. Therefore if the roadside verge has been recently created it could be as a result of the wildflower and grass seed mix used. Species recorded in G1 also included some species which are preferential in the MG1e sub-community including lady's bedstraw and quaking grass.

3.2.7. The G3 roadside verge and adjacent field at G2 were notable for the presence of frequent hoary mullein *Verbascum pulverulentum,* a nationally scarce (found in less than 100 different 10km x 10km grid-squares in the British Isles since 1987) species, with its main British distribution centred on Norfolk (Photograph 5).

G4 – southern verge along Fakenham Road (A1067) – MG1e *Arrhenatherum elatius* grassland – *Centaurea nigra* sub-community

3.2.8. The verge along the southern side of Fakenham Road was very similar in species composition to the northern verge, with dominant oxeye daisy and frequent common ragwort and common knapweed (Photograph 6).

3.2.9. There was a narrow tarmac track to the south of the verge, along the eastern half of G4, with several mounds of earth running along the boundary of the track and verge. Species typical of waste ground occurred along the mounds including frequent opium poppy *Papaver somniferum* and cotton thistle *Onopordum acanthium,* with a single bee orchid *Ophrys apifera* recorded in the short, patchy grassland (Photograph 7).

3.2.10. Quadrat sampling was not undertaken within G4, due to the strong similarity to the vegetation along the northern verge. G4 was also assigned to the MG1e *Arrhenatherum elatius* grassland – *Centaurea nigra* sub-community.

G5 – field directly to the north of River Wensum – transitional community between MG6a *Lolium perenne – Cynosurus cristatus* grassland – typical sub-community: *Alopecurus geniculatus* variant and MG13 *Agrostis stolonifera – Alopecurus geniculatus* grassland community

3.2.11. This narrow field to the north of the river was bounded by a wet ditch along its northern boundary, with dense emergent vegetation along its entire length including reed canary-grass *Phalaris arundinacea* and reed sweet-grass *Glyceria maxima* with patches of fool's water-cress *Helosciadium nodiflorum,* where gaps appeared between the tall grasses (Photograph 8). Higher up the banks, false oat-grass was dominant and accompanied by common nettle *Urtica dioica*, cleavers *Galium aparine*, creeping thistle *Cirsium arvense* and lesser burdock *Arctium minus.* The reed canary-grass, within the channel appeared yellow and stunted compared to the same species growing on the banks of the ditch and may have been affected by herbicide run-off into the ditch.

3.2.12. The grassland at G5 had been recently mowed (Photograph 9) but most species were still able to be identified. The area was not subject to quadrat sampling but was assessed as a 'whole stand', and a qualitative assessment was made of the vegetation community present. It was considered that a walk-over of the whole field and compilation of a species list for the entire area would allow a more accurate assessment of the vegetation than using localised quadrats, within the closely mown sward.

3.2.13. The sward appeared species-poor and was composed of a mixture of grasses including dominant Yorkshire-fog, rough meadow-grass *Poa trivialis*, soft brome, creeping bent *Agrostis stolonifera,* perennial rye-grass *Lolium perenne,* marsh foxtail *Alopecurus geniculatus,* floating sweet-grass *Glyceria fluitans,* and reed canary-grass. Forbs which are described as a herbaceous (non-woody) flowering plant that is not a graminoid (grass, sedge or rush) included common mouse-ear *Cerastium fontanum*, broad-leaved dock *Rumex obtusifolius*, common nettle, creping buttercup *Ranunculus repens*, celery-leaved buttercup *Ranunculus sceleratus* and brooklime *Veronica beccabunga.*

3.2.14. Some of the species present within G5, such as creeping bent, marsh foxtail and floating sweet-grass indicate regular periods of inundation from the river. These species were present across most of the field, although perennial rye-grass was also present within most of G5. The vegetation within field G5 shows a close affinity to the MG13 *Agrostis stolonifera – Alopecurus geniculatus* grassland community, which often develops around fluctuating open fresh water, but the presence of perennial rye-grass is more typical of drier pasture such as MG6 grassland. The grassland at G5 appears to be transitional between MG6a *Lolium perenne – Cynosurus cristatus* grassland – typical sub-community: *Alopecurus geniculatus* variant and MG13 grassland. The MG6a typical sub-community: *Alopecurus geniculatus* variant contains constant marsh foxtail but does not normally contain floating sweet-grass, which is often frequent in MG13.

3.2.15. The River Wensum forms the southern boundary of field G5. At this point the watercourse was approximately 5m wide and 1.5m deep. The water was reasonably clear and flowed at a moderate pace. Submerged/emergent vegetation observed from the bank and bridge included unbranched bur-reed *Sparganium emersum*, arrowhead *Sagittaria sagittifolia,* water starwort *Callitriche* sp. and yellow water-lily *Nuphar lutea* (Photograph 10).

G6 – field directly to the south of River Wensum – transitional community between MG6a *Lolium perenne – Cynosurus cristatus* grassland – typical sub-community: *Alopecurus geniculatus* variant and MG13 *Agrostis stolonifera – Alopecurus geniculatus* grassland community

3.2.16. The field immediately to the south of the river was also species-poor, with very few forbs present (Photograph 11). The field was dominated by grasses, with dominant floating sweet-grass and frequent creeping bent, marsh foxtail and perennial rye-grass, with small amounts of reed canary-grass and hybrid rye-grass *Lolium* x *boucheanum* (*Lolium perenne* x *Lolium multiflorum*).

3.2.17. This field is also likely to be subject to periodic flooding from the river. As such, it appears to be transitional between MG6a typical sub-community: *Alopecurus geniculatus* variant and MG13 grassland, for the reasons outlined above in paragraph 3.2.14.

3.2.18. The ditch to the south of G6 (Photograph 12) comprised a 6m strip of reed canary grass to the north of the ditch, with the channel being choked with greater pond sedge *Carex riparia* and scrub including grey willow, *Salix cinerea*, osier *Salix viminalis* and hawthorn *Crataegus monogyna*. The greater pond sedge dominated sections of the ditch correspond to the S6 *Carex riparia* swamp community.

G7 – field to south of G6 – MG13 *Agrostis stolonifera – Alopecurus geniculatus* grassland community, MG7 *Lolium perenne* leys and related grasslands and MG9a *Holcus lanatus – Deschampsia cespitosa* grassland – *Poa trivialis* sub-community

3.2.19. Area G7 consisted of a large field containing several distinct homogeneous stands of vegetation (shown on Figure 2), with a smaller section of another dry grass-dominated field located to the west. Within the eastern field there was an area of dry grass-dominated vegetation in the south-east (Photograph 13), with wetter grassland and horsetail to the north-west (Photograph 14) and wet grassland dominated by tufted hair-grass *Deschampsia cespitosa* within the central area (Photograph 15).

3.2.20. Five quadrats were sampled within the south-eastern dry grassland and the wetter north-western area containing constant horsetail. The tufted hair-grass-dominated area was not subject to quadrat sampling but was assessed as a 'whole stand', and a qualitative assessment was made of the vegetation community present.

3.2.21. The results of quadrat sampling within the horsetail-dominated area are shown in Appendix B; Table A-3. Quadrats within this area were dominated by creeping bent and marsh horsetail *Equisetum palustre,* with the only other constant species being floating sweet-grass and reed canary-grass. The results of the MATCH analysis gave the highest similarity co-efficient (51.2%) for MG10a *Holcus lanatus – Juncus effusus* rush-pasture. This is considered an unsuitable description of the vegetation as MG10 typically contains constant Yorkshire-fog *Holcus lanatus* and soft rush *Juncus effusus,* both of which were absent during quadrat sampling. The dominant species throughout this area was creeping bent, which, when associated with constant marsh foxtail, would seem to indicate MG13 grassland. Although marsh foxtail was only present in two quadrats it can sometimes be of very patchy occurrence, thereby not being recorded in all quadrat samples. Other associates of the MG13 community were present, including constant floating sweet-grass and a small amount of rough meadow-grass. Despite only achieving a 48.1% similarity co-efficient, the MG13 community is the closest to the vegetation sampled and could be described as having a weak affinity with MG13 grassland.

3.2.22. The results of quadrat sampling within the dry grass-dominated area are shown in Appendix B; Table A-4. Quadrats within this area were dominated by soft brome, red fescue *Festuca rubra* and perennial rye-grass. The results of the MATCH analysis gave the three highest similarity coefficients (45.1% to 46.1%) for sub-communities of the MG7 *Lolium perenne* leys and related grasslands. These types of grasslands are characteristically dominated by perennial rye-grass when first sown but as they age, the cover of perennial rye-grass tends to decline and is partially replaced by other perennial grass species such as Yorkshire-fog, cock's-foot and red fescue. In this case the annual species soft brome has achieved dominance within the sward.

3.2.24. The central area of G7 was dominated by tussocks of tufted hair-grass, with shorter grass surrounding including Yorkshire-fog, rough meadow-grass and creeping bent forming a mosaic of long and short grass. This vegetation is typical of MG9a *Holcus lanatus* – *Deschampsia cespitosa* grassland – *Poa trivialis* sub-community. The community occurs frequently as part of zonations related to differences in moisture status, such as in damp hollows. Grazing may accentuate the mosaic structure as many animals avoid the tough leaves and graze on the more palatable species between the tussocks.

G8 – northern portion of land to south-east of woodland W1 – MG1a *Arrhenatherum elatius* grassland – *Festuca rubra* sub-community and MG9a *Holcus lanatus – Deschampsia cespitosa* grassland – *Poa trivialis* sub-community

3.2.25. To the south-east of woodland W1 there was a small land parcel to the south of G7 that comprised two separate areas, divided by a hedge running longitudinally across the middle. G8, to the north of the hedge consisted of three distinct vegetation types including a bracken-dominated area at the slightly raised western end (Photograph 16). The bracken patch did not totally exclude other plants but seemed to grow within the wider false oat-grass dominated community which occurred along the northern boundary of G8.

3.2.26. False oat-grass was overwhelmingly dominant within the northern grassland strip (Photograph 17) with associated grasses including cock's-foot, red fescue, Yorkshire-fog, reed canary-grass and meadow foxtail *Phleum pratense*. Forbs were scarce within the sward but included ground ivy *Glechoma hederacea*, lesser stitchwort *Stellaria graminea*, wild angelica *Angelica sylvestris*, common nettle, creeping thistle, creeping cinquefoil *Potentilla reptans*, broad-leaved dock, common sorrel *Rumex acetosa*, yarrow and common ragwort. This community showed a strong affinity to the MG1a *Arrhenatherum elatius* grassland – *Festuca rubra* sub-community, which is one of the most species-poor types of MG1, usually dominated by grasses.

3.2.27. Towards the eastern end of G8 the grassland was dominated by large tussocks of tufted hair-grass (Photograph 18). Associates included rough meadow-grass, common ragwort, common sorrel, creeping thistle, creeping buttercup, wild angelica, hogweed, hairy sedge *Carex hirta*, soft rush and cuckooflower *Cardamine pratensis*. The grassland closely matched MG9a *Holcus lanatus – Deschampsia cespitosa* grassland – *Poa trivialis* sub-community, within which tufted hair-grass can be overwhelmingly dominant, contrasting with the MG9b *Arrhenatherum elatius* sub-community which usually contains a wider variety of grasses which can be co-dominant with the tufted hair-grass.

G9 – southern portion of land to south-east of woodland W1 – MG1e *Arrhenatherum elatius* grassland – *Centaurea nigra* sub-community

3.2.28. The land to the south of the hedge consisted of an open area of grassland with no scrub or tall ruderal coverage (Photograph 19). Five quadrats were sampled within the grassland with the results shown in Appendix B; Table A-5. Quadrats within this area were dominated by false oat-grass*,* with grasses present in lesser amounts including meadow fescue *Schedonorus pratensis,* red fescue, cock's-foot and Yorkshire-fog. Constant forbs within the sampling quadrats included common ragwort, common bird's-foot trefoil *Lotus corniculatus,* common knapweed and ribwort plantain.

3.2.29. The sward was more species-rich than the grassland to the north of the hedge. The results of the MATCH analysis gave the two highest similarity coefficients (39.0% to 38.1%) for the MG1e *Arrhenatherum elatius* grassland – *Centaurea nigra* sub-community and the MG1a *Arrhenatherum elatius* grassland – *Festuca rubra* sub-community.

3.2.30. The grassland present at G9 closely resembled the MG1e sub-community which is more species-rich than MG1a and is characterised by frequent common knapweed, often associated with common ragwort, oxeye-daisy, common bird's-foot trefoil, ribwort plantain and musk mallow *Malva moschata,* all of which were present in G9 sampling quadrats.

G10 – grassland located between woodland W2 and W3 – MG1a *Arrhenatherum elatius* grassland – *Festuca rubra* sub-community

3.2.31. The small area of grassland at G10 had been recently mown before the site visit although many of the species could still be identified (Photograph 20). This field was assessed as a 'whole stand', and a qualitative assessment was made of the vegetation community present.

3.2.32. The sward appeared species-poor and was dominated by the grasses, false oat-grass, cock's-foot, Yorkshire-fog, red fescue and rough meadow-grass, with perennial rye-grass, common bent *Agrostis capillaris,* soft brome and squirrel-tail fescue *Vulpia bromoides* present in far smaller amounts. Forbs included creeping cinquefoil*,* chickweed *Stellaria media,* dove's-foot cranesbill *Geranium molle,* dandelion *Taraxacum officinale* agg., germander speedwell *Veronica chamaedrys,* broad-leaved dock, common vetch *Vicia sativa,* common mouse-ear, common nettle, creeping buttercup, bramble, common ragwort, cat's-ear *Hypochaeris radicata,* ribwort plantain, common bird's-foot trefoil, spear thistle *Cirsium vulgare,* hop trefoil *Trifolium campestre*, lesser trefoil *Trifolium dubium,* hairy tare *Ervilia hirsuta,* common stork's-bill *Erodium cicutarium* and perforate St John's-wort *Hypericum perforatum.*

3.2.33. The grassland showed an affinity with the MG1a *Arrhenatherum elatius* grassland – *Festuca rubra* sub-community, one of the most species-poor of the MG1 sub-communities.

G11 – grassland located to the west of woodland W6 – MG7 *Lolium perenne* leys and related grasslands

3.2.34. The grassland at G11 consisted of a small triangular shaped piece of land immediately to the west of a small section of woodland (W6) (Photograph 21). The sward was dominated by abundant perennial rye-grass, with locally abundant Yorkshire-fog, with frequent cock's-foot and soft brome. There was a low diversity of forbs including creeping buttercup, cat's-ear, ribwort plantain, common ragwort, field bindweed, common nettle, white clover, black medick, creeping thistle, curled dock and dwarf mallow *Malva neglecta.*

3.2.35. Quadrat sampling was not undertaken at G11 but the species-poor grassland showed a strong affinity with MG7 *Lolium perenne* leys and related grasslands. This was due to the dominance of perennial rye-grass, but without the presence of crested dog's-tail, which differentiates MG7 from MG6 *Lolium perenne – Cynosurus cristatus* grassland.

G12 – grassland along hedgerow (C11 hedge in previous reports) running north-east from Weston Road – mosaic of MG1b *Arrhenatherum elatius* grassland – *Urtica dioica* sub-community and OV24 *Urtica dioica – Galium aparine* community towards northern end of grassland, with MG1e *Arrhenatherum elatius* grassland – *Centaurea nigra* sub-community along southern section

3.2.36. The grassland at G12 consisted of narrow uncultivated strips along a hedge which runs north-east from Weston Road. This hedge was referred to as Hedge C11 in previous reports. At the northern end the hedge splits into two branches, with one branch continuing north-east, then diverting north-west at a right-angle bend. The other branch diverts south-east before the right-angle bend.

3.2.37. The northern sections were dominated by common nettle with tall grass either side (Photograph 22). The nettle stands were accompanied by cleavers *Galium aparine* which climbed and trailed through the nettles. Either side of the nettle patches false oat-grass was dominant, with Yorkshire-fog and soft brome below and occasional rat's-tail fescue *Vulpia myuros* and common fiddleneck *Amsinckia micrantha,* closest to the crop field margins. The uncultivated strips near the north of G12 were not subject to quadrat sampling but exhibited nettle and grass-dominated vegetation closely resembling the MG1b *Arrhenatherum elatius* grassland – *Urtica dioica* sub-community, which contains constant common nettle amongst the tall grasses. This is another species-poor MG1 sub-community. Where common nettle was present in denser stands, with cleavers, the vegetation closely resembled the OV24 *Urtica dioica – Galium aparine* community, forming a mosaic with MG1b at the northern end of G12.

3.2.38. Further south, the sward was more species-rich than the grassland to the northern end of the hedge, with frequent forbs including oxeye daisy, yarrow, common knapweed, wild carrot *Daucus carota* and common bird's-foot trefoil and was therefore sampled separately (Photo 23). Five quadrats were sampled within the grassland with the results shown in Appendix B; Table A-6. The results of the MATCH analysis gave the five highest similarity coefficients for MG1 sub-communities, with the most suitable match being with the MG1e *Arrhenatherum elatius* grassland – *Centaurea nigra* sub-community, which gave a 39.8% similarity co-efficient, with constant common knapweed and common ragwort within the samples.

G13 – horse paddocks to south of Weston Road – transitional between MG6 *Lolium perenne – Cynosurus cristatus* grassland and MG7 *Lolium perenne* leys and related grasslands

3.2.39. G13 consisted of a series of paddocks separated by wooden post and rail fences (Photograph 24). The separate fields all exhibited a similar grassland community, with constant perennial rye-grass, Yorkshire-fog, common bent, rough meadow grass, smooth meadow grass *Poa pratensis* and widespread common cat's-ear. The sward was generally species-poor but with frequent common cat's-ear flowers present. Sheep's-sorrel *Rumex acetosella* was also present in every quadrat with moderate Domin scores, which indicates locally acidic soil conditions.

3.2.40. Five quadrats were sampled within the grassland with the results shown in Appendix B; Table A-7. The results of the MATCH analysis gave the two highest similarity coefficients for MG6 *Lolium perenne – Cynosurus cristatus* grassland sub-communities. This is not a good match with the community within the horse paddocks as crested dog's-tail *Cynosurus cristatus* was not recorded within G13 but is typically a constant species within MG6. The next highest percentage matches were for MG7 *Lolium perenne* leys and related grassland communities. These types of grasslands are always dominated by perennial rye-grass but do not contain crested dog's-tail whilst the sward is still young. As MG7 swards get older, however, coarser grasses such as cock's-foot, false oat-grass and Yorkshire-fog tend to expand, and crested dog's-tail may eventually invade. In G13, Yorkshire-fog was constant at high Domin scores (6-9), which is at a far higher occurrence than is typical for MG7.

3.2.41. It appears that the grassland at G13 was transitional between MG6 *Lolium perenne – Cynosurus cristatus* grassland and MG7 *Lolium perenne* leys and related grasslands, due to the slight increase in diversity, compared to newly sown MG7 but it did not yet possess the full range of species which are typically constant within MG6.

3.2.42. At the northern end of G13 there was a small paddock with an artificial surface created from shredded car tyres (Photograph 25). This surface was thinly but evenly vegetated with short perennial and annual plants including dominant Canadian fleabane *Erigeron canadensis*, with lesser amounts of willowherbs *Epilobium* spp., common cudweed *Filago germanica*, dandelion and sheep's-sorrel.

G14 – grassland strips at edge of small arable field along eastern edge of Breck Road and to south of hedgerow forming northern field boundary – MG1a *Arrhenatherum elatius* grassland – *Festuca rubra* sub-community

3.2.43. The grassland at G14 comprised wide uncultivated strips of grassland along Breck Road and the northern boundary of the field (Photograph 26). Five quadrats were sampled within this grassland with the results shown in Appendix B; Table A-8. The results of the MATCH analysis gave the four highest similarity coefficients for MG1 *Arrhenatherum elatius* grassland communities, with the highest match (44.1%) being with MG1d *Arrhenatherum elatius* grassland – *Pastinaca sativa* sub-community. MG1d is not considered a suitable match as this sub-community normally contains constant wild parsnip *Pastinaca sativa*, which was absent from the sampling quadrats.

3.2.44. A more suitable sub-community designation would be the MG1a *Festuca rubra* sub-community, which is generally grass-dominated, but in this instance, there was a reasonable species diversity but with sparse coverage of forbs. There were frequent small bare soil patches within the sward which favoured the establishment of several annual grass species, recorded in the quadrats including rat's-tail fescue *Vulpia myuros,* squirrel-tail fescue *Vulpia bromoides,* barren brome *Anisantha sterilis* and soft brome *Bromus hordeaceus.*

G15 – grassland glades to north-east of Foxburrow Meadow, within woodland W8 – weak affinity with OV24 *Urtica dioica – Galium aparine* community

3.2.45. The central glade (Photograph 27) consisted of a grass-dominated central strip including rough meadow-grass which was locally dominant at the northern end of the glade but with perennial rye-grass locally dominant further south, with frequent Yorkshire-fog, rare barren brome, rare remote sedge *Carex remota,* rare cock's-foot and rare soft brome. Forbs present within the central grass strip included frequent rough chervil *Chaerophyllum temulum,* occasional red campion *Silene dioica*, occasional creeping buttercup, occasional common nettle, occasional broad-leaved dock, rare ground-ivy *Glechoma hederacea* and rare hedge woundwort *Stachys sylvatica.*

3.2.46. The western edge of the central glade (Photograph 28) was dominated by bracken *Pteridium aquilinum,* with frequent climbing corydalis *Ceratocapnos claviculata*, frequent cleavers and rare bramble below. The eastern edge of the central glade was dominated by shorter bracken which allowed more plants to grow between the bracken fronds including the species listed above plus red campion, common hemp-nettle *Galeopsis tetrahit*, rough chervil, ground-ivy and hedge woundwort. The bracken along the western edge of the glade was gradually replaced by common-nettle-dominated vegetation towards the south (Photograph 29).

3.2.47. The narrow glade running to the west of the central glade was only approximately 3m wide and consisted of a central rough meadow-grass dominated strip with dominant common nettle along each edge. Other species included frequent broad-leaved dock, frequent pineappleweed *Matricaria discoidea,* rare chickweed *Stellaria media,* rare perennial rye-grass, occasional rough chervil and towards the west, abundant creeping bent *Agrostis stolonifera.*

3.2.48. The wider glade running to the east of the central glade also consisted of a central rough meadow-grass dominated strip with dominant common nettle along each edge and two bare soil tracks either side (Photograph 30). Each side of the bare tracks were lined with common nettle, growing over shorter grass, with a similar species composition to the western glade. The woodland glades consisted of narrow strips of patchy vegetation which are difficult to assign to a particular NVC community although there did seem to be a weak affinity between the rough meadow-grass and common nettle dominated areas and the OV24 *Urtica dioica – Galium aparine* community, which can occur within woodland and where common nettle is constant, accompanied by frequent rough meadow-grass. Cleavers *Galium aparine* was, however, absent from the glades.

G16 – Foxburrow Meadow – M23a *Juncus effusus/acutiflorus – Galium palustre* rush pasture – *Juncus acutiflorus* sub-community, MG1b *Arrhenatherum elatius* grassland – *Urtica dioica* sub-community and S6 *Carex riparia* swamp community

3.2.49. Foxburrow Meadow was divided into two by a stream running north-west to south-east (Photo 31) across it. The stream was densely vegetated with fool's water-cress *Helosciadium nodiflorum,* with banksides covered in abundant bramble, bracken and rough meadow-grass. Frequent herbaceous species included Yorkshire-fog and soft rush *Juncus effusus,* with smaller amounts of red campion, marsh thistle *Cirsium palustre,* cleavers, water mint *Mentha aquatica,* ground-ivy, hard rush *Juncus inflexus* and bittersweet *Solanum dulcamara*.

3.2.50. Quadrat sampling was undertaken to the north-east of the stream within two distinct homogeneous areas. Five quadrats were placed within a type of rush-dominated vegetation (Photograph 32) and three quadrats were placed within grass-dominated vegetation (Photograph 33).

3.2.51. The results of the five quadrats sampled within the rush-dominated areas are shown in Appendix B; Table A-9. The results of the MATCH analysis gave the three highest similarity coefficients for M23 *Juncus effusus/acutiflorus – Galium palustre* rush pasture, with the highest match (36.8%) being with the M23a *Juncus acutiflorus* sub-community. The vegetation within the sampling quadrats was dominated by sharp-flowered rush, accompanied by constant Yorkshire-fog, rough meadow-grass, creeping buttercup, lesser stitchwort, ground-ivy, common ragwort, oval sedge *Carex leporina,* marsh thistle and greater bird's-foot trefoil *Lotus pedunculatus.* Although the percentage match is low, the sampled quadrats are characteristic of M23a vegetation, where the overwhelmingly dominant rush species is sharp-flowered rush, rather than soft rush, which would be indicative of the M23b sub-community.

3.2.52. The results of the three quadrats sampled within the grass-dominated areas are shown in Appendix B; Table A-10. The results of the MATCH analysis gave the four highest similarity coefficients for MG1 *Arrhenatherum elatius* grassland communities, with the highest match (43.0%) being with the MG1c *Filipendula ulmaria* sub-community. Within the MG1c sub-community the vegetation is slightly richer than in the MG1a and MG1b sub-communities and usually occurs on slightly wetter ground, often beside ditches. The MG1c sub-community, however, has meadowsweet *Filipendula ulmaria* as a constant species but it was not found to occur within the sampling quadrats in G16. Therefore, a more suitable community match would be with the MG1b *Urtica dioica* sub-community as the vegetation appears slightly richer than within the MG1a *Festuca rubra* sub-community.

3.2.53. It was not possible to accurately map the extent of each of these homogeneous vegetation types described above, as they both occurred in an irregular repeating pattern across G16 forming a complex mosaic. Instead a percentage estimate for relative coverage of each community is given, with the M23a *Juncus effusus/acutiflorus – Galium palustre* rush pasture – *Juncus acutiflorus* sub-community covering approximately 65% of the field to the north-east of the stream. The MG1b *Arrhenatherum elatius* grassland – *Urtica dioica* sub-community covered approximately 35% of the field to the north-east of the stream.

3.2.54. The land to the south-west of the stream contained a similar mosaic of rush-dominated vegetation and drier grass-dominated areas but with an additional vegetation type, centred on TG 10489 13359, where an approximately 8m diameter area was dominated by greater pond-sedge *Carex riparia* (Photograph 34). The stand was very species-poor and almost pure near the centre but with more species diversity towards its margins which contained frequent soft rush, water mint and great willowherb *Epilobium hirsutum,* with rare hard rush *Juncus inflexus,* ragged-robin *Lychnis flos-cuculi,* southern marsh-orchid *Dactylorhiza praetermissa* and yellow pimpernel *Lysimachia nemorum.*

3.2.55. The greater pond-sedge dominated area is similar to the S6 *Carex riparia* swamp community, which is generally dominated by greater pond-sedge, with no other constant species within the community. This area covers approximately 10% of the land to the south-west of the stream, with approximately 60% covered by M23a *Juncus effusus/acutiflorus – Galium palustre* rush pasture – *Juncus acutiflorus* sub-community and approximately 20% covered by M1b *Arrhenatherum elatius* grassland – *Urtica dioica* sub-community.

G17 – field immediately to the south-west of Foxburrow Meadow – MG6a *Lolium perenne – Cynosurus cristatus* grassland – typical sub-community

3.2.56. Five quadrats were sampled within the field to the south-west of Foxburrow Meadow, which was un-mown at the time of the surveys (Photograph 35). The field was species-poor with very few forbs present and was dominated by perennial rye-grass, accompanied by constant crested dog's-tail and red fescue.

3.2.57. The results of the quadrat sampling are shown in Appendix B; Table A-11, with MATCH analysis giving the three highest similarity coefficients for MG6 *Lolium perenne – Cynosurus cristatus* grassland sub-communities, with the highest percentage matches (43.0%) for both the MG6a typical sub-community and the MG6b *Anthoxanthum odoratum* sub-community. The typical sub-community seems a better fit as it tends to be rather species-poor, whilst the MG6b sub-community tends to be richer and contains frequent sweet vernal-grass *Anthoxanthum odoratum,* which only occurred in one sampling quadrat at very low coverage.

3.2.58. The field at G17 is typical of enclosed improved grassland throughout most of lowland Britain, where it is found on moist but free-draining neutral soils and forms the majority of livestock pasture. MG6 is also widespread as a recreational sward, where it forms sports pitches, road verges and lawns.

G18 – grassland strip to south of hedgerow which runs south-east from G17 – MG1b *Arrhenatherum elatius* grassland – *Urtica dioica* sub-community and MG7 *Lolium perenne* leys and related grasslands

3.2.59. G18 consisted of a mown and an un-mown strip of grassland to the south of a hedge. The mown strip was located to the south of the un-mown strip which was adjacent to the hedge (Photograph 36). The un-mown vegetation at the base of the hedge was very narrow (approximately 1-1.5m wide) and dominated by false oat-grass and cock's-foot, accompanied by bracken, frequent common nettle, barren brome, hogweed, cow parsley, garlic mustard *Alliaria petiolata,* white bryony *Bryonia dioica.* Yorkshire-fog, red campion and field bindweed. This strip was not subject to quadrat sampling but showed a close affinity to the MG1b *Arrhenatherum elatius* grassland – *Urtica dioica* sub-community which is characterised by constant common nettle and frequent large umbellifers such as cow parsley and hogweed.

3.2.60. The wider (approximately 2-3m wide), mown strip to the south was dominated by perennial rye-grass, with very few other species present and most closely resembled MG7 *Lolium perenne* leys and related grasslands.

G19 – grassland strip to south of hedgerow which forms southern boundary of arable field to south of G18 – MG1a *Arrhenatherum elatius* grassland – *Festuca rubra* sub-community and MG6a *Lolium perenne – Cynosurus cristatus* grassland – typical sub-community

3.2.61. The grassland at G19 also consisted of a mown and un-mown strip to the south of a hedge (Photograph 37) but both were approximately the same width (2-3m wide). The un-mown vegetation was dominated by false oat-grass, cock's-foot and rough meadow-grass, with frequent red fescue and perennial rye-grass, accompanied by rough chervil, timothy, hedge bindweed, oxeye daisy, crested dog's-tail and creeping buttercup. There was blackthorn encroachment into the grassland at the eastern end of the hedge. This strip was not subject to quadrat sampling but showed a close affinity to the MG1a *Arrhenatherum elatius* grassland – *Festuca rubra* sub-community which is generally grass-dominated and usually species-poor.

3.2.62. The recently mown strip was dominated by perennial rye-grass, with very few forbs evident but crested dog's-tail was present thereby showing a closer affinity to MG6a *Lolium perenne – Cynosurus cristatus* grassland – typical sub-community than MG7 which would not include crested dog's-tail within the sward.

G20 – grassland strip to west of hedgerow near southern end of Scheme – MG1a *Arrhenatherum elatius* grassland – *Festuca rubra* sub-community and MG6a *Lolium perenne – Cynosurus cristatus* grassland – typical sub-community

3.2.63. The G20 grassland also consisted of two similarly sized (2-3m wide) mown and un-mown strips with the un-mown strip located adjacent to the hedge (Photograph 38). Three quadrats were placed within the un-mown grassland strip, with the results of the quadrat sampling shown in Appendix B; Table A-12, with MATCH analysis giving the highest similarity co-efficient for MG9b *Holcus lanatus – Deschampsia cespitosa* grassland – *Arrhenatherum elatius* sub-community. As tufted hair-grass was absent from the sampling area, this community was not considered suitable. The second best match (50.8%) was for MG1a *Arrhenatherum elatius* grassland – *Festuca rubra* sub-community, which does appear to be a suitable sub-community to describe the vegetation at G20, with constant false oat-grass, cock's-foot, red fescue and Yorkshire-fog, but with co-dominant false oat-grass and cock's-foot.

3.2.64. The mown strip did not contain frequent tussock forming grasses such as false oat-grass and cock's-foot, but was dominated by perennial rye-grass, with crested dog's-tail also present, thereby indicating MG6a *Lolium perenne – Cynosurus cristatus* grassland – typical sub-community.

G21 – small grassland field adjacent to pond near southern end of Scheme – MG6a *Lolium perenne – Cynosurus cristatus* grassland – typical sub-community

3.2.65. The small area of grassland at G21 (Photograph 39) is located directly to the east of a small pond, surrounded by mature trees and scrub, including ash *Fraxinus excelsior,* pedunculate oak *Quercus robur,* blackthorn *Prunus spinosa*, hawthorn *Crataegus monogyna*, dog rose *Rosa canina*, elder *Sambucus nigra*, field maple *Acer campestre* and bramble.

3.2.66. The sward at G21 contained constant meadow fescue, Yorkshire-fog, perennial rye-grass, rough meadow-grass and red fescue, with the most abundant species being crested dog's-tail. Forbs were generally scarce although oxeye-daisy and white clover were constant. Five quadrats were paced within the grassland, with the results of the quadrat sampling shown in Appendix B; Table A-13. The highest similarity co-efficient in MATCH was 45.7 for MG6a *Lolium perenne – Cynosurus cristatus* grassland – typical sub-community. This sub-community is one of the more species-poor MG6 sub-communities although it can be quite variable as is the case here, where oxeye daisy is uncharacteristically frequent.

3.3 Woodland

W1 – Rose Carr (Houston) – W8 *Fraxinus excelsior – Acer campestre – Mercurialis perennis* woodland and W6 *Alnus glutinosa – Urtica dioica* woodland

3.3.1. The woodland at Rose Carr was comprised mostly of deciduous tree species including sycamore *Acer pseudoplatanus*, beech *Fagus sylvatica*, pedunculate oak *Quercus robur* and ash *Fraxinus excelsior.* Towards the south-east, near the top of the slope, there was a mixture of mature and immature trees, with most mature specimens being beech and pedunculate oak. The ground near the top of the slope was very sparsely vegetated, with large sections being carpeted in dead leaves (Photograph 40). Towards the south-west, near the top of the slope, the woodland consisted mostly of immature, closely spaced sycamores, with the ground flora dominated by common nettle and dog's-mercury *Mercurialis perennis* (Photograph 41).

3.3.2. The largest area of mature trees was at the north of the woodland, near the bottom of the slope, where the ground flora was richer than further up the slope (Photograph 42). Quadrat sampling was undertaken within this area. Due to the small size of the mature section of woodland, the canopy was sampled in its entirety, with the understorey being sampled using 10m x 10m quadrats and the ground flora being sampled using 2m x 2m quadrats.

3.3.3. The results of the quadrat sampling are shown in Appendix B; Table A-14. The most prominent canopy species were sycamore and pedunculate oak, with lesser amounts of ash and beech. The understorey was very sparse and consisted of widely spaced hazel *Corylus avellana.* Dog's-mercury was overwhelmingly dominant within the ground layer, with other constant species including common nettle, ground-ivy *Glechoma hederacea,* moschatel *Adoxa moschatellina,* cleavers, wood speedwell *Veronica montana* and sycamore seedlings.

3.3.4. The highest two similarity coefficients (37.6% and 36.9%) in MATCH were both for sub-communities of W12 *Fagus sylvatica – Mercurialis perennis* woodland, with the three next highest (35.4% to 34.2%) being for sub-communities of W8 *Fraxinus excelsior – Acer campestre – Mercurialis perennis* woodland. All similarity coefficients were low, indicating that the woodland sampled does not represent a particularly typical example of either W8 or W12 woodland. Both communities are normally dominated in the canopy layer by tree species that were sub-ordinate in the sampling area. Sycamore was the most frequent canopy species and although this species can occur within the canopy of W8 or W12 it is normally only found at higher coverage values within W8 woodland, whilst within W12 beech is always the most abundant tree in mature stands. Although dog's-mercury is common to both communities there were two other constant ground layer species, moschatel and wood speedwell, that are not normally found within W12 but frequently occur within W8. Therefore, although it is not a precise match, the sampled woodland at Rose Carr has a greater affinity with W8 *Fraxinus excelsior – Acer campestre – Mercurialis perennis* woodland.

3.3.5. At the north of Rose Carr, just on the edge of the Scheme boundary, there was a large pond, with dominant common nettle covering most of its banks and a small reed bed at its eastern end, with a small stand of alders *Alnus glutinosa* to the north (Photograph 43). This small group of trees showed an affinity with the W6 *Alnus glutinosa – Urtica dioica* woodland community, a type of wet woodland.

W2 – Nursery Plantation – not classified

3.3.6. Nursery Plantation is a conifer plantation to the west of Rose Carr (Photograph 44). Due to the largely non-native tree component quadrat sampling was not undertaken within this area. The dominant tree species, within the section of plantation within the Scheme boundary, was Douglas fir *Pseudotsuga menziesii,* with frequent narrow-stemmed immature sycamores growing between them. Sycamore saplings were dominant within the understorey, accompanied by lesser amounts of elder.

3.3.7. Occasional mature beech trees were present, with a group of approximately 15 at the north of the plantation, where it adjoins Rose Carr.

3.3.8. The ground layer consisted mostly of common nettle and cleavers, with lesser amounts of bramble, ground-ivy, sycamore seedings, Douglas fir seedlings, dog's-mercury, moschatel, holly, false-brome *Brachypodium sylvaticum* and garlic mustard. More extensive bramble was present along the western edge of the planation. At the southern end of the surveyed section of plantation there were several small clearings in the woodland, which appeared to have been used as campsites.

W3 – Spring Hills – not classified

3.3.9. Only the southern-most section of the woodland at Spring Hills was within the Scheme boundary. The western part of this section was dominated by Scots pine *Pinus sylvestris* (Photograph 45), with the central and eastern parts being predominantly deciduous. Quadrat sampling was not undertaken within the woodland at Spring Hills.

3.3.10. To the east of the conifers the canopy consisted of pedunculate oak, silver birch *Betula pendula*, sycamore and beech, with some mature trees present (Photograph 46). The understorey included various tree seedlings and some hawthorn whilst the ground layer consisted of dense bramble and nettle patches, cleavers, hedge woundwort *Stachys sylvatica,* foxglove *Digitalis purpurea,* moschatel and ground-ivy. Further east, the woodland included some large mature beech trees, with a sparse ground layer which consisted mostly of a carpet of dead beech leaves (Photograph 47).

W4a and W4b – Long Plantation – not classified

3.3.11. Two separate areas of Long Plantation are included within the Scheme boundary, W4a (east) and W4b (west). W4a is predominantly conifer plantation (Photograph 48) with a mix of conifers including Scots pine, cypress *Cupressus* sp. and Douglas fir, with occasional self-sown sycamores between and rare beech and silver birch. The understorey was very sparse and consisted of sycamore saplings and small groups of holly *Ilex aquifolium.* The ground layer included dominant bramble, with some common nettle, foxglove, broad buckler-fern *Dryopteris dilatata* and ground-ivy.

3.3.12. Towards the eastern edge of the W4a plantation, the bramble was less dense and several small patches of bluebell *Hyacinthoides non-scripta* occurred (Photograph 49). The eastern boundary of W4a consisted of a narrow band of mostly deciduous trees (Photograph 50) including ash, beech, larch, Scots pine, sycamore, elder, blackthorn and aspen *Populus tremula.* Beneath these trees some small sections of the ground flora resembled that of W8 *Fraxinus excelsior – Acer campestre – Mercurialis perennis* woodland, with dominant dog's-mercury, accompanied in places by moschatel, bluebells and lords and ladies *Arum maculatum.* These areas, however, were too small to map and sample separately.

3.3.13. W4b is comprised of a small corner of woodland at the north-western edge of Long Plantation. The woodland section is accessed from Ringland Lane, to the south, via a track which leads north. The track to W4b passes to the west of two very large mature pedunculate oaks, just to the south of the woodland (Photograph 51). The trees were approximately 15m high and the northern-most tree had significant damage, where a large limb had torn away from the trunk.

3.3.14. North of the large oak trees there were two smaller oaks and two hawthorns at the edge of the woodland. There were also several sycamores along the western edge. The W4b woodland consisted of a conifer plantation, dominated by Scots pine, with lesser amounts of cypress and Douglas fir, with frequent sycamores growing between the conifers. The ground layer was dominated by bramble (Photograph 52), with other species including wood sage *Teucrium scorodonia,* foxglove, gorse *Ulex europaeus*, bracken, holly and sheep's-sorrel *Rumex acetosella.*

W5 – trees along Ringland Lane – W8d *Fraxinus excelsior – Acer campestre – Mercurialis perennis* woodland – *Hedera helix* sub-community

3.3.15. W5 consisted of a band of trees along the north of Ringland Lane, and a woodland edge along the south of Ringland Lane, with the woodland extending a maximum of 100m south-west from the road. The band of trees along the northern edge were immediately adjacent to an arable field.

3.3.16. The canopy of the northern band of trees was dominated by ivy-covered ash, with the understorey comprising hawthorn, blackthorn, hazel and sycamore (Photograph 53), with one pedunculate oak and a large stand of isolated hazel at its western end. The ground layer included ivy, dog's-mercury, common nettle, lords and ladies, cleavers, red dead nettle *Lamium purpureum,* garlic mustard and honeysuckle *Lonicera periclymenum.*

3.3.17. The woodland edge to the south (Photograph 54) was like the northern trees, comprising semi-mature ash, pedunculate oak and sycamore, with dense ivy coverage on the trees and ground, with a predominantly hazel understorey. Ground layer species included dog's-mercury, lords and ladies, hogweed, cow parsley, wood speedwell and honeysuckle.

3.3.18. Although no quadrats were placed within the narrow woodland strips, both sides of the road showed a strong affinity with W8d *Fraxinus excelsior – Acer campestre – Mercurialis perennis* woodland – *Hedera helix* sub-community. This sub-community is distinguished by the high frequency of ivy within the canopy and on the ground, which leads to a rather dark and dense appearance, with a lower species diversity than within other W8 sub-communities.

W6 – un-named woodland – W10a *Quercus robur – Pteridium aquilinum – Rubus fruticosus* woodland – typical sub-community and not classified

3.3.19. The W6 un-named woodland consisted of a very small section of a larger woodland to the west of Ringland Lane. An access track ran along the western edge of the woodland. There were several large mature pedunculate oaks along the western edge but further east the canopy consisted predominantly of semi-mature sycamores with frequent hazel forming an understorey. The hazel was un-coppiced and accompanied by occasional holly. Amongst the small sycamore trees there were several larger trees including cherry *Prunus avium,* Scots pine, beech and pedunculate oak. The ground flora within the northern-most section was very sparse and mostly consisted of a covering of dead leaves (Photograph 55).

3.3.20. The canopy of the southern section of the woodland comprised large mature pedunculate oaks, interspersed with sycamore saplings and hawthorn in the understorey (Photograph 56). This section of longer established woodland possessed a more typical ground layer, dominated by bramble, with other species including red campion, cleavers, common nettle, broad buckler-fern *Dryopteris dilatata* and garlic mustard. Quadrat sampling was not undertaken within W6 but the southern section and western edge showed a strong affinity to W10a *Quercus robur – Pteridium aquilinum – Rubus fruticosus* woodland – typical sub-community*,* with an oak-dominated canopy over a bramble-dominated ground layer. Other sections of the woodland were not classified.

W7 – woodland along The Broadway – W10a *Quercus robur – Pteridium aquilinum – Rubus fruticosus* woodland – typical sub-community and not classified

3.3.21. The Broadway is a road which runs in a south-easterly direction from Paddy's Lane in the west. It has bands of trees with associated small sections of woodland along its northern and southern sides. The far western end of The Broadway is not within the Scheme boundary of the Scheme but a section further east, up to the junction with Breck Road lies within the Scheme.

3.3.22. The line of trees and scrub along the northern edge was very narrow and consisted mostly of mature sycamores and pedunculate oaks, with the understorey including hawthorn, blackthorn, elder and hazel. Many of the trees were covered in ivy, which also carpeted the ground in places, particularly at the western end (Photograph 57). Other ground layer species included cock's-foot, honeysuckle, greater stitchwort *Stellaria holostea,* white dead-nettle *Lamium album,* red dead-nettle *Lamium purpureum*, lesser celandine *Ficaria verna,* common nettle, cleavers, cow parsley, bramble, ground-elder *Aegopodium podagraria,* ground ivy, lords and ladies, bracken, red campion, garlic mustard, and variegated yellow archangel *Lamiastrum galeobdolon* ssp. *argentatum.*

3.3.23. Variegated yellow archangel is a Wildlife & Countryside Act 1981 (as amended) Schedule 9 non-native invasive plant species. It was present along the northern verge in some large, dense patches (Photograph 58), centred on;

- TG 11376 13666,
- TG 11268 13693,
- TG 11050 13749; and
- TG 10891 13775

3.3.24. Woodland along the southern edge consisted of a canopy of large mature oaks and beech, with occasional Scots pine and silver birch, towards the west (Photograph 59). At the eastern end of the surveyed area the canopy was almost entirely comprised of Scots pine which had been planted in rows (Photograph 60). Despite the differing nature of the canopies the ground layer was consistent along the southern edge, which was dominated by bracken and bramble, with lesser amounts of ivy, greater stitchwort, wood sage *Teucrium scorodonia,* ground ivy, cleavers, honeysuckle, red campion wood speedwell, common nettle, red dead nettle, white dead nettle and hedge woundwort *Stachys sylvatica.*

3.3.25. Quadrats were not placed within W6 due to its small size but the southern side of the road has affinities to W10a *Quercus robur – Pteridium aquilinum – Rubus fruticosus* woodland – typical sub-community*,* with a partially oak-dominated canopy over a bracken and bramble-dominated ground layer. The section of Scots pine canopy possessed the same ground flora and potentially was oak woodland before being replaced by pines. The narrow band of woody vegetation along the northern side of the road was not classified.

W8 – Foxburrow Woodland – W10a *Quercus robur – Pteridium aquilinum – Rubus fruticosus* woodland – typical sub-community

3.3.26. Foxburrow Woodland is located to the south of The Broadway, separated by an expanse of arable land, with an access track leading to the woodland from The Broadway. A wide glade continues south from the access track through the woodland, dividing the eastern and western sections, with narrower glades branching from the central glade in roughly eastern and western directions.

3.3.27. The woodland was subject to quadrat sampling, with five quadrats placed within each homogeneous stand. After an initial assessment it was decided to sample the entire area to the east of the main glade as one homogeneous unit (Area A). This area had a canopy dominated (approx. 80%) by sycamore (Photograph 61), with occasional oak and beech to the south of the minor glade. Mature beech were dominant, however, along the western and northern edges of the woodland. The quadrats were placed within the sycamore-dominated area. The results of the quadrat sampling are shown in Appendix B; Table A-15.

3.3.28. MATCH analysis gave the highest similarity co-efficient (45.8%) for W10a *Quercus robur – Pteridium aquilinum – Rubus fruticosus* woodland – typical sub-community. Although the most frequent canopy tree species was sycamore, the ground layer was typical of W10 woodland, with dominant bramble and frequent bracken, which are constant species within this type of woodland. This community match does appear suitable for the woodland within Area A as pedunculate oak is often present in reduced amounts in W10 due to sycamore being a very effective coloniser of gaps created within cleared areas or where a mature oak has died and been removed.

3.3.29. The woodland to the west of the central glade was sampled separately and was further sub-divided into a northern (Area B, Photograph 62) and southern section (Area C, Photograph 63). Area B was separated as the canopy was dominated by beech (approx. 90%), with lesser amounts of pedunculate oak and silver birch, whilst Area C was closer in canopy composition to Area A, with approximately 80% sycamore and 10% oak. Both areas possessed constant bramble at high coverage values, associated with frequent to constant bracken.

3.3.30. MATCH analysis of Area B gave the highest similarity co-efficient (41.1%) for W10d *Quercus robur – Pteridium aquilinum – Rubus fruticosus* woodland – *Holcus lanatus* sub-community. This sub-community is not a suitable match with the woodland within Area B as the features that define W10d include the presence of conifers and scattered tussocks of Yorkshire-fog, which were not present within Area B. A more suitable sub-community would be W10a *Quercus robur – Pteridium aquilinum – Rubus fruticosus* woodland – typical sub-community.

3.3.31. MATCH analysis of Area C gave the highest similarity co-efficient (43.0%) for W10a *Quercus robur – Pteridium aquilinum – Rubus fruticosus* woodland – typical sub-community, which seems to provide a reasonable fit, considering the scarcity of oak and dominance of sycamore in the canopy. It is considered likely that the three woodland areas at Foxburrow Woodland (W8), together with the woodland along the southern edge of The Broadway (W7) were once covered in a canopy of dominant pedunculate oak but as the mature oaks have died they have been replaced by self-seeded sycamore or planted beech and Scots pine, which are now growing over a more typical W10 woodland ground layer.

4 Discussion

4.1 Overview

4.1.1. The following section evaluates each of the surveyed grassland/arable margins and woodland communities against published criteria detailed in Section 2.5 (Habitats of Principal Importance) and Section 2.6 (Norfolk BAP Criteria).

4.2 Evaluation of habitats of principal importance

Grassland and arable margins

G1 – slopes around attenuation pond, north-east of A1270/A1067 roundabout – MG1e *Arrhenatherum elatius* grassland – *Centaurea nigra* sub-community

4.2.1. This area would qualify as lowland meadows HPI by possessing two frequent (ox-eye daisy and common knapweed) and two occasional (lady's bedstraw and yellow rattle) wildflower indicator species from FEP Table 4 G06 lowland meadows BAP habitat.

G2 – field to the north of A1270/A1067 roundabout, north and west of attenuation pond – MG1a *Arrhenatherum elatius* grassland – *Festuca rubra* sub-community

4.2.2. This area would not qualify as lowland meadows HPI based on species abundance threshold of wildflower indicator species from FEP Table 4 G06 lowland meadows BAP habitat. It does, however, meet the species abundance threshold for G02 semi-improved grassland, which is not a BAP habitat.

G3 – northern verge along Fakenham Road (A1067) – MG1e *Arrhenatherum elatius* grassland – *Centaurea nigra* sub-community and OV24 *Urtica dioica – Galium aparine* community

4.2.3. This area would qualify as lowland meadows HPI due to the presence of two frequent (ox-eye daisy and common knapweed) and two occasional (autumn hawkbit and salad burnet) wildflower indicator species from FEP Table 4 G06 lowland meadows BAP habitat.

G4 – southern verge along Fakenham Road (A1067) – MG1e *Arrhenatherum elatius* grassland – *Centaurea nigra* sub-community

4.2.4. This area would qualify as lowland meadows HPI due to presence of two frequent (ox-eye daisy and common knapweed) and two occasional (autumn hawkbit and salad burnet) wildflower indicator species from FEP Table 4 G06 lowland meadows BAP habitat.

G5 – field directly to the north of River Wensum – transitional community between MG6a *Lolium perenne – Cynosurus cristatus* grassland – typical sub-community: *Alopecurus geniculatus* variant and MG13 *Agrostis stolonifera – Alopecurus geniculatus* grassland community

4.2.5. This area would not qualify as lowland meadows HPI based on species abundance threshold of wildflower indicator species from FEP Table 4 G06 lowland meadows BAP habitat.

G6 – field directly to the south of River Wensum – transitional community between MG6a *Lolium perenne – Cynosurus cristatus* grassland – typical sub-community: *Alopecurus geniculatus* variant and MG13 *Agrostis stolonifera – Alopecurus geniculatus* grassland community

4.2.6. This area would not qualify as lowland meadows HPI based on species abundance threshold of wildflower indicator species from FEP Table 4 G06 lowland meadows BAP habitat.

G7 – field to south of G6 – MG13 *Agrostis stolonifera – Alopecurus geniculatus* grassland community, MG7 *Lolium perenne* leys and related grasslands and MG9 *Holcus lanatus – Deschampsia cespitosa* grassland

4.2.7. None of the homogeneous stands within G7 would qualify as lowland meadows HPI based on species abundance threshold of wildflower indicator species from FEP Table 4 G06 lowland meadows BAP habitat.

G8 – northern portion of land to south-east of woodland W1 – MG1a *Arrhenatherum elatius* grassland – *Festuca rubra* sub-community and MG9a *Holcus lanatus – Deschampsia cespitosa* grassland – *Poa trivialis* sub-community

4.2.8. None of the homogeneous stands within G8 would qualify as lowland meadows HPI based on species abundance threshold of wildflower indicator species from FEP Table 4 G06 lowland meadows BAP habitat.

G9 – southern portion of land to south-east of woodland W1 – MG1e *Arrhenatherum elatius* grassland – *Centaurea nigra* sub-community

4.2.9. This area would qualify as lowland meadows HPI due to presence of two frequent (common knapweed and common bird's-foot trefoil) and two occasional (autumn hawkbit and oxeye daisy) wildflower indicator species from FEP Table 4 G06 lowland meadows BAP habitat.

G10 – grassland located between woodland W2 and W3 – MG1a *Arrhenatherum elatius* grassland – *Festuca rubra* sub-community

4.2.10. This area would not qualify as lowland meadows HPI based on species abundance threshold of wildflower indicator species from FEP Table 4 G06 lowland meadows BAP habitat. It does, however, meet the species abundance threshold for G02 semi-improved grassland, which is not a BAP habitat.

G11 – grassland located to the west of woodland W6 – MG7 *Lolium perenne* leys and related grasslands

4.2.11. Grassland at G11 would not qualify as lowland meadows HPI based on species abundance threshold of wildflower indicator species from FEP Table 4 G06 lowland meadows BAP habitat.

G12 – grassland along hedgerow (C11 hedge in previous reports) running north-east from Weston Road – mosaic of MG1b *Arrhenatherum elatius* grassland – *Urtica dioica* sub-community and OV24 *Urtica dioica – Galium aparine* community towards northern end of grassland, with MG1e *Arrhenatherum elatius* grassland – *Centaurea nigra* sub-community along southern section

4.2.12. None of the homogeneous stands within G12 would qualify as lowland meadows HPI based on species abundance threshold of wildflower indicator species from FEP Table 4 G06 lowland meadows BAP habitat.

G13 – horse paddocks to south of Weston Road – transitional between MG6 *Lolium perenne – Cynosurus cristatus* grassland and MG7 *Lolium perenne* leys and related grasslands

4.2.13. The grassland within G13 would not qualify as lowland meadows HPI based on species abundance threshold of wildflower indicator species from FEP Table 4 G06 lowland meadows BAP habitat.

G14 – grassland strips at edge of small arable field along eastern edge of Breck Road and to south of hedgerow forming northern field boundary – MG1a *Arrhenatherum elatius* grassland – *Festuca rubra* sub-community

4.2.14. The grassland within G14 would not qualify as lowland meadows HPI based on species abundance threshold of wildflower indicator species from FEP Table 4 G06 lowland meadows BAP habitat.

G15 – grassland glades to north-east of Foxburrow Meadow, within woodland W8 – weak affinity with OV24 *Urtica dioica – Galium aparine* community

4.2.15. The grassland within G15 would not qualify as lowland meadows HPI based on species abundance threshold of wildflower indicator species from FEP Table 4 G06 lowland meadows BAP habitat.

G16 – Foxburrow Meadow – M23a *Juncus effusus/acutiflorus – Galium palustre* rush pasture – *Juncus acutiflorus* sub-community, MG1b *Arrhenatherum elatius* grassland – *Urtica dioica* sub-community and S6 *Carex riparia* swamp community

4.2.16. The MG1b grassland within G16 would not qualify as lowland meadows HPI based on species abundance threshold of wildflower indicator species from FEP Table 4 G06 lowland meadows BAP habitat.

4.2.17. The rush-dominated areas, however, would qualify as purple moor-grass and rush pastures HPI due to the presence of two frequent (a jointed rush i.e. sharp-flowered rush and greater bird's-foot trefoil) and two occasional (water mint and lesser spearwort) wildflower indicator species from FEP Table 5 G07 purple moor-grass and rush pastures BAP habitat.

G17 – field immediately to the south-west of Foxburrow Meadow – MG6a *Lolium perenne – Cynosurus cristatus* grassland – typical sub-community

4.2.18. The grassland within G17 would not qualify as lowland meadows HPI based on species abundance threshold of wildflower indicator species from FEP Table 4 G06 lowland meadows BAP habitat.

G18 – grassland strip to south of hedgerow which runs south-east from G17 – MG1b *Arrhenatherum elatius* grassland – *Urtica dioica* sub-community and MG7 *Lolium perenne* leys and related grasslands

4.2.19. None of the homogeneous stands within G18 would qualify as lowland meadows HPI based on species abundance threshold of wildflower indicator species from FEP Table 4 G06 lowland meadows BAP habitat.

G19 – grassland strip to south of hedgerow which forms southern boundary of arable field to south of G18 – MG1a *Arrhenatherum elatius* grassland – *Festuca rubra* sub-community and MG6a *Lolium perenne – Cynosurus cristatus* grassland – typical sub-community

4.2.20. None of the homogeneous stands within G19 would qualify as lowland meadows HPI based on species abundance threshold of wildflower indicator species from FEP Table 4 G06 lowland meadows BAP habitat.

G20 – grassland strip to west of hedgerow near southern end of Scheme – MG1a *Arrhenatherum elatius* grassland – *Festuca rubra* sub-community and MG6a *Lolium perenne – Cynosurus cristatus* grassland – typical sub-community

4.2.21. The grassland within G20 would not qualify as lowland meadows HPI based on species abundance threshold of wildflower indicator species from FEP Table 4 G06 lowland meadows BAP habitat.

G21 – small grassland field adjacent to pond near southern end of Scheme – MG6a *Lolium perenne – Cynosurus cristatus* grassland – typical sub-community

4.2.22. The grassland within G21 would not qualify as lowland meadows HPI based on species abundance threshold of wildflower indicator species from FEP Table 4 G06 lowland meadows BAP habitat.

Woodland

W1 – Rose Carr (Houston) – W8 *Fraxinus excelsior – Acer campestre – Mercurialis perennis* woodland and W6 *Alnus glutinosa – Urtica dioica* woodland

4.2.23. The woodland at Rose Carr (Houston) was comprised mostly of deciduous tree species including sycamore, beech, pedunculate oak and ash. Within W1 most of the woodland showed an affinity with W8 *Fraxinus excelsior – Acer campestre – Mercurialis perennis* woodland, with a small stand of W6 *Alnus glutinosa – Urtica dioica* wet woodland.

4.2.24. Both of these woodland types would be encompassed by the definition of lowland mixed deciduous woodland HPI, as they are both semi-natural stands within lowland England, with the W6 *Alnus glutinosa – Urtica dioica* wet woodland also matching the definition of wet woodland HPI.

W2 – Nursery Plantation – not classified

4.2.25. The woodland at Nursery Plantation consisted of a conifer plantation dominated by Douglas fir. As such it was not subject to NVC classification and would not be classed as lowland mixed deciduous woodland HPI.

W3 – Spring Hills – not classified

4.2.26. The woodland at Spring Hills consisted of a section dominated by Scots pine, but with areas to the east of this being mostly deciduous, including pedunculate oak, silver birch, sycamore and beech. The woodland was not assigned an NVC type but the pine-dominated area would not be classed as lowland mixed deciduous woodland HPI, whilst the deciduous section of the woodland would be.

W4a and W4b – Long Plantation – not classified

4.2.27. Long Plantation consisted predominantly of conifer plantation, with two large mature oak trees and a narrow band of sycamores along the western edge of W4b. A narrow band of deciduous trees was also present along the eastern edge of W4a. The conifer-dominated sections would not be classed as lowland mixed deciduous woodland HPI, whilst the deciduous sections, along the eastern and western boundaries would be, due to the local dominance of deciduous tree species .

W5 – trees along Ringland Lane – W8d *Fraxinus excelsior – Acer campestre – Mercurialis perennis* woodland – *Hedera helix* sub-community

4.2.28. The narrow band of trees along the north of Ringland Lane and the woodland edge along the south of Ringland Lane showed a strong affinity with W8d *Fraxinus excelsior – Acer campestre – Mercurialis perennis* woodland – *Hedera helix* sub-community.

4.2.29. The majority of lowland mixed deciduous woodland HPI belongs to either the W8 *Fraxinus excelsior - Acer campestre - Mercurialis perennis* woodland community or the W10 *Quercus robur - Pteridium aquilinum - Rubus fruticosus* woodland community. The trees along Ringland Lane are therefore classed as lowland mixed deciduous woodland HPI.

W6 – un-named woodland – W10a *Quercus robur – Pteridium aquilinum – Rubus fruticosus* woodland – typical sub-community and not classified

4.2.30. The W6 un-named woodland consisted of a section dominated by semi-mature sycamores and other areas dominated by large, mature pedunculate oaks. The oak-dominated sections were classified as W10 *Quercus robur – Pteridium aquilinum – Rubus fruticosus* woodland, with the more immature section of the woodland not given an NVC classification.

4.2.31. Both sections of the woodland can be classed as lowland mixed deciduous woodland HPI.

W7 – Woodland along The Broadway – W10a *Quercus robur – Pteridium aquilinum – Rubus fruticosus* woodland – typical sub-community and not classified

4.2.32. The line of trees along the northern edge of The Broadway were predominantly deciduous but were not subject to NVC assessment due to the very narrow width of the stand. This area would, however, qualify as lowland mixed deciduous woodland HPI.

4.2.33. To the south of The Broadway W10 *Quercus robur – Pteridium aquilinum – Rubus fruticosus* woodland was present towards the west of the survey section, with Scots pine plantation comprising the eastern section. The western section would be classed as lowland mixed deciduous woodland HPI, whilst the conifer plantation would not due to the local dominance of Scots pine.

W8 – Foxburrow Woodland – W10a *Quercus robur – Pteridium aquilinum – Rubus fruticosus* woodland – typical sub-community

4.2.34. The W10a *Quercus robur – Pteridium aquilinum – Rubus fruticosus* woodland – typical sub-community which was present within all areas of W8 comprises lowland mixed deciduous woodland HPI.

4.3 Norfolk BAP Criteria

Grassland and arable margins

G1 – slopes around attenuation pond, north-east of A1270/A1067 roundabout – MG1e *Arrhenatherum elatius* grassland – *Centaurea nigra* sub-community

4.3.1. The slopes around the attenuation pond were classed as MG1e *Arrhenatherum elatius* grassland – *Centaurea nigra* sub-community which is not one of the specific NVC communities included within the Norfolk lowland meadows and pastures Habitat Action Plan (HAP).

4.3.2. MG1 is far less species-rich than MG5, which is included within the HAP. The MG1e *Arrhenatherum elatius* grassland – *Centaurea nigra* sub-community is, however, one of the more species-rich types of MG1. Within area G1 there were several species present which are typical of MG5 grassland (including lady's bedstraw, quaking grass, yarrow, ribwort plantain, common knapweed, oxeye daisy and common cat's-ear). Overall though the community was far closer to MG1 than MG5 and therefore would not be included within the Norfolk lowland meadows and pastures HAP on account of its NVC type.

4.3.3. Rare/occasional hoary mullein plants were present around the attenuation pond and therefore this area should be of greater value than the intrinsic value of MG1 grassland. This area is directly connected to other areas which supported higher populations of hoary mullein (G2 and G3), which is discussed further below (under G3).

G2 – field to the north of A1270/A1067 roundabout, north and west of attenuation pond – MG1a *Arrhenatherum elatius* grassland – *Festuca rubra* sub-community

4.3.4. The field at G2 was comprised of a more species-poor type of MG1 grassland than was present in G1 and G3 and as such would not be included within the Norfolk lowland meadows and pastures HAP. It did, however, contain occasional hoary mullein plants and therefore this area should be of greater value than the intrinsic value of MG1 grassland.

G3 – northern verge along Fakenham Road (A1067) – MG1e *Arrhenatherum elatius* grassland – *Centaurea nigra* sub-community and OV24 *Urtica dioica – Galium aparine* community

4.3.5. The road verge at G3 also contained MG1e *Arrhenatherum elatius* grassland – *Centaurea nigra* sub-community, at its eastern end. Despite MG1 not being included within the Norfolk lowland meadows and pastures HAP, the verge along the north of Fakenham Road should be considered as being of at least the same importance of a Norfolk lowland meadows and pastures habitat. This is due to the presence of frequent of hoary mullein, a nationally scarce species, which has its main British distribution centred on Norfolk.

4.3.6. The northern verge along Fakenham Road has good connectivity with areas G1 and G2 which contained lesser amounts of hoary mullein. Due to the connectivity though, there is scope to easily increase populations within G1 and G2 and undertake similar management options across these three areas.

G4 – southern verge along Fakenham Road (A1067) – MG1e *Arrhenatherum elatius* grassland – *Centaurea nigra* sub-community

4.3.7. Frequent hoary mullein was also present along the southern verge of Fakenham Road. Therefore, this verge also has a greater value than the intrinsic value of MG1 grassland and could be managed to enhance the current population of the species.

G5 – field directly to the north of River Wensum – transitional community between MG6a *Lolium perenne – Cynosurus cristatus* grassland – typical sub-community: *Alopecurus geniculatus* variant and MG13 *Agrostis stolonifera – Alopecurus geniculatus* grassland community

4.3.8. Although the field directly to the north of the River Wensum does not entirely match the MG13 *Agrostis stolonifera – Alopecurus geniculatus* grassland community, it does exhibit a similar community composition and is within a typical location for MG13 grassland.

4.3.9. Whilst being transitional between MG13 and the drier MG6 community, the field at G5 contained six out of seven of the species listed as being typical of MG13 in Norfolk. Therefore, it is considered to meet the Norfolk HAP criteria for lowland meadows and pastures, particularly if subject to favourable management in the future.

G6 – field directly to the south of River Wensum – transitional community between MG6a *Lolium perenne – Cynosurus cristatus* grassland – typical sub-community: *Alopecurus geniculatus* variant and MG13 *Agrostis stolonifera – Alopecurus geniculatus* grassland community

4.3.10. The field immediately to the south of the river was also likely to be subject to periodic flooding from the river. It possessed a similar suite of species to that in G5 and seemed to be transitional between MG6 typical sub-community: *Alopecurus geniculatus* variant and MG13 grassland.

4.3.11. Therefore, it is considered to meet the Norfolk HAP criteria for lowland meadows and pastures, particularly if subject to favourable management in the future.

G7 – field to south of G6 – MG13 *Agrostis stolonifera – Alopecurus geniculatus* grassland community, MG7 *Lolium perenne* leys and related grasslands and MG9 *Holcus lanatus – Deschampsia cespitosa* grassland

4.3.12. The field at G7 consisted of three distinct homogeneous areas, which were sampled/assessed separately. Only the areas described as MG13 grassland would meet the Norfolk HAP criteria for lowland meadows and pastures.

G8 – northern portion of land to south-east of woodland W1 – MG1a *Arrhenatherum elatius* grassland – *Festuca rubra* sub-community and MG9a *Holcus lanatus – Deschampsia cespitosa* grassland – *Poa trivialis* sub-community

4.3.13. The land at G8, to the north of the hedge, consisted of a species-poor sub-community of MG1 grassland and species-poor tufted hairgrass-dominated MG9 grassland which do not meet the Norfolk HAP criteria for lowland meadows and pastures.

G9 – southern portion of land to south-east of woodland W1 – MG1e *Arrhenatherum elatius* grassland – *Centaurea nigra* sub-community

4.3.14. The land to the south of the hedge consisted of the MG1e grassland sub-community, which is one of the more species-rich MG1 sub-communities but would still not meet the Norfolk HAP criteria for lowland meadows and pastures.

G10 – grassland located between woodland W2 and W3 – MG1a *Arrhenatherum elatius* grassland – *Festuca rubra* sub-community

4.3.15. The small area of grassland at G10 appeared close to the MG1a *Arrhenatherum elatius* grassland – *Festuca rubra* sub-community and as such would not meet the Norfolk HAP criteria for lowland meadows and pastures.

G11 – grassland located to the west of woodland W6 – MG7 *Lolium perenne* leys and related grasslands

4.3.16. Grassland at G11 would not meet the Norfolk HAP criteria for lowland meadows and pastures.

G12 – grassland along hedgerow (C11 hedge in previous reports) running north-east from Weston Road – mosaic of MG1b *Arrhenatherum elatius* grassland – *Urtica dioica* sub-community and OV24 *Urtica dioica – Galium aparine* community towards northern end of grassland, with MG1e *Arrhenatherum elatius* grassland – *Centaurea nigra* sub-community along southern section

4.3.17. None of the communities present along the hedgerow would meet the Norfolk HAP criteria for lowland meadows and pastures.

G13 – horse paddocks to south of Weston Road – transitional between MG6 *Lolium perenne – Cynosurus cristatus* grassland and MG7 *Lolium perenne* leys and related grasslands

4.3.18. The transitional community present within the horse paddocks was typical of improved pasture and as such would not meet the Norfolk HAP criteria for lowland meadows and pastures.

G14 – grassland strips at edge of small arable field along eastern edge of Breck Road and to south of hedgerow forming northern field boundary – MG1a *Arrhenatherum elatius* grassland – *Festuca rubra* sub-community

4.3.19. The MG1a grassland strips at G14 would not meet the Norfolk HAP criteria for lowland meadows and pastures.

G15 – grassland glades to north-east of Foxburrow Meadow, within woodland W8 – weak affinity with OV24 *Urtica dioica – Galium aparine* community

4.3.20. The grassland glades with woodland W8 would not meet the Norfolk HAP criteria for lowland meadows and pastures.

G16 – Foxburrow Meadow – M23a *Juncus effusus/acutiflorus – Galium palustre* rush pasture – *Juncus acutiflorus* sub-community, MG1b *Arrhenatherum elatius* grassland – *Urtica dioica* sub-community and S6 *Carex riparia* swamp community

4.3.21. Foxburrow Meadow consisted of a complex mosaic of several vegetation types which occurred in an irregular repeating pattern across the meadow, with the most widespread component of the mosaic being M23a *Juncus effusus/acutiflorus – Galium palustre* rush pasture – *Juncus acutiflorus* sub-community. This mire community was accompanied by lesser amounts of MG1b *Arrhenatherum elatius* grassland – *Urtica dioica* sub-community and a small patch of S6 *Carex riparia* swamp community.

4.3.22. Taken as a whole, Foxburrow Meadow could be classified as fen-meadow, which aligns with purple moor-grass and rush pastures BAP habitat. This type of habitat is included within the Norfolk fens HAP.

G17 – field immediately to the south-west of Foxburrow Meadow – MG6a *Lolium perenne – Cynosurus cristatus* grassland – typical sub-community

4.3.23. The MG6a grassland present to the south-west of Foxburrow Meadow was typical of improved pasture and as such would not meet the Norfolk HAP criteria for lowland meadows and pastures.

G18 – grassland strip to south of hedgerow which runs south-east from G17 – MG1b *Arrhenatherum elatius* grassland – *Urtica dioica* sub-community and MG7 *Lolium perenne* leys and related grasslands

4.3.24. The MG1b and MG7 grassland strips to the south of the hedgerow at G18 would not meet the Norfolk HAP criteria for lowland meadows and pastures.

G19 – grassland strip to south of hedgerow which forms southern boundary of arable field to south of G18 – MG1a *Arrhenatherum elatius* grassland – *Festuca rubra* sub-community and MG6a *Lolium perenne – Cynosurus cristatus* grassland – typical sub-community

4.3.25. The MG1a and MG6 grassland strips to the south of the hedgerow at G19 would not meet the Norfolk HAP criteria for lowland meadows and pastures.

G20 – grassland strip to west of hedgerow near southern end of Scheme – MG1a *Arrhenatherum elatius* grassland – *Festuca rubra* sub-community and MG6a *Lolium perenne – Cynosurus cristatus* grassland – typical sub-community

4.3.26. The MG1a and MG6 grassland strips to the west of the hedgerow at G20 would not meet the Norfolk HAP criteria for lowland meadows and pastures.

G21 – small grassland field adjacent to pond near southern end of Scheme – MG6a *Lolium perenne – Cynosurus cristatus* grassland – typical sub-community

4.3.27. The small area of MG6a grassland at G21 would not meet the Norfolk HAP criteria for lowland meadows and pastures.

Woodland

W1 – Rose Carr (Houston) – W8 *Fraxinus excelsior – Acer campestre – Mercurialis perennis* woodland and W6 *Alnus glutinosa – Urtica dioica* woodland

4.3.28. The W8 *Fraxinus excelsior – Acer campestre – Mercurialis perennis* woodland at Rose Carr would meet the Norfolk HAP criteria for lowland mixed deciduous woodland, whilst the W6 *Alnus glutinosa – Urtica dioica* woodland community would meet the Norfolk HAP criteria for wet woodland.

W2 – Nursery Plantation – not classified

4.3.29. Nursery plantation would not meet the Norfolk HAP criteria for lowland mixed deciduous woodland.

W3 – Spring Hills – not classified

4.3.30. The eastern and central sections of Spring Hills would meet the Norfolk HAP criteria for lowland mixed deciduous woodland, but the conifer-dominated western section would not.

W4a and W4b – Long Plantation – not classified

4.3.31. The eastern edge of W4a and the western edge of W4b within Long Plantation would meet the Norfolk HAP criteria for lowland mixed deciduous woodland, but the central conifer-dominated section would not.

W5 – trees along Ringland Lane – W8d *Fraxinus excelsior – Acer campestre – Mercurialis perennis* woodland – *Hedera helix* sub-community

4.3.32. The trees along both sides of Ringland Lane would meet the Norfolk HAP criteria for lowland mixed deciduous woodland.

W6 – un-named woodland – W10a *Quercus robur – Pteridium aquilinum – Rubus fruticosus* woodland – typical sub-community

4.3.33. The un-named woodland at W6 would meet the Norfolk HAP criteria for lowland mixed deciduous woodland.

W7 – woodland along The Broadway – W10a *Quercus robur – Pteridium aquilinum – Rubus fruticosus* woodland – typical sub-community and not classified

4.3.34. The woodland along the northern edge of The Broadway and the western end of the southern edge would meet the Norfolk HAP criteria for lowland mixed deciduous woodland but the conifer-dominated eastern part of the southern edge would not.

W8 – Foxburrow Woodland – W10a *Quercus robur – Pteridium aquilinum – Rubus fruticosus* woodland – typical sub-community

4.3.35. The W10a *Quercus robur – Pteridium aquilinum – Rubus fruticosus* woodland – typical sub-community would meet the Norfolk HAP criteria for lowland mixed deciduous woodland.

5 Conclusions

5.1.1. Nine different NVC communities/sub-communities were recorded within the grassland/arable margin survey areas, with a further five mosaics/transitional communities recorded. Within the woodland survey areas there were four different communities/sub-communities recorded, with some woodlands unable to be classified due to being comprised mainly of non-native conifers.

5.1.2. Each survey compartment was then assessed on whether it included HPI habitat or habitats included within HAPs in the Norfolk BAP. This assessment is summarised in Table 5-1 below.

Table 5-1 – Assessment of survey compartments against HPI and Norfolk HAP criteria

Area	NVC	HPI	Norfolk HAP
G1	MG1e	Yes-lowland meadows HPI	No*
G2	MG1a	No	No*
G3	MG1e & OV24	Yes-lowland meadows HPI	No*
G4	MG1e	Yes-lowland meadows HPI	No*
G5	MG6a / MG13 transition	No	Yes-lowland meadows and pastures Norfolk HAP
G6	MG6a / MG13 transition	No	Yes-lowland meadows and pastures Norfolk HAP
G7	MG9a, MG13 &MG7	No	Yes-lowland meadows and pastures Norfolk HAP (only MG13 area)
G8	MG1a & MG9a	No	No
G9	MG1e	Yes-lowland meadows HPI	No
G10	MG1a	No	No
G11	MG7	No	No
G12	MG1b / OV24 mosaic & MG1e	No	No
G13	MG6 / MG7 transition	No	No
G14	MG1a	No	No
G15	OV24	No	No
G16	M23a / MG1b mosaic & S6	Yes-purple moor-grass and rush pasture HPI	Yes-fens Norfolk HAP
G17	MG6a	No	No
G18	MG1b & MG7	No	No
G19	MG1a & MG6a	No	No

Area	NVC	HPI	Norfolk HAP
G20	MG1a & MG6a	No	No
G21	MG6a	No	No
W1	W8 & W6	Yes-lowland mixed deciduous woodland and wet woodland HPI	Yes- lowland mixed deciduous woodland and wet woodland Norfolk HAPs
W2	unclassified	No	No
W3	unclassified	Yes-lowland mixed deciduous woodland HPI (deciduous section only)	Yes-lowland mixed deciduous woodland Norfolk HAP (deciduous section only)
W4a	unclassified	Yes-lowland mixed deciduous woodland HPI (deciduous section only)	Yes-lowland mixed deciduous woodland Norfolk HAP (deciduous section only)
W4b	unclassified	Yes-lowland mixed deciduous woodland HPI (deciduous section only)	Yes-lowland mixed deciduous woodland Norfolk HAP (deciduous section only)
W5	W8d	Yes-lowland mixed deciduous woodland HPI	Yes-lowland mixed deciduous woodland Norfolk HAP
W6	W10a	Yes-lowland mixed deciduous woodland HPI	Yes-lowland mixed deciduous woodland Norfolk HAP
W7	W10a	Yes-lowland mixed deciduous woodland HPI (deciduous section only)	Yes-lowland mixed deciduous woodland Norfolk HAP
W8	W10a	Yes-lowland mixed deciduous woodland HPI	Yes-lowland mixed deciduous woodland Norfolk HAP

*Despite the MG1 grasslands not being included within Norfolk lowland meadows and pastures HAP these four areas (G1-G4) should be valued as higher than the intrinsic value of MG1 grassland due to the presence of the nationally scarce species hoary mullein

5.1.3. A total of four grassland/arable margin survey compartments achieved the species abundance threshold for lowland meadows HPI and one compartment (G16) achieved the species abundance threshold for purple moor-grass and rush pasture HPI. Three survey compartments contained NVC communities that are included within the lowland meadows and pastures Norfolk HAP, with one compartment (G16) containing habitat that would be included within the fens Norfolk HAP.

5.1.4. All grassland habitat that achieved the species abundance threshold for lowland meadows HPI was classified as MG1e grassland which is always more species-rich than MG1a.

5.1.5. These areas were G1, G3 and G4, at the northern end of the Scheme, along with G9, south of the River Wensum. Grassland that was included within the lowland meadows and pastures Norfolk HAP (G5, G6 and G7) was confined to MG13, which is usually a species-poor habitat but is confined to areas subject to regular inundation from watercourses; in this case from the River Wensum. An area of wet grassland to the north and south of Foxburrow Stream (G16) achieved the species abundance threshold for purple moor-grass and rush pasture HPI and would be included within the fens Norfolk HAP.

5.1.6. All areas of deciduous woodland would be classed as lowland mixed deciduous woodland HPI and be included within the lowland mixed deciduous woodland Norfolk HAP. The small section of wet W6 woodland within compartment W1 would be classed as wet woodland HPI and be included within the wet woodland Norfolk HAP.

6 References

6.1 Project references

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Appendix A – Overview and NVC area locations (see separate document)

Appendix B – Floristic Tables

Frequency Legend:

- I signifying a species present in 1-20% of samples (scarce);
- II signifying a species present in 21-40% of samples (occasional);
- III signifying a species present in 41-60% of samples (frequent);
- IV signifying a species present in 61-80% of samples (constant); and

V signifying a species present in 81-100% of samples (constant)

Table B: 1 – Quadrat data for G2 grassland

Legend:

- Quadrat 1 - TG1458515507
- Quadrat 2 - TG1460415516
- Quadrat 3 - TG1463115523
- Quadrat 4 - TG1466915532
- Quadrat 5 - TG1476115566

Latin Name	Common Name	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Frequency	Range
Bromus hordeaceus	soft-brome	5	6	4	4	6	V	4-6
Dactylis glomerata	cock's-foot	9	4	6	7	7	V	4-9
Festuca rubra	red fescue	4	2	7	5	2	V	2-7
Geranium molle	dove's-foot crane's-bill	4	1	8	7	8	V	1-8
Holcus lanatus	Yorkshire-fog	2	8	8	9	5	V	2-9
Jacobaea vulgaris	common ragwort	7	6	7	8	4	V	4-8
Arenaria serpyllifolia	thyme-leaved sandwort	Absent	3	1	2	7	IV	1-7

Latin Name	Common Name	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Frequency	Range
Cerastium fontanum	common mouse-ear	Absent	2	Absent	4	7	III	2-7
Hypochaeris radicata	cat's-ear	2	1	Absent	Absent	3	III	1-3
Agrostis capillaris	common bent	Absent	Absent	4	1	Absent	II	1-4
Leucanthemum vulgare	oxeye daisy	2	1	Absent	Absent	Absent	II	1-2
Lolium perenne	perennial rye-grass	3	2	Absent	Absent	Absent	II	2-3
Rumex obtusifolius	broad-leaved dock	Absent	Absent	2	2	Absent	II	2
Trifolium repens	white clover	Absent	5	Absent	Absent	2	II	2-5
Verbascum pulverulentum	hoary mullein	Absent	Absent	2	4	Absent	II	2-4
Cirsium vulgare	spear thistle	Absent	1	Absent	Absent	Absent	I	1
Echium vulgare	viper's bugloss	1	Absent	Absent	Absent	Absent	I	1
Filago germanica	common cudweed	Absent	4	Absent	Absent	Absent	I	4
Lysimachia arvensis	scarlet pimpernel	Absent	Absent	1	Absent	Absent	I	1
Myosotis arvensis	field forget-me-not	Absent	1	Absent	Absent	Absent	I	1
Papaver rhoeas	common poppy	Absent	Absent	Absent	1	Absent	I	1
Plantago lanceolata	ribwort plantain	Absent	4	Absent	Absent	Absent	I	4
Quercus robur	pedunculate oak	Absent	Absent	Absent	1	Absent	I	1
Scorzoneroides autumnalis	autumn hawkbit	Absent	Absent	Absent	Absent	3	I	3
Sonchus oleraceus	smooth sow-thistle	2	Absent	Absent	Absent	Absent	I	2

Latin Name	Common Name	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Frequency	Range
Taraxacum officinale agg.	Dandelion	1	Absent	Absent	Absent	Absent	I	1

NVC Community Similarity Matches

MATCH Coefficients	%
MG1a	41.7
MG7b	37.7
MG6b	37.4
MG6a	37.0
MG7d	36.7

Table B: 2 – Quadrat data for G3 grassland

- Quadrat 1 - TG1421815658
- Quadrat 2 - TG1427015618
- Quadrat 3 - TG1431615601
- Quadrat 4 - TG1436215579
- Quadrat 5 - TG1442415546

Latin Name	Common Name	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Frequency	Range
Achillea millefoilum	yarrow	4	3	5	7	6	V	3-7
Centaurea nigra	common knapweed	3	4	5	6	7	V	3-7
Festuca ovina	sheep's fescue	8	3	8	8	6	V	3-8
Jacobaea vulgaris	common ragwort	6	3	2	3	5	V	2-6
Leucanthemum vulgare	oxeye daisy	6	9	7	10	9	V	6-10
Plantago lanceolata	ribwort plantain	6	5	4	8	7	V	4-8
Dactylis glomerata	cock's-foot	3	2	Absent	2	6	IV	2-6
Scorzoneroides autumnalis	autumn hawkbit	1	1	4	1	Absent	IV	1-4
Veronica persica	common field-speedwell	3	2	1	Absent	Absent	III	1-3
Arenaria serpyllifolia	thyme-leaved sandwort	Absent	4	Absent	Absent	2	II	2-4
Brachythecium rutabulum	rough-stalked feather-moss	4	1	Absent	Absent	Absent	II	1-4
Cirsium arvense	creeping thistle	Absent	4	1	Absent	Absent	II	1-4
Geranium dissectum	cut-leaved crane's-bill	2	Absent	Absent	Absent	2	II	2
Poterium sanguisorba	salad burnet	Absent	Absent	3	5	Absent	II	3-5

Latin Name	Common Name	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Frequency	Range
Prunella vulgaris	selfheal	2	1	Absent	Absent	Absent	II	1-2
Pseudoscleropodium purum	neat feather-moss	Absent	Absent	5	3	Absent	II	3-5
Arctium minus	lesser burdock	Absent	Absent	Absent	Absent	1	I	1
Cerastium fontanum	common mouse-ear	1	Absent	Absent	Absent	Absent	I	1
Festuca rubra	red fescue	Absent	Absent	Absent	Absent	7	I	7
Holcus lanatus	Yorkshire-fog	Absent	2	Absent	Absent	Absent	I	2
Hypochaeris radicata	cat's-ear	Absent	Absent	1	Absent	Absent	I	1
Lolium perenne	perennial rye-grass	Absent	2	Absent	Absent	Absent	I	2
Lotus pedunculatus	greater bird's-foot-trefoil	Absent	Absent	Absent	Absent	4	I	4
Malva moschata	musk-mallow	Absent	Absent	2	Absent	Absent	I	2
Papaver rhoeas	common poppy	Absent	Absent	Absent	1	Absent	I	1
Silene latifolia	white campion	Absent	Absent	Absent	Absent	3	I	3
Sonchus oleraceus	smooth sow-thistle	Absent	2	Absent	Absent	Absent	I	2
Tanacetum vulgare	tansy	Absent	Absent	Absent	4	Absent	I	4
Trifolium campestre	hop trefoil	Absent	Absent	2	Absent	Absent	I	2
Verbascum pulverulentum	hoary mullein	Absent	5	Absent	Absent	Absent	I	5
Vulpia myuros	rat's-tail fescue	Absent	1	Absent	Absent	Absent	I	1
Filago germanica	common cudweed	4	Absent	Absent	Absent	Absent	I	4

NVC Community Similarity Matches

MATCH Coefficients	%
MG1d	43.6
MG1a	42.5
MG1	41.1
MG1e	38.8
MG5b	38.4

Table B: 3 – Quadrat data for G7 grassland (horsetail-dominated area)

- Quadrat 1 - TG1375415463
- Quadrat 2 - TG1376415462
- Quadrat 3 - TG1378015444
- Quadrat 4 - TG1379815430
- Quadrat 5 - TG1381115418

Latin Name	Common Name	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Frequency	Range
Agrostis stolonifera	creeping bent	10	10	9	9	8	V	8-10
Equisetum palustre	marsh horsetail	9	9	8	8	8	V	8-9
Phalaris arundinacea	reed canary-grass	2	3	3	1	3	V	1-3
Glyceria fluitans	floating sweet-grass	3	Absent	1	5	4	IV	1-5
Potentilla anserina	silverweed	Absent	6	7	Absent	8	III	6-8
Poa trivialis	rough meadow-grass	Absent	Absent	Absent	5	5	II	5
Ranunculus acris	meadow buttercup	2	Absent	3	Absent	Absent	II	2-3
Rumex obtusifolius	broad-leaved dock	2	4	Absent	Absent	Absent	II	2-4
Trifolium repens	white clover	Absent	3	Absent	1	Absent	II	1-3
Alopecurus geniculatus	marsh foxtail	Absent	Absent	Absent	4	Absent	I	4
Cardamine pratensis	cuckoo-flower	1	Absent	Absent	Absent	Absent	I	1
Carex hirta	hairy sedge	Absent	Absent	3	Absent	Absent	I	3
Cirsium arvense	creeping thistle	2	Absent	Absent	Absent	Absent	I	2
Festuca rubra	red fescue	Absent	Absent	3	Absent	Absent	I	3

NVC Community Similarity Matches

MATCH Coefficients	%
MG10a	51.2
MG13	48.1
MG10	47.8
MG10b	44.3
MG11a	42.2

Table B: 4 – Quadrat data for G7 grassland (grass-dominated area)

- Quadrat 1 - TG1384115343
- Quadrat 2 - TG1285715343
- Quadrat 3 - TG1385515364
- Quadrat 4 - TG1385415876
- Quadrat 5 - TG1387015380

Latin Name	Common Name	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Frequency	Range
Bromus hordeaceus	soft-brome	8	8	8	8	7	V	7-8
Festuca rubra	red fescue	8	5	3	5	2	V	2-8
Geranium molle	dove's-foot crane's-bill	3	2	3	2	3	V	2-3
Lolium perenne	perennial rye-grass	7	4	3	2	5	V	2-7
Capsella bursa-pastoris	shepherd's-purse	Absent	3	4	3	3	IV	3-4
Dactylis glomerata	cock's-foot	Absent	4	5	7	6	IV	4-7
Holcus lanatus	Yorkshire-fog	3	6	2	2	Absent	IV	2-6
Achillea millefoilum	yarrow	5	Absent	Absent	5	3	III	3-5
Geranium dissectum	cut-leaved crane's-bill	Absent	3	2	Absent	2	III	2-3
Hypochaeris radicata	cat's-ear	2	Absent	2	Absent	3	III	2-3
Jacobaea vulgaris	common ragwort	Absent	6	Absent	7	6	III	6-7
Taraxacum officinale agg.	dandelion	3	Absent	1	Absent	Absent	II	1-3
Carduus nutans	musk thistle	Absent	2	Absent	Absent	Absent	I	2
Cerastium fontanum	common mouse-ear	Absent	Absent	Absent	Absent	2	I	2
Phleum pratense	timothy	Absent	Absent	3	Absent	Absent	I	3
Ranunculus acris	meadow buttercup	Absent	2	Absent	Absent	Absent	I	2

Latin Name	Common Name	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Frequency	Range
Trifolium arvense	hare's-foot clover	Absent	Absent	Absent	Absent	1	I	1
Trifolium dubium	lesser trefoil	Absent	Absent	Absent	Absent	3	I	3
Trifolium repens	white clover	Absent	Absent	Absent	4	Absent	I	4
Urtica dioica	common nettle	2	Absent	Absent	Absent	Absent	I	2

NVC Community Similarity Matches

MATCH Coefficients	%
MG7e	46.1
MG7a	45.6
MG7f	45.1
MG1a	43.5
MG6	42.9

Table B: 5 – Quadrat data for G9 grassland

- Quadrat 1 - TG1370315203
- Quadrat 2 - TG1370415221
- Quadrat 3 - TG1869615238
- Quadrat 4 - TG1367615246
- Quadrat 5 - TG1365015260

Latin Name	Common Name	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Frequency	Range
Arrhenatherum elatius	false oat-grass	8	8	9	8	8	V	8-9
Centaurea nigra	common knapweed	4	5	2	2	4	V	2-5
Dactylis glomerata	cock's-foot	7	5	3	4	3	V	3-7
Festuca rubra	red fescue	6	7	5	6	4	V	4-7
Jacobaea vulgaris	common ragwort	4	5	6	7	6	V	4-7
Lotus corniculatus	common bird's-foot-trefoil	4	4	5	6	7	V	4-7
Schedonorus pratensis	meadow fescue	6	7	5	7	6	V	5-7
Geranium molle	dove's-foot crane's-bill	Absent	1	2	1	2	IV	1-2
Plantago lanceolata	ribwort plantain	3	4	3	4	Absent	IV	3-4
Holcus lanatus	Yorkshire-fog	6	4	Absent	2	Absent	III	2-6
Hypochaeris radicata	cat's-ear	Absent	4	Absent	2	6	III	2-6
Scorzoneroides autumnalis	autumn hawkbit	2	3	Absent	Absent	3	III	2-3
Arenaria serpyllifolia	thyme-leaved sandwort	Absent	Absent	Absent	3	3	II	3
Leucanthemum vulgare	oxeye daisy	5	Absent	Absent	5	Absent	II	5
Malva moschata	musk-mallow	Absent	Absent	2	Absent	2	II	2

Latin Name	Common Name	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Frequency	Range
Trifolium campestre	hop trefoil	5	Absent	Absent	6	Absent	II	5-6
Medicago lupulina	black medick	Absent	Absent	2	Absent	Absent	I	2
Phleum pratense	timothy	Absent	Absent	3	Absent	Absent	I	3
Trifolium arvense	hare's-foot clover	Absent	Absent	Absent	Absent	1	I	1
Trifolium pratense	red clover	Absent	2	Absent	Absent	Absent	I	2

NVC Community Similarity Matches

MATCH Coefficients	%
MG1e	39.0
MG1a	38.1
MG9b	38.1
MG5	36.7
MG1	36.3

Table B: 6 – Quadrat data for G12 grassland

- Quadrat 1 - TG1192414552
- Quadrat 2 - TG1189714531
- Quadrat 3 - TG1186914501
- Quadrat 4 - TG1184414483
- Quadrat 5 - TG1180114449

Latin Name	Common Name	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Frequency	Range
Achillea millefolium	Yarrow	7	8	8	7	7	V	7-8
Arrhenatherum elatius	false oat-grass	7	4	2	4	3	V	2-7
Centaurea nigra	common knapweed	5	6	7	8	7	V	5-8
Daucus carota	wild carrot	4	3	5	6	3	V	3-6
Festuca rubra	red fescue	9	8	8	7	7	V	7-9
Holcus lanatus	Yorkshire-fog	6	8	9	8	7	V	6-9
Jacobaea vulgaris	common ragwort	4	3	6	4	3	V	3-6
Leucanthemum vulgare	oxeye daisy	6	8	7	8	8	V	7-8
Lotus corniculatus	common bird's-foot-trefoil	3	5	6	2	4	V	2-6
Cynosurus cristatus	crested dog's-tail	5	4	Absent	5	5	IV	4-5
Artemisia vulgaris	mugwort	3	Absent	2	Absent	2	III	2-3
Urtica dioica	common nettle	2	Absent	2	2	Absent	III	2
Geranium molle	dove's-foot crane's-bill	Absent	Absent	2	Absent	2	II	2
Onobrychis viciifolia	sainfoin	Absent	1	Absent	Absent	3	II	1-3
Rumex obtusifolius	broad-leaved dock	3	Absent	2	Absent	Absent	II	2-3
Agrostis stolonifera	creeping bent	5	Absent	Absent	Absent	Absent	I	5

Latin Name	Common Name	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Frequency	Range
Filago germanica	common cudweed	Absent	Absent	2	Absent	Absent	I	2

NVC Community Similarity Matches

MATCH Coefficients	%
MG1	40.0
MG1e	39.8
MG1b	35.0
MG1a	34.9
MG5b	33.8

Table B: 7 – Quadrat data for G13 grassland

- Quadrat 1 - TG1162414388
- Quadrat 2 - TG1161314378
- Quadrat 3 - TG1160514368
- Quadrat 4 - TG1159414359
- Quadrat 5 - TG1158114343

Latin Name	Common Name	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Frequency	Range
Agrostis capillaris	common bent	6	7	9	9	9	V	6-9
Holcus lanatus	Yorkshire-fog	6	7	8	9	7	V	6-9
Hypochaeris radicata	cat's-ear	8	7	8	7	8	V	7-8
Poa pratensis	smooth meadow-grass	4	3	3	1	2	V	1-4
Rumex acetosella	sheep's sorrel	5	6	6	7	6	V	5-7
Cerastium fontanum	common mouse-ear	3	2	4	2	Absent	IV	2-4
Lolium perenne	perennial rye-grass	6	2	3	Absent	2	IV	2-6
Poa trivialis	rough meadow-grass	5	1	2	1	Absent	IV	1-5
Vulpia bromoides	squirrel-tail fescue	7	8	Absent	6	Absent	III	6-8
Anthoxanthum odoratum	sweet vernal grass	Absent	2	1	Absent	6	III	1-6
Ranunculus repens	creeping buttercup	Absent	Absent	3	4	6	III	3-6
Scorzoneroides autumnalis	autumn hawkbit	2	1	2	Absent	Absent	III	1-2
Sonchus oleraceus	smooth sow-thistle	Absent	1	3	Absent	3	III	1-3
Trifolium repens	white clover	4	3	Absent	1	Absent	III	1-4
Jacobaea vulgaris	common ragwort	1	2	Absent	Absent	Absent	II	1-2
Taraxacum officinale agg.	dandelion	Absent	2	3	Absent	Absent	II	2-3

Latin Name	Common Name	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Frequency	Range
Festuca rubra	red fescue	Absent	Absent	Absent	5	Absent	I	5
Trifolium dubium	lesser trefoil	3	Absent	Absent	Absent	Absent	I	3

NVC Community Similarity Matches

MATCH Coefficients	%
MG6b	53.6
MG6	49.7
MG7f	47.7
MG7c	46.7
MG7b	46.6

Table B: 8 – Quadrat data for G14 grassland

- Quadrat 1 - TG1136913747
- Quadrat 2 - TG1135613762
- Quadrat 3 - TG1134113781
- Quadrat 4 - TG1133313794
- Quadrat 5 - TG1131613807

Latin Name	Common Name	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Frequency	Range
Dactylis glomerata	cock's-foot	5	7	9	7	8	V	5-9
Holcus lanatus	Yorkshire-fog	9	7	6	9	8	V	6-9
Jacobaea vulgaris	common ragwort	4	6	8	7	8	V	4-8
Achillea millefolium	yarrow	Absent	3	2	2	2	IV	2-3
Cirsium arvense	creeping thistle	3	4	Absent	Absent	2	III	2-4
Plantago lanceolata	ribwort plantain	5	Absent	8	2	Absent	III	2-8
Trifolium campestre	hop trefoil	3	5	6	Absent	Absent	III	3-6
Arrhenatherum elatius	false oat-grass	Absent	Absent	4	Absent	2	II	2-4
Artemisia vulgaris	mugwort	Absent	5	Absent	7	Absent	II	5-7
Bromus hordeaceus	soft-brome	Absent	Absent	Absent	6	3	II	3-6
Cerastium fontanum	common mouse-ear	Absent	Absent	Absent	2	2	II	2
Erodium cicutarium	common stork's-bill	1	4	Absent	Absent	Absent	II	1-4
Vicia sativa	common vetch	Absent	Absent	Absent	3	3	II	3
Vulpia bromoides	squirrel-tail fescue	Absent	4	Absent	5	Absent	II	4-5
Vulpia myuros	rat's-tail fescue	7	7	Absent	Absent	Absent	II	7
Agrostis stolonifera	creeping bent	Absent	Absent	Absent	Absent	3	I	3

Latin Name	Common Name	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Frequency	Range
Anisantha sterilis	barren brome	Absent	3	Absent	Absent	Absent	I	3
Ervilla hirsuta	hairy tare	Absent	Absent	Absent	Absent	2	I	2
Festuca ovina	sheep's fescue	Absent	Absent	Absent	4	Absent	I	4
Hypochaeris radicata	cat's-ear	Absent	Absent	Absent	Absent	5	I	5
Rumex crispus	curled dock	Absent	Absent	Absent	1	Absent	I	1
Silene latifolia	white campion	Absent	Absent	Absent	2	Absent	I	2
Sonchus asper	prickly sow-thistle	Absent	Absent	Absent	Absent	3	I	3
Urtica dioica	common nettle	Absent	Absent	Absent	2	Absent	I	2

NVC Community Similarity Matches

MATCH Coefficients	%
MG1d	44.1
MG1b	43.3
MG1a	43.1
MG1	42.7
MG9b	37.7

Table B: 9 – Quadrat data for G16 grassland (rush-dominated area)

- Quadrat 1 - TG1047813393
- Quadrat 2 - TG1048813386
- Quadrat 3 - TG1051413376
- Quadrat 4 - TG1052913350
- Quadrat 5 - TG1053713330

Latin Name	Common Name	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Frequency	Range
Glechoma hederacea	ground-ivy	2	2	2	2	4	V	2-4
Holcus lanatus	Yorkshire-fog	6	5	7	3	4	V	3-7
Juncus acutiflorus	sharp-flowered rush	8	8	8	9	9	V	8-9
Poa trivialis	rough meadow-grass	5	6	6	5	6	V	5-6
Ranunculus repens	creeping buttercup	6	4	2	2	2	V	2-6
Stellaria graminea	lesser stitchwort	3	3	2	2	2	V	2-3
Carex leporina	oval sedge	1	3	2	4	Absent	IV	1-4
Cirsium palustre	marsh thistle	Absent	2	1	5	2	IV	1-5
Jacobaea vulgaris	common ragwort	1	Absent	3	1	4	IV	1-4
Lotus pedunculatus	greater bird's-foot-trefoil	Absent	2	1	6	5	IV	1-6
Dactylis glomerata	cock's-foot	Absent	1	5	Absent	4	III	1-5
Glyceria fluitans	floating sweet-grass	4	3	Absent	5	Absent	III	3-5
Rubus fruticosus agg.	bramble	1	1	2	Absent	Absent	III	1-2
Silene dioica	red campion	Absent	2	1	Absent	1	III	1-2

Latin Name	Common Name	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Frequency	Range
Bromus hordeaceus	soft-brome	2	Absent	Absent	Absent	1	II	1-2
Juncus effusus	soft rush	Absent	Absent	1	3	Absent	II	1-3
Mentha aquatica	water mint	Absent	Absent	Absent	6	5	II	5-6
Pteridium aquilinum	bracken	Absent	2	4	Absent	Absent	II	2-4
Quercus robur	pedunculate oak	Absent	1	1	Absent	Absent	II	1
Ranunculus flammula	lesser spearwort	Absent	Absent	Absent	7	5	II	5-7
Rumex acetosa	common sorrel	Absent	Absent	2	2	Absent	II	2
Rumex obtusifolius	broad-leaved dock	2	3	Absent	Absent	Absent	II	2-3
Stellaria media	common chickweed	2	Absent	Absent	Absent	2	II	2
Anisantha sterilis	barren brome	Absent	Absent	1	Absent	Absent	I	1
Arrhenatherum elatius	false oat-grass	Absent	1	Absent	Absent	Absent	I	1
Carex hirta	hairy sedge	Absent	Absent	2	Absent	Absent	I	2
Galium aparine	cleavers	Absent	2	Absent	Absent	Absent	I	2
Hypericum tetrapterum	square-stalked st. john's-wort	Absent	Absent	Absent	Absent	1	I	1
Juncus inflexus	hard rush	Absent	Absent	1	Absent	Absent	I	1
Luzula campestris	field wood-rush	Absent	Absent	Absent	Absent	2	I	2
Trifolium dubium	lesser trefoil	Absent	2	Absent	Absent	Absent	I	2
Veronica chamaedrys	germander speedwell	Absent	Absent	Absent	Absent	4	I	4

NVC Community Similarity Matches

MATCH Coefficients	%
M23a	36.8
M23	36.7
M23b	34.4
M27c	33.7
M27	33.2

Table B: 10 – Quadrat data for G16 grassland (grass-dominated area)

- Quadrat 1 - TG1054513321
- Quadrat 2 - TG1052513337
- Quadrat 3 - TG1050813369

Latin Name	Common Name	Quadrat 1	Quadrat 2	Quadrat 3	Frequency	Range
Arrhenatherum elatius	False Oat-grass	6	3	6	V	3-6
Cirsium palustre	Marsh Thistle	3	1	1	V	1-3
Glechoma hederacea	Ground-ivy	4	3	3	V	3-4
Holcus lanatus	Yorkshire-fog	5	6	5	V	5-6
Jacobaea vulgaris	Common Ragwort	4	6	5	V	4-6
Lolium perenne	Perennial Rye-grass	3	5	7	V	3-7
Ranunculus repens	Creeping Buttercup	4	3	3	V	3-4
Rumex obtusifolius	Broad-leaved Dock	2	3	4	V	2-4
Anthoxanthum odoratum	Sweet Vernal Grass	Absent	4	2	IV	2-4
Bromus hordeaceus	Soft-brome	5	6	Absent	IV	5-6
Cirsium arvense	Creeping Thistle	4	Absent	6	IV	4-6
Cirsium vulgare	Spear Thistle	1	3	Absent	IV	1-3
Heracleum sphondylium	Hogweed	2	Absent	2	IV	2
Poa trivialis	Rough Meadow-grass	7	Absent	2	IV	2-7
Pteridium aquilinum	Bracken	Absent	2	3	IV	2-3
Silene dioica	Red Campion	3	Absent	2	IV	2-3
Stellaria media	Common Chickweed	2	Absent	3	IV	2-3

Latin Name	Common Name	Quadrat 1	Quadrat 2	Quadrat 3	Frequency	Range
Agrostis stolonifera	Creeping Bent	3	Absent	Absent	II	3
Cerastium fontanum	Common Mouse-ear	Absent	Absent	2	II	2
Chaerophyllum temulum	Rough Chervil	4	Absent	Absent	II	4
Cynosurus cristatus	Crested Dog's-tail	Absent	Absent	3	II	3
Dactylis glomerata	Cock's-foot	Absent	Absent	3	II	3
Myosotis arvensis	Field Forget-me-not	1	Absent	Absent	II	1
Quercus robur	Pedunculate Oak	Absent	Absent	1	II	1
Rumex acetosa	Common Sorrel	Absent	Absent	2	II	2
Sonchus asper	Prickly Sow-thistle	2	Absent	Absent	II	2
Taraxacum officinale agg.	Dandelion	Absent	Absent	1	II	1
Urtica dioica	Common Nettle	3	Absent	Absent	II	3
Vulpia bromoides	Squirrel-tail Fescue	Absent	2	Absent	II	2

NVC Community Similarity Matches

MATCH Coefficients	%
MG1c	43.0
MG1b	40.8
MG1a	40.3
MG1	39.2
MG7b	37.2

Table B: 11 – Quadrat data for G17 grassland

- Quadrat 1 - TG1042613243
- Quadrat 2 - TG1043313297
- Quadrat 3 - TG1039913317
- Quadrat 4 - TG1038713378
- Quadrat 5 - TG1035113402

Latin Name	Common Name	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Frequency	Range
Cynosurus cristatus	crested dog's-tail	4	8	9	8	4	V	4-9
Dactylis glomerata	cock's-foot	4	2	3	2	5	V	2-5
Festuca rubra	red fescue	8	2	7	7	3	V	2-8
Holcus lanatus	Yorkshire-fog	6	5	6	6	2	V	2-6
Lolium perenne	perennial rye-grass	9	9	8	9	9	V	8-9
Arrhenatherum elatius	false oat-grass	3	2	3	Absent	Absent	III	2-3
Bromus hordeaceus	soft-brome	Absent	2	Absent	2	3	III	2-3
Urtica dioica	common nettle	3	2	Absent	2	Absent	III	2-3
Veronica persica	common field-speedwell	3	Absent	Absent	3	Absent	II	3
Anthoxanthum odoratum	sweet vernal grass	Absent	Absent	2	Absent	Absent	I	2
Geranium molle	dove's-foot crane's-bill	Absent	Absent	Absent	Absent	2	I	2
Rubus fruticosus agg.	bramble	Absent	Absent	Absent	1	Absent	I	1
Stellaria graminea	lesser stitchwort	Absent	3	Absent	Absent	Absent	I	3
Trifolium dubium	lesser trefoil	Absent	Absent	Absent	2	Absent	I	2
Vulpia bromoides	squirrel-tail fescue	Absent	6	Absent	Absent	Absent	I	6

NVC Community Similarity Matches

MATCH Coefficients	%
MG6	44.3
MG6b	43.0
MG6a	43.0
MG9b	39.4
MG6c	38.7

Table B: 12 – Quadrat data for G20 grassland

- Quadrat 1 - TG0995912671
- Quadrat 2 - TG0995212699
- Quadrat 3 - TG0994912667

Latin Name	Common Name	Quadrat 1	Quadrat 2	Quadrat 3	Frequency	Range
Arrhenatherum elatius	False Oat-grass	9	9	6	V	6-9
Cirsium arvense	Creeping Thistle	2	3	2	V	2-3
Dactylis glomerata	Cock's-foot	8	6	8	V	6-8
Festuca rubra	Red Fescue	4	7	8	V	4-8
Convolvulus arvensis	Field Bindweed	3	6	7	V	3-7
Holcus lanatus	Yorkshire-fog	7	6	6	V	6-7
Ranunculus repens	Creeping Buttercup	5	3	6	V	3-6
Jacobaea vulgaris	Common Ragwort	Absent	1	2	IV	1-2
Centaurea nigra	Common Knapweed	Absent	Absent	2	II	2
Veronica persica	Common Field-speedwell	6	Absent	Absent	II	6
Cynosurus cristatus	Crested Dog's-tail	Absent	Absent	2	II	2
Lolium perenne	Perennial Rye-grass	Absent	Absent	4	II	4
Plantago lanceolata	Ribwort Plantain	Absent	Absent	5	II	5
Rumex crispus	Curled Dock	2	Absent	Absent	II	2
Rumex obtusifolius	Broad-leaved Dock	Absent	Absent	2	II	2

NVC Community Similarity Matches

MATCH Coefficients	%
MG9b	54.2
MG1a	50.8
MG1b	48.8
MG1c	46.7
MG9	45.6

Table B: 13 – Quadrat data for G21 grassland

- Quadrat 1 - TG0992815269
- Quadrat 2 - TG0991412569
- Quadrat 3 - TG0991712547
- Quadrat 4 - TG0990312546
- Quadrat 5 - TG0989512552

Latin Name	Common Name	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Frequency	Range
Cynosurus cristatus	crested dog's-tail	7	8	9	9	8	V	7-9
Festuca rubra	red fescue	5	8	5	4	3	V	3-8
Holcus lanatus	Yorkshire-fog	8	7	6	4	4	V	4-8
Leucanthemum vulgare	oxeye daisy	5	6	4	7	7	V	4-7
Lolium perenne	perennial rye-grass	8	4	5	6	5	V	4-8
Poa trivialis	rough meadow-grass	7	6	2	2	2	V	2-7
Schedonorus pratensis	meadow fescue	6	4	3	5	5	V	3-6
Trifolium repens	white clover	3	5	5	8	7	V	3-8
Ranunculus repens	creeping buttercup	4	Absent	6	6	Absent	III	4-6
Rumex crispus	curled dock	2	3	Absent	Absent	4	III	2-4
Trifolium campestre	hop trefoil	2	3	5	Absent	Absent	III	2-5
Arrhenatherum elatius	false oat-grass	6	Absent	Absent	Absent	2	II	2-6
Helminthotheca echioides	bristly oxtongue	Absent	Absent	2	Absent	3	II	2-3
Cirsium arvense	creeping thistle	1	Absent	Absent	Absent	Absent	I	1
Fraxinus excelsior	ash	Absent	Absent	Absent	Absent	3	I	3
Jacobaea erucifolia	hoary ragwort	Absent	2	Absent	Absent	Absent	I	2

Latin Name	Common Name	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Frequency	Range
Jacobaea vulgaris	common ragwort	Absent	Absent	Absent	Absent	3	I	3
Vicia sativa	common vetch	Absent	Absent	1	Absent	Absent	I	1

NVC Community Similarity Matches

MATCH Coefficients	%
MG6a	45.7
MG6	44.6
MG7b	43.8
MG10b	42.7
MG6b	41.8

Table B: 14 – Quadrat data for W1 woodland – Canopy

- Quadrat 1 - TG1350315327
- Quadrat 2 - TG1351515344
- Quadrat 3 - TG1347915357
- Quadrat 4 - TG1344815366
- Quadrat 5 - TG1343915349

Latin Name	Common Name	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Frequency	Range
Acer pseudoplatanus	sycamore	7	7	7	7	7	V	7
Fagus sylvatica	beech	4	4	4	4	4	V	4
Fraxinus excelsior	Ash	4	4	4	4	4	V	4
Quercus robur	pedunculate oak	6	6	6	6	6	V	6

NVC Community Similarity Matches

MATCH Coefficients	%
W12a	37.6
W12	36.9
W8d	35.4
W8e	35.1
W8b	34.2

Table B: 15 – Quadrat data for W1 woodland – Understorey

- Quadrat 1 - TG1350315327
- Quadrat 2 - TG1351515344
- Quadrat 3 - TG1347915357
- Quadrat 4 - TG1344815366
- Quadrat 5 - TG1343915349

Latin Name	Common Name	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Frequency	Range
Corylus avellana	hazel	Absent	Absent	Absent	5	Absent	I	5

NVC Community Similarity Matches

MATCH Coefficients	%
W12a	37.6
W12	36.9
W8d	35.4
W8e	35.1
W8b	34.2

Table B: 16 – Quadrat data for W1 woodland – Ground Layer

- Quadrat 1 - TG1350315327
- Quadrat 2 - TG1351515344
- Quadrat 3 - TG1347915357
- Quadrat 4 - TG1344815366
- Quadrat 5 - TG1343915349

Latin Name	Common Name	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Frequency	Range
Acer pseudoplatanus	sycamore	3	3	3	3	3	V	3
Adoxa moschatellina	moschatel	3	7	2	7	3	V	2-7
Galium aparine	cleavers	7	3	5	6	6	V	3-7
Glechoma hederacea	ground-ivy	4	3	3	3	4	V	3-4
Mercurialis perennis	dog's mercury	9	9	9	7	4	V	4-9
Veronica montana	wood speedwell	Absent	5	6	3	8	IV	3-8
Ficaria verna	lesser celandine	Absent	2	Absent	2	Absent	II	2
Galanthus nivalis	snowdrop	Absent	3	Absent	3	Absent	II	3
Silene dioica	red campion	Absent	2	Absent	3	Absent	II	2-3
Anemone nemorosa	wood anemone	Absent	Absent	1	Absent	Absent	I	1
Anthriscus sylvestris	cow parsley	Absent	2	Absent	Absent	Absent	I	2
Stachys sylvatica	hedge woundwort	3	Absent	Absent	Absent	Absent	I	3

NVC Community Similarity Matches

MATCH Coefficients	%
W12a	37.6
W12	36.9
W8d	35.4
W8e	35.1
W8b	34.2

Table B: 17 – Quadrat data for W8 woodland (area A) – Canopy

- Quadrat 1 - TG1066813383
- Quadrat 2 - TG1067513348
- Quadrat 3 - TG1064013328
- Quadrat 4 - TG1061413348
- Quadrat 5 - TG1058113382

Latin Name	Common Name	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Frequency	Range
Acer pseudoplatanus	sycamore	9	9	9	9	9	V	9
Betula pendula	silver birch	3	3	3	3	3	V	3
Fagus sylvatica	beech	5	5	5	5	5	V	5
Pinus sylvestris	scots pine	3	3	3	3	3	V	3
Quercus robur	pedunculate oak	6	6	6	6	6	V	6

NVC Community Similarity Matches

MATCH Coefficients	%
W10a	45.8
W10	42.5
W10d	41.7
W15a	40.8
W10b	38.7

Table B: 18 – Quadrat data for W8 woodland (area A) – Understorey

- Quadrat 1 - TG1066813383
- Quadrat 2 - TG1067513348
- Quadrat 3 - TG1064013328
- Quadrat 4 - TG1061413348
- Quadrat 5 - TG1058113382

Latin Name	Common Name	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Frequency	Range
Acer pseudoplatanus	sycamore	Absent	Absent	Absent	5	5	II	5
Ilex aquifolium	holly	Absent	1	Absent	Absent	Absent	I	1
Prunus laurocerasus	cherry laurel	2	Absent	Absent	Absent	Absent	I	2

NVC Community Similarity Matches

MATCH Coefficients	%
W10a	45.8
W10	42.5
W10d	41.7
W15a	40.8
W10b	38.7

Table B: 19 – Quadrat data for W8 woodland (area A) – Ground Layer

- Quadrat 1 - TG1066813383
- Quadrat 2 - TG1067513348
- Quadrat 3 - TG1064013328
- Quadrat 4 - TG1061413348
- Quadrat 5 - TG1058113382

Latin Name	Common Name	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Frequency	Range
Acer pseudoplatanus	sycamore	3	3	2	4	4	V	2-4
Kindbergia praelonga	common feather-moss	2	4	4	4	3	V	2-4
Rubus fruticosus agg.	bramble	9	9	8	8	8	V	8-9
Brachythecium rutabulum	rough-stalked feather-moss	Absent	2	2	Absent	2	III	2
Galium aparine	cleavers	Absent	Absent	2	2	2	III	2
Urtica dioica	common nettle	Absent	Absent	3	4	2	III	2-4
Hyacinthoides non-scripta	bluebell	Absent	1	2	Absent	Absent	II	1-2
Mnium hornum	swan's-neck thyme-moss	Absent	Absent	Absent	3	2	II	2-3
Pteridium aquilinum	bracken	Absent	Absent	Absent	7	3	II	3-7
Silene dioica	red campion	Absent	Absent	2	Absent	3	II	2-3
Arum maculatum	lords-and-ladies	Absent	Absent	4	Absent	Absent	I	4
Glechoma hederacea	ground-ivy	Absent	Absent	3	Absent	Absent	I	3
Ilex aquifolium	holly	Absent	Absent	Absent	Absent	1	I	1
Mercurialis perennis	dog's mercury	Absent	Absent	1	Absent	Absent	I	1

NVC Community Similarity Matches

MATCH Coefficients	%
W10a	45.8
W10	42.5
W10d	41.7
W15a	40.8
W10b	38.7

Table B: 20 – Quadrat data for W8 woodland (area B) – Canopy

- Quadrat 1 - TG1054713466
- Quadrat 2 - TG1054213477
- Quadrat 3 - TG1052613466
- Quadrat 4 - TG1054513444
- Quadrat 5 - TG1054513444

Latin Name	Common Name	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Frequency	Range
Acer pseudoplatanus	sycamore	4	4	4	4	4	V	4
Betula pendula	silver birch	4	4	4	4	4	V	4
Fagus sylvatica	beech	9	9	9	9	9	V	9
Quercus robur	pedunculate oak	5	5	5	5	5	V	5

NVC Community Similarity Matches

MATCH Coefficients	%
W10d	41.1
W10a	40.5
W16a	40.0
W10	38.9
W15	36.8

Table B: 21 – Quadrat data for W8 woodland (area B) – Understorey

- Quadrat 1 - TG1054713466
- Quadrat 2 - TG1054213477
- Quadrat 3 - TG1052613466
- Quadrat 4 - TG1054513444
- Quadrat 5 - TG1054513444

Latin Name	Common Name	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Frequency	Range
Acer pseudoplatanus	sycamore	4	3	Absent	4	3	IV	3-4
Prunus laurocerasus	cherry laurel	Absent	Absent	4	4	Absent	II	4
Betula pendula	silver birch	2	Absent	Absent	Absent	Absent	I	2
Salix caprea	goat willow	1	Absent	Absent	Absent	Absent	I	1
Sambucus nigra	elder	Absent	2	Absent	Absent	Absent	I	2

NVC Community Similarity Matches

MATCH Coefficients	%
W10d	41.1
W10a	40.5
W16a	40.0
W10	38.9
W15	36.8

Table B: 22 – Quadrat data for W8 woodland (area B) – Ground Layer

- Quadrat 1 - TG1054713466
- Quadrat 2 - TG1054213477
- Quadrat 3 - TG1052613466
- Quadrat 4 - TG1054513444
- Quadrat 5 - TG1054513444

Latin Name	Common Name	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Frequency	Range
Acer pseudoplatanus	sycamore	3	3	3	2	4	V	2-4
Brachythecium rutabulum	rough-stalked feather-moss	3	3	2	2	2	V	2-3
Rubus fruticosus agg.	bramble	9	9	9	9	7	V	7-9
Kindbergia praelonga	common feather-moss	3	2	2	Absent	Absent	III	2-3
Pteridium aquilinum	bracken	5	Absent	Absent	8	9	III	5-9
Fagus sylvatica	beech	Absent	1	Absent	1	Absent	II	1
Ilex aquifolium	holly	2	2	Absent	Absent	Absent	II	2
Campylopus flexuosus	rusty swan-neck moss	Absent	2	Absent	Absent	Absent	I	2
Dryopteris dilatata	broad buckler-fern	Absent	Absent	2	Absent	Absent	I	2
Galium aparine	cleavers	2	Absent	Absent	Absent	Absent	I	2
Larix decidua	larch	Absent	Absent	1	Absent	Absent	I	1
Lophocolea bidentata	bifid crestwort	Absent	Absent	3	Absent	Absent	I	3
Urtica dioica	common nettle	Absent	Absent	Absent	2	Absent	I	2

NVC Community Similarity Matches

MATCH Coefficients	%
W10d	41.1
W10a	40.5
W16a	40.0
W10	38.9
W15	36.8

Table B: 23 – Quadrat data for W8 woodland (area C) – Canopy

- Quadrat 1 - TG1049913447
- Quadrat 2 - TG1051113431
- Quadrat 3 - TG1050813424
- Quadrat 4 - TG1052113421
- Quadrat 5 - TG1053913420

Latin Name	Common Name	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Frequency	Range
Acer pseudoplatanus	sycamore	9	9	9	9	9	V	9
Pinus sylvestris	scots pine	2	2	2	2	2	V	2
Quercus robur	pedunculate oak	4	4	4	4	4	V	4

NVC Community Similarity Matches

MATCH Coefficients	%
W10a	43.0
W10	41.2
W10e	38.8
W10d	38.3
W10b	36.0

Table B: 24 – Quadrat data for W8 woodland (area C) – Understorey

- Quadrat 1 - TG1049913447
- Quadrat 2 - TG1051113431
- Quadrat 3 - TG1050813424
- Quadrat 4 - TG1052113421
- Quadrat 5 - TG1053913420

Latin Name	Common Name	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Frequency	Range
Acer pseudoplatanus	sycamore	3	4	5	5	4	V	3-5
Prunus laurocerasus	cherry laurel	Absent	5	5	Absent	Absent	II	5
Betula pendula	silver birch	4	Absent	Absent	Absent	Absent	I	4
Ilex aquifolium	holly	2	Absent	Absent	Absent	Absent	I	2
Sambucus nigra	elder	Absent	Absent	Absent	Absent	2	I	2

NVC Community Similarity Matches

MATCH Coefficients	%
W10a	43.0
W10	41.2
W10e	38.8
W10d	38.3
W10b	36.0

Table B: 25 – Quadrat data for W8 woodland (area C) – Ground Layer

- Quadrat 1 - TG1049913447
- Quadrat 2 - TG1051113431
- Quadrat 3 - TG1050813424
- Quadrat 4 - TG1052113421
- Quadrat 5 - TG1053913420

Latin Name	Common Name	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Frequency	Range
Acer pseudoplatanus	sycamore	3	2	3	4	3	V	2-4
Brachythecium rutabulum	rough-stalked feather-moss	2	1	1	4	3	V	1-4
Hyacinthoides non-scripta	bluebell	6	5	4	6	2	V	2-6
Kindbergia praelonga	common feather-moss	3	3	2	3	3	V	2-3
Rubus fruticosus agg.	bramble	7	6	7	9	9	V	6-9
Pteridium aquilinum	bracken	7	4	6	5	Absent	IV	4-7
Mnium hornum	swan's-neck thyme-moss	3	2	3	Absent	Absent	III	2-3
Hypnum cupressiforme	cypress-leaved plait-moss	2	Absent	2	Absent	Absent	II	2
Urtica dioica	common nettle	Absent	Absent	2	3	Absent	II	2-3
Arum maculatum	lords-and-ladies	Absent	Absent	3		Absent	I	3
Galium aparine	cleavers	Absent	Absent	Absent	Absent	2	I	2
Ilex aquifolium	holly	2	Absent	Absent	Absent	Absent	I	2
Silene dioica	red campion	Absent	Absent	3	Absent	Absent	I	3

NVC Community Similarity Matches

MATCH Coefficients	%
W10a	43.0
W10	41.2
W10e	38.8
W10d	38.3
W10b	36.0

Appendix C - Photographs

1: Grassland at G1 around attenuation pond

2: Grassland across field at G2

3: Nettle-dominated section of verge at Grassland G3

4: Grassland along verge at G3

5: Unopened flower spike of hoary mullein at Grassland G3

6: Grassland along verge at G4

7: Bee orchid on verge at Grassland G4

8: Wet ditch north of Grassland G5

9: Grassland at G5

10: River Wensum south of Grassland G5

11: Grassland at G6

12: Wet ditch south of Grassland G6

13: Dry grass-dominated area at Grassland G7

14: Marsh horsetail-dominated area at Grassland G7

15: Tufted hairgrass-dominated area at Grassland G7

16: Bracken patch at Grassland G8

17: False oat-grass-dominated area at Grassland G8

18: Tufted hairgrass-dominated area at Grassland G8

19: Grassland at G9

20: Grassland at G10

21: Grassland at G11

22: Nettle and grass strip at northern end of Grassland G12

23: Species-richer grassland at southern end of Grassland G12

24: Horse paddocks at G13 grassland

25: Artificial surface at Grassland G13

26: Grassland strip along Breck Road at G14

27: Central woodland glade at Grassland G15

28: Western edge of central glade with bracken

29: Southern section of central glade at Grassland G15

30: Eastern glade at Grassland G15

31: Stream at Foxburrow Meadow Grassland G16

32: Rush-dominated vegetation at Grassland G16

33: Grass-dominated vegetation at Grassland G16

34: Stand of greater pond sedge at Grassland G16

35: Grassland at G17

36: Grassland strips at G18

37: Grassland strips at G19

38: Grassland strips at G20

39: Grassland at G21

40: Woodland at south of Rose Carr Woodland (W1)

41: Woodland at north of Rose Carr (W1)

42: Ground flora at north of Rose Carr dominated by nettle and dog's-mercury

43: Wet woodland at Rose Carr

44: Conifer-dominated stand at Nursery Plantation Woodland (W2)

45: Western section of Spring Hills Woodland (W3)

46: Mixed deciduous stand at Spring Hills

47: Beech trees at Spring Hills

48: Conifers at Long Plantation Woodland (W4a)

49: Bluebells at Long Plantation Woodland (W4a)

50: Eastern boundary of Long Plantation Woodland (W4a)

51: Mature pedunculate oaks at Long Plantation Woodland (W4b)

52: Conifers at Long Plantation Woodland (W4b)

53: Trees to north of Ringland Lane Woodland (W5)

54: Trees to south of Ringland Lane Woodland (W5)

55: Sparse ground flora at Woodland W6

56: Typical oak woodland ground flora at Woodland W6

57: Northern edge of The Broadway Woodland (W7)

58: Variegated yellow archangel along northern edge of The Broadway Woodland (W7)

59: Mixed woodland along southern edge of The Broadway Woodland (W7)

60: Eastern end of southern edge of The Broadway Woodland (W7) with Scots pine plantation

61: Foxburrow Woodland (W8-Area A)

62: Foxburrow Woodland (W8-Area B)

63: Foxburrow Woodland (W8-Area C)

Appendix D – Indicator Species Lists

Species lists for lowland meadows and pastures in Norfolk

NVC MG5: *Cynosurus cristatus – Centaurea nigra* grassland. Includes frequent species associated with MG5a and MG5b, both of which are important sub-communities in Norfolk

Latin Name	Common Name
Achillea millefolium	yarrow
Agrostis capillaris	common bent
Anthoxanthum odoratum	sweet vernal-grass
Bellis perennis	daisy
Brachythecium rutabulum	rough-stalked feather-moss
Briza media	quaking-grass
Centaurea nigra	common knapweed
Cerastium fontanum	common mouse-ear
Cynosurus cristatus	crested dog's-tail
Dactylis glomerata	cock's-foot
Galium verum	lady's bedstraw
Festuca rubra	red fescue
Holcus lanatus	Yorkshire fog
Hypochaeris radicata	cat's-ear
Lathyrus pratensis	meadow vetchling
Leontodon hispidus	rough hawkbit
Leucanthemum vulgare	ox-eye daisy
Lolium perenne	perennial rye grass
Lotus corniculatus	common birdsfoot trefoil
Luzula campestris	field woodrush
Plantago lanceolata	ribwort plantain
Prunella vulgaris	self-heal
Ranunculus acris	meadow buttercup
Ranunculus bulbosus	bulbous buttercup
Rumex acetosa	sheep's sorrel
Scorzoneroides autumnalis	autumn hawkbit
Taraxacum officinale agg	dandelion
Trifolium pratense	red clover

Latin Name	Common Name
Trifolium repens	white clover
Trisetum flavescens	yellow oat-grass

NVC MG8: *Cynosurus cristatus – Caltha palustris* grassland

Latin Name	Common Name
Anthoxanthum odoratum	sweet vernal-grass
Caltha palustris	marsh marigold
Cerastium fontanum	common mouse-ear
Cynosurus cristatus	crested dog's-tail
Festuca rubra	red fescue
Holcus lanatus	Yorkshire fog
Poa trivialis	rough meadow-grass
Ranunculus acris	meadow buttercup
Rumex acetosa	common sorrel
Scorzoneroides autumnalis	autumn hawkbit
Trifolium repens	white clover

NVC MG11: *Festuca rubra – Agrostis stolonifera – Potentilla anserina* grassland. Includes frequent species associated with subcommunity MG11a

Latin Name	Common Name
Agrostis stolonifera	creeping bent
Festuca rubra	red fescue
Potentilla anserina	silverweed
Lolium perenne	perennial rye-grass
Holcus lanatus	Yorkshire fog
Trifolium repens	white clover
Cerastium fontanum	common mouse-ear

NVC MG12: *Schedonorus arundinaceus* grassland. Includes frequent species associated with MG12a and MG12b

Latin Name	Common Name
Agrostis stolonifera	creeping bent
Carex distans	distant sedge
Carex otrubae	false fox sedge
Eleocharis uniglumis	slender spike-rush

Latin Name	Common Name
Elymus athericus	sea couch
Elymus repens	common couch
Festuca rubra	red fescue
Glaux maritima	sea milkwort
Holcus lanatus	Yorkshire fog
Juncus gerardii	saltmarsh rush
Lolium perenne	perennial rye-grass
Oenanthe lachenalii	parsley water-dropwort
Potentilla anserina	silverweed
Phragmites australis	common reed
Ranunculus acris	meadow buttercup
Schedonorus arundinaceus	tall fescue
Scorzoneroides autumnalis	autumn hawkbit
Sonchus arvensis	perennial sow-thistle
Trifolium repens	white clover
Vicia cracca	tufted vetch

NVC MG13: *Agrostis stolonifera – Alopecurus geniculatus* grassland

Latin Name	Common Name
Agrostis stolonifera	creeping bent
Alopecurus geniculatus	marsh foxtail
Ranunculus repens	creeping buttercup
Holcus lanatus	Yorkshire fog
Poa trivialis	rough meadow-grass
Juncus effusus	soft rush
Glyceria fluitans	floating sweet-grass

Indicator species lists were also taken from the Natural England Farm Environment Plan (FEP) Manual Third Edition (2010). In the original document they can be found in Section 2 and included:

Table 1 - Semi-improved Grassland Indicator Species, located on page 71

Table 4 - Lowland Meadows BAP Habitat Indicator Species, located on page 74

Table 5 - Purple Moor-grass and Rush Pastures BAP Habitat Indicator Species, located on page 75.

62-64 Hills Road
Cambridge
CB2 1LA

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