



Shelton Road, Corby – Laydown Area Botanical Survey

May 2020

MVV Environment Ltd





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Plans

Drawing Numbers: 182835/17/dwg1 National Vegetation Classification Survey

Appendices

Appendix 1 Community species lists
Appendix 2 Quadrat data

Contact details can be found at the end of this document.

1.0 Introduction

Background

- 1.1 Keystone Ecology was instructed by MVV Environment Ltd to undertake a botanical survey of a proposed laydown area and compound at Shelton Road, Corby (Central Grid Reference: SP 91180 90912). It is understood the survey is required to support a planning application.
- 1.2 The Preliminary Ecological Appraisal (Keystone Ecology, 2020) identified the potential for 2 Priority Habitats (Habitats of Principle Importance (HPI) listed in Section 41 of the Natural Environment and Rural Communities (NERC) Act (2006) on site to be present on site (HPI Open Mosaic Habitats on Previously Developed Land and HPI Lowland Meadows). The botanical survey is therefore required to determine if the habitats qualify as HPI and if so ascertain the condition and value of them.
- 1.3 The laydown and compound area is required to facilitate the construction of an energy from waste facility immediately west of the site which has already been granted planning permission (planning reference: 19/00027/WASFUL).

Aims and Objectives

- 1.4 Aims and objectives of the field survey were as follows:
 - Map botanical communities (or mosaics and transitions thereof) and compile whole community species lists, using The National Vegetation Classification where possible;
 - To determine whether habitats present qualify as HPI and in what category.
 - Determine ecological value of botanical communities present, with reference to any Species of Principle Importance (SPI) listed in Section 41 of the Natural Environment and Rural Communities (NERC) Act (2006), Local Biodiversity Action Plan and regionally or locally important species;
 - Map the extent of Devil's-bit Scabious if present, the food plant of the Marsh Fritillary butterfly, identified as a potential constraint during Preliminary Ecological Appraisal of the site (Keystone Ecology, 2016);
 - Inform design to allow significant ecological effects to be avoided or minimised;
 - If significant effects cannot be avoided, to determine mitigation and/or compensation measures to ensure policy compliance.

Site Context

- 1.5 The site is located along the north-eastern perimeter of the Willowbrook Industrial Estate and comprises an area of marshy grassland and reed beds. The site is approximately 1.7 hectares in size. An industrial unit delineates the southern boundary. The west and northern boundaries are delineated by areas of broadleaved woodland, and a hedgerow runs down the length of the eastern boundary.

- 1.6 Large car forecourts lie to the west of the site, with numerous steel clad industrial units located to the south. The Corby Northern Orbital Road (CNOR) is under construction and is located to the north with habitats associated with a potential Local Wildlife Site (pLWS), associated with the former Tata Steelworks to the north-west. An area of broadleaved woodland lies between the site and the CNOR. Further areas of marshy grassland lie to the east with more industrial units lying further east.

Relevant Legislation and Policy¹

Protection Legislation

- 1.7 Under the Conservation of Habitats and Species (Amendment) Regulations 2012, it is illegal to deliberately pick, collect, uproot or destroy certain listed plant species Creeping Marshwort, Early Gentian, Fen Orchid, Floating-leaved Water Plantain, Killarney Fern, Lady's Slipper, Shore Dock, Slender Naiad and Yellow Marsh Saxifrage.
- 1.8 The Wildlife and Countryside Act 1981 (as amended) contains a list (Schedule 8) of endangered plants, which are protected against intentional picking, uprooting and destruction (unless a licence is obtained from the relevant authority, or the damage is a result of a lawful activity and could not reasonably have been avoided). These plants are also protected against sale.
- 1.9 In addition, there are 2 species (Bluebell in Britain and Primrose in Northern Ireland) which are listed for protection only against sale.
- 1.10 The Wildlife and Countryside Act 1981 (as amended) contains measures for preventing the establishment of non-native species which may be detrimental to native wildlife, prohibiting the planting of plants listed in Schedule 9 of the Act.

Protection Afforded by the Planning System

- 1.11 The National Planning Policy Framework (NPPF) sets out government policy regarding consideration of biodiversity in planning decisions. Under the NPPF the presence of a protected species is a material consideration when a planning authority is considering a development proposal that, if carried out, would be likely to result in harm to the species or its habitat.
- 1.12 The NPPF states that:

'When determining planning applications, local planning authorities should aim to conserve and enhance biodiversity by applying the following principles:

- *if significant harm resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;*

¹ Please note that this legal information is a summary and intended for general guidance only. The original documents should be consulted for definitive information. Web addresses providing access to the full text of these documents are given in the References Section.

- *proposed development on land within or outside a Site of Special Scientific Interest (SSSI) likely to have an adverse effect on a SSSI (either individually or in combination with other developments) should not normally be permitted. Where an adverse effect on the site's notified special interest features is likely, an exception should only be made where the benefits of the development, at this site, clearly outweigh both the impacts that it is likely to have on the features of the site that make it of special scientific interest and any broader impacts on the national network of SSSIs;*
 - *development proposals where the primary objective is to conserve or enhance biodiversity should be permitted;*
 - *opportunities to incorporate biodiversity in and around developments should be encouraged;*
 - *the following wildlife sites should be given the same protection as European sites: potential Special Protection Areas (SPA) and possible Special Areas of Conservation (SAC); listed or proposed Ramsar sites; and sites identified, or required, as compensatory measures for adverse effects on European sites, potential SPAs, possible SACs, and listed or proposed Ramsar sites'.*
- 1.13 Section 40 of the Natural Environment and Rural Communities Act 2006 (the NERC Act) places a legal duty on public bodies, including planning authorities, to 'have regard' to the conservation of biodiversity when carrying out their normal functions, which includes consideration of planning applications.
- 1.14 In compliance with Section 41 of the NERC Act, the Secretary of State has published a list of species and habitats considered to be of principal importance for conserving biodiversity in England under the UK Post-2010 Biodiversity Framework. This is referred to as the list of Species/Habitats of Principal Importance in England, of which there are 56 habitats (HPI) and 943 species (SPI), 214 of which of botanical species. The list is used to guide planning authorities in implementing their duty under the NERC Act.
- 1.15 A total 213 species of vascular plants are listed as SPI and 2 species of vascular plants are listed within the Local BAP Priority Species list for Northamptonshire (Northamptonshire Local Nature Partnership, 2015).

2.0 Methodology

Desk Study

- 2.1 As part of the Preliminary Ecological Appraisal (Keystone Ecology, 2020), Northamptonshire Biodiversity Records Centre (NBRC) was contacted for records of protected vascular and non-vascular plants within 2 kilometres of the proposed pipeline route. Information was received, and Natural England site designations accessed on 18th May 2018.
- 2.2 Web-resources (Natural England, 2016; Gov.uk 2016) were also searched for any European statutory sites designated for vascular and non-vascular plants and plant communities on site and within a 15 kilometre radius of the site boundary and any statutory and non-statutory sites designated for vascular and non-vascular plants and plant communities on site and within a 2 kilometre radius of the site boundary.

Field Survey and Evaluation

- 2.3 The field survey took place in dry weather on 15th May 2020.
- 2.4 A walk-over survey was undertaken of the proposed development footprint, including that of the proposed access tracks. The vegetation boundaries were mapped, and descriptions and higher plant species lists compiled for the plant community types present on site.
- 2.5 Supporting quadrats were taken (using the Domin scale to record cover), to aid plant community classification within the National Vegetation Classification (NVC) using published works (Rodwell, 1998a;1998b; 2008). All quadrats were 2m x 2m in size, were photographed, and mapped using GPS to +/- 4m.
- 2.6 The county (Wilson, 2014) and national status of each plant was noted, together with those listed as positive indicator species for lowland meadows (JNCC, 2004) or those on the local Biodiversity Action Plan (2015-2020). Common names are used in the text, with scientific names shown in Appendices 2 and 3.
- 2.7 Note that the species lists should not be considered fully comprehensive, and that the assessment of relative abundance of grass species was difficult due to the lack of flowering heads.
- 2.8 An ecological value has been assigned to each habitat type in accordance with the CIEEM guidelines (CIEEM, 2018) taking into account the results of both surveys.

Nomenclature

- 2.9 Vascular plants follow the nomenclature of the Botanical Society of the British Isles database (BSBI, 2007) with all other flora and fauna following the UK species inventory (Natural History Museum, 2016).

Limitations

- 2.10 The results of the survey and assessment work undertaken by Keystone Ecology are representative at the time of surveying.
- 2.11 Keystone Ecology staff and their sub-consultants will endeavour to identify the presence of protected species wherever possible on site, where this falls within the agreed scope of works.
- 2.12 Up to date standard methodologies will be used, which are accepted by Natural Resources Wales and other statutory conservation bodies. No responsibility will be accepted where these methodologies fail to identify all species on site. Keystone Ecology cannot take responsibility where Government, national bodies or industry subsequently modify standards.
- 2.13 Keystone Ecology cannot accept responsibility for data collected from third parties.
- 2.14 Botanical lists should be considered indicative and not fully comprehensive, and rarely-occurring or early or late-flowering species may have been missed.

3.0 Results and Evaluation

Desk Study

- 3.1 There are no European statutory sites designated for vascular plants or plant communities within 15 kilometres, no statutory or non-statutory sites designated for vascular plants or plant communities within 2 kilometres of the proposed development site.
- 3.2 There are no records of protected or SPI vascular plants within 500 metres of the proposed development site.

Botanical Survey Results

- 3.3 Refer to *Drawing 182835/17/dwg1* for a field map from the survey. Community species lists are in *Appendix 1*, and quadrat data in *Appendix 2*.

Eastern Area

- 3.4 The large field in the east of the site was unfenced to the road and bordered by a thick hedge and wire fence to the west. The ground was very dry and cracked at the time of survey and has received some recent disturbance during the nearby road building, with high levels of bare ground. There was evidence of grazing by Rabbits.
- 3.5 The development footprint supported a mosaic of vegetation types, the main boundaries of which have been approximately marked on the field map (refer to *Drawing 182835/17/dwg1*). These are described in turn below.

Bramble Areas

- 3.6 Low growing Bramble achieved locally high abundance over an estimated 5% of the footprint in the eastern compartment. These patches also contained a mixture of other plants, including a range of grasses, thistles, nettle and Coltsfoot. One quadrat (Q1) was taken in these stands, the data for which may be found in *Appendix 2*.

Continuous Grassland

- 3.7 Much (c. 45%) of the eastern compartment consisted of a more or less continuous cover grassland community. Here, grasses included Creeping and Common Bent-grass, Cock's-foot, Tufted Hair-grass, Meadow Fescue, Red Fescue, False Oat-grass and Soft Brome, in varying proportions. Herbs included abundant Ribwort Plantain, with frequent Creeping Cinquefoil, Oxeye Daisy and Coltsfoot. Two species of St John's-wort (hairy and perforated), Ragwort and Common Vetch were occasional, as were rushes. Some species, including Bird's-foot Trefoil occurred only in the finest swards – concentrated on the mound by the roundabout and the road verge. Agrimony was found in very small amounts on the road verge. There were occasional thistles throughout, and locally frequent Bramble.
- 3.8 One quadrat (Q2) was taken in these stands, the data for which may be found in *Appendix 2*.

Sparsely Vegetated Ground

- 3.9 An estimated 25% of the development footprint of the eastern compartment contained significant areas where the vegetation cover was relatively low. Here, the species composition was similar to that above, albeit with an estimated bare ground cover range of 50% to 80%.
- 3.10 One quadrat (Q3) was taken in these stands, the data for which may be found in *Appendix 2*.

Reed Areas

- 3.11 A further 25% of the eastern part of the footprint was dominated by Common Reed, despite the apparent dry conditions on the site, at least at the time of survey. Here reed was very abundant, of varying heights, up to approximately 1.5 metres. Below this there was a fairly dense layer of litter, but with species such as Oxeye Daisy, Prickly Oxetongue, Tufted Hair-grass, and thistles, still persisting.



Figure 1. Eastern field, showing reed dominated areas beyond sparsely vegetated ground.



Figure 2. Area of continuous grassland in the eastern compartment.

Western area

- 3.12 The proposed development includes an access route running through the western compartment, from Shelton Road. It passes very close to a mound, a derelict building frame and a vegetated stony bank.
- 3.13 The route runs through areas of sparsely vegetated ground with plants indicative of disturbance such as Coltsfoot and Ribwort Plantain, Rough Grassland with a mix of coarse grasses, stands of Common Reed, stands of Small Wood-reed with Hard Rush, and scrub. Other species present in the area include Yarrow, Field Forget-me-not, Oxeye Daisy, Perforate and Hairy of St John's-wort and Creeping Buttercup. A single plant of Columbine (a species on the county rare plants list which is uncommon in the wild in Britain) was found on the stony bank, but it is more likely that this is a garden escape, possibly from tipping, than a native occurrence. One Cowslip plant was recorded just outside the proposed route, while other Lowland Meadow indicator species were Common Knapweed and Bird's-foot Trefoil – present in very small amounts.

- 3.14 A species list for the track footprint is provided in *Appendix 1*, and one quadrat was taken here (see *Appendix 2*). There was evidence of Rabbits and significant numbers of deer active in the area.



Figure 3. West compartment looking along the route of the proposed access track, showing sparsely vegetated ground by the derelict building frame, the mound, with taller grassland and scrub beyond.

Hedges and Scrub

- 3.15 A wide, young, uniform-aged hedge ran along the boundary between the east and west compartments. This comprised a mix of Silver Birch, Grey Willow, Hawthorn, Ash and Alder, with a few relict tree guards suggesting relatively recent planting. The ground flora was open, with locally abundant Wood False-brome.

National Vegetation Classification (NVC)

- 3.16 None of the plant communities within the proposed development footprint fitted neatly into the NVC. At best there was only weak affinity to a number of different NVC communities, as

shown below. Due to the poor fit to the NVC, it was not considered appropriate to expand on this further in this report.

- MG1 *Arrhenatherum elatius* grassland
- MG5 *Cynosurus cristatus-Centaurea nigra* grassland
- MG9 *Holcus lanatus-Deschampsia cespitosa* grassland
- OV23 *Lolium perenne-Dactylis glomerata* open habitat community
- OV28 *Agrostis stolonifera-Ranunculus repens* open habitat community
- W24 *Rubus fruticosus-Holcus lanatus* underscrub

Overall Evaluation

- 3.17 No Nationally Rare or Scarce species or Species of Principal Importance were recorded during the survey. Additionally, no plant species listed on the county Rare Plants Register or Northamptonshire Biodiversity Action Plan (2015-2020) were found, and no Devil's-bit Scabious was noted.
- 3.18 Three species recorded are positive indicators for the HPI Lowland Meadows (JNCC), though only 1 of these (Oxeye Daisy) was widespread and it did not match the habitat very well. The more disturbed areas also had some characteristics of the HPI Open Mosaic Habitats on Previously Disturbed Land, although the land was not obviously a brownfield site, and the vegetation was not strongly matched to, nor contained any specialist or notable species for, this habitat type.
- 3.19 Whilst the plant communities present on site were tricky to place within the NVC, and did not meet the definition for any HPI, they did contain a significant diversity of higher plants, and a good mix of mesotrophic grasses. Species recorded included those indicative of unimproved, semi-natural conditions, such as the Lowland Meadow indicator species, but also such species as Black Medick, Common Reed and Wood Small-reed. The habitat was, therefore, considered to be of Local value.

4.0 Discussion and Recommendations

Potential Activities likely to generate Impacts

- 4.1 All habitats within the red line boundary will be cleared to facilitate the development resulting in the loss of 1.7 hectares of habitat of Local value. It is not confirmed yet whether the loss will be temporary or permanent.

Further Survey

- 4.2 The survey effort undertaken is considered sufficient to provide a robust assessment of botanical interest. Survey should only be repeated if the development is delayed by 2 years or more.

Design Considerations

- 4.3 Damage to habitat of Local botanical interest should be kept to a minimum, retaining as much existing habitat as possible.
- 4.4 Loss of habitat should preferably be temporary and vegetation communities present prior to works should be reinstated as close as possible to their original form. This may well prove possible using the residual seedbank and spread from adjacent unaffected areas. More proactive restoration techniques (such as the introduction of local-provenance seed) used in addition could result in enhanced botanical interest overall. Restored areas will require long term management and monitoring in order to maintain and enhance the restored flora.
- 4.5 It will be important for remaining and restored open areas to receive some management (cutting, livestock grazing or significant grazing from wild herbivores) to prevent development of dense scrub, and for the scattered areas of finer-grassland (e.g. on the road verge) to persist. There should be no addition of fertilisers or broad-spectrum herbicides, and planting with ornamental or non-native plants should be avoided.
- 4.6 If the habitat is not reinstated, its loss should be compensated for by enhancing the biodiversity interest, ideally to achieve a similar floristic composition to that being lost, on existing poorer quality habitat present within the current land ownership boundary. The requirement will be to create a larger area of equal value or the same area of greater value so that an increase in biodiversity is achieved overall.

5.0 References

Biodiversity Action Plan for Northamptonshire (2015-2020). Northamptonshire Local Nature Partnership.

CIEEM (2018) *Guidelines for Ecological Impact Assessment*. Available at: <https://cieem.net/resource/guidelines-for-ecological-impact-assessment-ecia/> [Accessed on: 1st July 2018]

Gov.uk (2016). *Find protected areas of countryside*. Available at: <https://www.gov.uk/check-your-business-protected-area> [Accessed on 1st July 2020].

JNCC (2004). Common Standards Monitoring Guidance for Lowland Grassland Habitats.

Keystone Ecology (2020). *Preliminary Ecological Appraisal*. Keystone Ecology: Tetbury.

Keystone Ecology (2016). *Preliminary Ecological Appraisal*. Keystone Ecology: Tetbury.

Natural England (2016). *Natural England GIS Digital Boundary Database*. Available at: http://www.gis.naturalengland.org.uk/pubs/gis/tech_ds.htm [Accessed on 1st July 2020].

Natural History Museum (2016). *UK Species Inventory*. Available at: <http://www.nhm.ac.uk/research-curation/scientific-resources/biodiversity/uk-biodiversity/uk-species/index.html> [Accessed on 1st July 2020].

Northamptonshire Local Nature Partnership (2015) Northamptonshire Local Biodiversity Action Plan. Available at: <https://www.northamptonshire.gov.uk/councilservices/environment-and-planning/planning/planning-policy/archaeology-biodiversity-and-landscape/documents/PDF%20Documents/Northamptonshire%20BAP%202015-2020.pdf> [Accessed on 1st July 2020]

Rodwell, J.S. (Ed.) (1998a). *British Plant Communities, Vol. 1: Woodlands and Scrub*. Cambridge University Press, Cambridge.

Rodwell, J.S. (Ed.) (1998b). *British Plant Communities, Vol. 3: Grasslands and Montane Communities* Cambridge University Press, Cambridge.

Rodwell, J.S. (Ed.) (2008). *British Plant Communities, Vol. 5: Maritime Communities and Vegetation of Open Habitats*. Cambridge University Press, Cambridge.

Wilson, R (2014). *Rare Plant Register of Northamptonshire and the Soke of Peterborough*. Northampton Flora Group and Robert Wilson Designs. Natural England (2016).

Web Addresses for Access to Full Legislation and Policy Text:

Conservation of Habitats and Species (Amendment) Regulations 2012:
<http://www.legislation.gov.uk/ukxi/2012/1927/contents/made>

Countryside and Rights of Way Act 2000:
<http://www.legislation.gov.uk/ukpga/2000/37/contents>

Habitats Directive:

http://ec.europa.eu/environment/nature/legislation/habitatsdirective/index_en.htm

Natural Environment and Rural Communities Act 2006:

<http://www.legislation.gov.uk/ukpga/2006/16/contents>

UK Post-2010 Biodiversity Framework:

<http://jncc.defra.gov.uk/page-6189>









Wildlife and Countryside Act 1981:

<http://www.legislation.gov.uk/ukpga/1981/69>

Plans



Key

-  Site boundary
-  Continuous grassland (unimproved/near natural)
-  Sparse grassland (50-80% bare ground)
-  Reed (Common)
-  Hedgerow (young mixed)
-  Scrub
-  Stone bank
-  Steel building framework

The continuous grassland contains areas of bramble scrub and small swaths which are more abundant in herbs

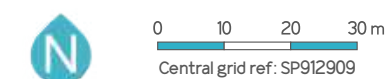
The sparse vegetation in the area north east of the hedgerow has a similar composition to the continuous grassland but with a greater proportion of bare ground. The sparse vegetation south east of the hedgerow has a composition indicative of disturbance.



KSP Renewables Ltd
Shelton Road, Corby

Drawing Number: 182835/17/dwg1
National Vegetation Classification Survey
Results

Revision	Date	Drawn	Approved
rev0	21/7/2020	MM	RF



No dimensions to be scaled from this drawing
All dimensions are to be checked on site
Measurements displayed are for indicative purposes only

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Appendices

Appendix 1

Community species lists

DAFOR scale: Dominant, Abundant, Frequent, Occasional, Rare, with an L (Local) prefix where appropriate, and x for 'present'

Common name	Scientific name	East compartment	West compartment	Scrub and hedges
Sycamore	<i>Acer pseudoplatanus</i>	R		
Yarrow	<i>Achillea millefolium</i>	O	O	
*Agrimony	<i>Agrimonia eupatoria</i>	R		
Common bent-grass	<i>Agrostis capillaris</i>	O	O	
Creeping bent-grass	<i>Agrostis stolonifera</i>	A	O	
Garlic mustard	<i>Alliaria petiolata</i>	R		
Alder	<i>Alnus glutinosa</i>			LF
Grey alder	<i>Alnus incarna</i>			LF
Scarlet pimpernel	<i>Anagalis arvensis</i>		R	

Common name	Scientific name	East compartment	West compartment	Scrub and hedges
Cow parsley	<i>Anthriscus sylvestris</i>		R	O
Columbine	<i>Aquilegia vulgaris</i>		(wall)	
False oat-grass	<i>Arrhenatherum elatius</i>	F	O	O
Daisy	<i>Bellis perennis</i>	R	R	
Silver birch	<i>Betula pendula</i>			F
Yellow-wort	<i>Blackstonia perfoliata</i>	R	R	
Wood false-brome	<i>Brachypodium sylvatica</i>		R	LA
Soft-brome	<i>Bromus mollis</i>	vLA		
Butterfly bush	<i>Buddleja</i>		R	R
Wood small-reed	<i>Calamagrostis epigejos</i>			
*Glaucous sedge	<i>Carex flacca</i>		(wall)	
Hairy sedge	<i>Carex hirta</i>	R		
*Common knapweed	<i>Centuarea nigra</i>		R	
Common mouse-ear	<i>Cerastium fontanum</i>		R	

Common name	Scientific name	East compartment	West compartment	Scrub and hedges
Creeping thistle	<i>Cirsium arvense</i>	O	O	
Spear thistle	<i>Cirsium vulgare</i>	R	O	
Hawthorn	<i>Crataegus monogyna</i>		R	F
Cock's-foot	<i>Dactylis glomerata</i>	LF	O	
Tufted hair-grass	<i>Deschampsia cespitosa</i>	F	R	
Teasel	<i>Dipsacus fullonum</i>	R		
Couch grass	<i>Elymus repens</i>	R		
Field horsetail	<i>Equisetum arvense</i>	R		
Red fescue	<i>Festuca rubra</i>	LF	O	
Ash	<i>Fraxinus excelsior</i>			O
Cleavers	<i>Galium aparine</i>			R
Hedge bedstraw	<i>Galium mollugo</i>		R	
Ground-ivy	<i>Glechoma hederacea</i>	R		
Yorkshire fog	<i>Holcus lanatus</i>	O		
Hairy St. John's-wort	<i>Hypericum hirsutum</i>	O	O	

Common name	Scientific name	East compartment	West compartment	Scrub and hedges
Perforate St. John's-wort	<i>Hypericum perforatum</i>	O		
Soft rush	<i>Juncus effusus</i>	R		
Hard rush	<i>Juncus inflexus</i>	O	O	
Meadow vetchling	<i>Lathyrus pratensis</i>	O	O	
Hoary cress	<i>Lepidium draba</i>		R	
*Oxeye daisy	<i>Leucanthemum vulgare</i>	F	O	
Perennial ryegrass	<i>Lolium perenne</i>	R		
*Common bird's-foot trefoil	<i>Lotus corniculatus</i>	R/VLF	O	
Black medick	<i>Medicago lupulina</i>	R	R	
Melilot sp.	<i>Melilotus sp.</i>	R		
Field forget-me-not	<i>Myosotis arvensis</i>	O	O	
Common reed	<i>Phragmites australis</i>	LA	LA	
Prickly oxtongue	<i>Picris echinoides</i>	F		

Common name	Scientific name	East compartment	West compartment	Scrub and hedges
Ribwort plantain	<i>Plantago lanceolata</i>	A	A	
Broad-leaved plantain	<i>Plantago major</i>	R		
Rough meadow-grass	<i>Poa trivialis</i>	R	R	
Silverweed	<i>Potentilla anserine</i>	R		
Creeping cinquefoil	<i>Potentilla reptans</i>	A	LF	
*Cowslip	<i>Primula veris</i>		(scrub glade)	
Selfheal	<i>Prunella vulgaris</i>	R	R	
Blackthorn	<i>Prunus spinosa</i>			R
Creeping buttercup	<i>Ranunculus repens</i>	O	O	
Sweet-briar	<i>Rosa rubiginosa</i> agg.	R		
Rose sp.	<i>Rosa</i> sp.	R	R	R
Bramble	<i>Rubus fruticosus</i> agg.	LA	LA	LA
Common sorrel	<i>Rumex acetosa</i>	R	R	
Curled dock	<i>Rumex crispus</i>	R		

Common name	Scientific name	East compartment	West compartment	Scrub and hedges
Grey willow	<i>Salix cinerea</i>			LA
Meadow fescue	<i>Schedonorus pratensis</i>	LF	LA	
Hoary ragwort	<i>Senecio erucifolia</i>	O		
Common ragwort	<i>Senecio jacobaea</i>	O	O	
Prickly sow thistle	<i>Sonchus asper</i>	R		
Comphrey	<i>Symphytum officinale</i>		R	
Dandelion	<i>Taraxaxum officinalis</i> agg.		R	
Red clover	<i>Trifolium pratense</i>	R	R	
White clover	<i>Trifolium repens</i>	R		
Scentless mayweed	<i>Tripleurospermum inodorum</i>		R	
Coltsfoot	<i>Tussilago farfara</i>	F	F	
Nettle	<i>Urtica dioca</i>	R	R	
Germander speedwell	<i>Veronica chaemdrys</i>	R		
Common vetch	<i>Vicia sativa</i>	O		

Appendix 2

Quadrant Data

DOMIN SCALE

91-100	10
76-90	9
51-75	8
34-50	7
26-33	6
11-25	5
4-10	4
<4 – many individuals	3
<4 – several individuals	2
<4 – few individuals	1

Compartment:		East	East	East	West
GPS:		SP 91237 90999	SP 91263 90975	SP 91315 90978	-
Scientific name	Common name	Q1	Q2	Q3	Q4
<i>Rubus fruticosus</i> agg.	Bramble	8	4		2
<i>Plantago lanceolata</i>	Ribwort plantain	3	3	2	
<i>Tussilago farfara</i>	Coltsfoot	3		2	
<i>Dactylis glomerata</i>	Cock's-foot	3	1		
<i>Leucanthemum vulgare</i>	Oxeye daisy	2	2	1	
<i>Cirsium arvense</i>	Creeping thistle	2	1	1	
<i>Cirsium vulgare</i>	Spear thistle	1			1
<i>Alliaria petiolata</i>	Hedge garlic	1			
<i>Elymus repens</i>	Couch grass	1			
<i>Urtica dioica</i>	Nettle	1			
<i>Schedonorus pratensis</i>	Meadow fescue		5	2	3
<i>Deschampsia cespitosa</i>	Tufted hair-grass		5		1
<i>Potentilla reptans</i>	Creeping cinquefoil		4	3	

Compartment:		East	East	East	West
<i>Agrostis capillaris</i>	Common bent-grass		4	2	2
<i>Medicago lupulina</i>	Black medick		2	3	2
<i>Lathyrus pratensis</i>	Meadow vetchling		2	2	
<i>Vicia sativa</i>	Common vetch		2		
<i>Crataegus monogyna</i>	Hawthorn		1		
<i>Hypericum perforatum</i>	Perforate St John's-wort		1		
<i>Taraxacum officinalis</i> agg.	Dandelion		1		
<i>Bare ground</i>	Bare ground		3	8	
<i>Agrostis stolonifera</i>	Creeping bent-grass		1	4	
<i>Festuca rubra</i>	Red fescue			3	4
<i>Picris echinoides</i>	Prickly sow thistle			4	
<i>Plantago major</i>	Broad-leaved plantain			1	
<i>Rumex acetosa</i>	Common sorrel			1	
<i>Calamagrostis epijos</i>	Wood small-reed				8
<i>Bryophyte</i>	Moss				3

Compartment:		East	East	East	West
<i>Juncus inflexus</i>	Hard rush				3
<i>Myosotis arvensis</i>	Field forget-me-not				2
<i>Poa trivialis</i>	Rough meadow-grass				2
<i>Blackstonia perfoliata</i>	Yellow-wort				1
<i>Senecio jacobaea</i>	Common ragwort				1

Quadrat photos



Q1. East – bramble area



Q2. East – continuous grassland



Q3. East – sparsely vegetated



Q4. West – Calamagrostis area

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