

Riverside Energy Park

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Revision	Date	Description	Prepared	Reviewed	Approved

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Executive Summary

Peter Brett Associates (PBA) was commissioned to undertake a botanical survey of habitats within Riverside Energy Park (REP) site in Belvedere, London. The survey also covered four nearby land parcels immediately west of Norman Road. The aim of the survey was to gather information on the type and distribution of vegetation stands with reference to the National Vegetation Classification (NVC) (Rodwell, 1992).

The survey found the vegetation within all areas to comprise a mosaic of colonising or successional habitats including neutral grassland, open habitat and woodland understorey with some affinity to sand dune and salt marsh communities (likely indicating a degree of brackish/saline influence from the nearby tidal Thames). The vegetation within the REP site as well as the four nearby land parcels met the criteria for 'open mosaic habitat on previously developed land'; a priority habitat type of known conservation value.

Dittander (*Lepidium latifolium*) was recorded in three of the land parcels to the south of the REP site (west of Norman Road). Dittander is cited by the Botanical Society of Britain and Ireland as being nationally scarce (i.e. found in between 16 and 100 hectads in the Ordnance Survey National Grid) but is listed as being of 'least concern' in the Vascular Plant Red Data List for Britain (Cheffings *et al*, 2005).

The invasive non-native plants three-cornered garlic (*Allium triquetrum*) and giant hogweed (*Heracleum mantegazzianum*) were both recorded growing within the grassland on the bank within the REP site. Both these species are listed on Schedule 9 of the Wildlife and Countryside Act (WCA) 1981 (as amended). It is an offence to plant or otherwise cause to grow in the wild any plant listed on Schedule 9 of the WCA.

This Executive Summary contains an overview of the key findings and conclusions. However, no reliance should be placed on any part of the executive summary until the whole of the report has been read.

1 Introduction

1.1 Overview

- 1.1.1 Peter Brett Associates (PBA) was commissioned by Cory Riverside Energy (Cory) ('the Applicant') to undertake a botanical survey of the Riverside Energy Park (REP) site situated adjacent to the southern bank of the River Thames in Belvedere, London Borough of Bexley. The survey was extended to also include an assessment of fields to the south of the REP site adjacent to Norman Road. The aim of the study was to gather information on the type and distribution of vegetation stands within these areas and to search for any rare/notable plant species. This information will help to provide baseline information required to inform an Environmental Impact Assessment for REP.
- 1.1.2 A full description of REP can be found in **Chapter 3** of the Environmental Statement (**Document Reference 6.1**), and in **Schedule 1** to the draft Development Consent Order (**Document Reference 3.1**).
- 1.1.3 A full description of habitats within REP can be found in **Chapter 11** of the Environmental Statement.

1.2 Ecological Background

- 1.2.1 Areas of open mosaic habitat within the REP site were previously created as part of the existing Riverside Resource Recovery Facility (RRRF) development, with seeded species-rich grassland also created on an adjacent bank. These now fall within the footprint of REP. As such, information on their current status and conditions was required to inform scheme design and options for mitigation/compensation such as on or off-site habitat provision/management. In addition, open mosaic habitat was identified in fields to the south of the REP site proposed for the Main Temporary Construction Compound. As a result, information on the vegetation types present in these areas, as well the presence of any rare or notable species was also required to enable impacts to be fully assessed.

1.3 Aims of Study

- 1.3.1 To provide current baseline data regarding the vegetation types and plant species potentially affected by the proposed development PBA was commissioned to complete a botanical survey to provide:
- A list of plant species from the various parts of the survey area and an identification of the vegetation types present; and,
 - An identification of any vegetation stands or individual species of increased conservation value.

2 Methods

2.1 Survey Area

- 2.1.1 A survey area was defined for the survey including the area of open mosaic and adjacent grassland habitat previously created within the REP site plus four parcels of land south of the REP site to the west of Norman Road. This survey area is shown on **Figure 11.9**.

2.2 Botanical Survey

- 2.2.1 The botanical survey of the open mosaic and adjacent grassland habitat within the REP site was completed on 14th June 2018. Weather conditions were dry and mild (17°C) with overcast skies (8/8 cloud cover) and a moderate breeze (Beaufort force 4). A survey of the four parcels of land south of the REP site was completed on 11th July 2018. Weather conditions were dry and hot (28°C) with limited cloud (3/8 cloud cover) and a light breeze (Beaufort force 2).
- 2.2.2 A botanical species list was collected from each homogenous stand of vegetation within the open mosaic area. Plants were identified to species level where possible (see limitations below) with details of relative abundance collected based on a visual estimate of percentage cover within each quadrat. Within the adjacent grassland on the bank and the four land parcels south of the REP site a botanical species list for each area as a whole was collected, as the vegetation within each of these areas was largely homogenous.
- 2.2.3 After the field survey, the botanical species lists for each separate area were analysed using the MAVIS software programme. This provides an indication of the NVC community type by comparing vegetation samples to published data. MAVIS computes matching coefficients between the field data and published NVC community tables. This generates a list of the top 10 coefficients. In other words, the top 10 NVC community types to which the field data is most likely to represent are displayed in descending order. This means the communities higher up the list of matches are the 'best fit' for the field data collected.
- 2.2.4 The community types were then compared to published criteria for 'priority' habitats or habitats of conservation value. Priority habitats are those appearing on the list of Habitats of Principal Importance (HPI) produced in response to Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006. This essentially includes the list of priority habitats previously identified under the UK Biodiversity Action Plan (UK BAP) which has now been superseded by the UK Post-2010 Biodiversity Framework.

2.3 Survey Limitations

- 2.3.1 The survey of the REP site undertaken on 14th June 2018 was completed during the peak growing season for the majority of plant species. There were no limitations to the methods used.
- 2.3.2 The survey of the land parcels south of the REP site on 11th July 2018 was also completed during the peak growing season. However, this date was during a prolonged spell of very hot and dry weather which had resulted in some areas of vegetation becoming wilted and some species dying-back earlier than usual. Despite this, it was still possible to identify the majority of plants to species level with sufficient information being collected to accurately assess the communities present.

2.4 Personnel

- 2.4.1 The survey and assessment were completed by Ed Austin MCIEEM. Ed has been in continuous employment as a professional ecologist since 2004, having started his career in

environmental consultancy in 2002. Over the past 16 years, Ed has undertaken numerous habitat and vegetation assessments including extended Phase 1 habitat surveys, detailed botanical surveys and bespoke or species-specific plant surveys. He is familiar with the National Vegetation Classification (NVC) system and has experience of using digital tools such as TableFit and MAVIS to sort and analyse plant data to determine likely NVC community types.

3 Results and Interpretation

3.1 Overview

3.1.1 This section sets out the factual results of the botanical survey. Survey locations can be viewed on **Figure 11.9**.

3.2 Survey Results

Open Mosaic Vegetation on REP Site

3.2.1 The open mosaic habitat within the REP site was divided into a series of 8 areas based on vegetation structure. These are shown in **Figure 11.9** with results summarised in Table 1. Full data (species lists) are provided in Appendix A with MAVIS analysis provided in Appendix B.

Table 1: Summary of Vegetation Survey Results – Open Mosaic within REP Site

Area	NVC Community (MAVIS 'best fit')	Percentage Fit	Notes
1	MG1	38.8%	<i>Arrhenatherum elatius</i> mesotrophic grassland community. A very widespread community throughout the British lowlands
2	W24	29.7%	<i>Rubus fruticosus</i> - <i>Holcus lanatus</i> underscrub. A widespread woodland underscrub community.
3	OV19d	28.2%	<i>Poa annua</i> - <i>Matricaria perforata</i> open habitat community; <i>Chamomilla suaveolens</i> - <i>Plantago major</i> subcommunity. This community is found throughout the lowlands of Britain wherever there is suitable habitat.
4	MG1b	35.3%	<i>Arrhenatherum elatius</i> mesotrophic grassland community; <i>Urtica dioica</i> subcommunity
5	W24	20.9%	<i>Rubus fruticosus</i> - <i>Holcus lanatus</i> underscrub. A widespread woodland underscrub community.
6	MG1a	34.8%	<i>Arrhenatherum elatius</i> mesotrophic grassland community; <i>Festuca rubra</i> subcommunity
7	MG1	42.4%	<i>Arrhenatherum elatius</i> mesotrophic grassland community. A very widespread community throughout the British lowlands.
8	SD18b	20.2%	<i>Hippophae rhamnoides</i> dune scrub (sand dune) community; <i>Urtica dioica</i> - <i>Arrhenatherum elatius</i> subcommunity. This is a widely distributed coastal community, and the only community described in the NVC as 'dune scrub'.

3.2.2 As indicated above, the open mosaic area is a mixture of mesotrophic (neutral) grassland, woodland underscrub, open habitat and dune scrub communities. This is unsurprising given the inherent 'mosaic' nature of the area and the variable topography with some higher ground on bunds constructed from loose aggregate and soils as well as lower-lying and occasionally damp or inundated areas.

3.2.3 Overall, the MG1 community or associated subcommunities were particularly prevalent, as well as having the highest percentage fit. Looking at the area as a whole within MAVIS (i.e. combining all areas into a single habitat group prior to analysis) the community also shows the closest affinity to an MG1 mesotrophic grassland (40.1% fit). MG1 is a very widespread and

often species-poor mesotrophic (neutral) grassland community characterised by false oat-grass (*Arrhenatherum elatius*) as well as other coarse grasses such as cock's-foot (*Dactylis glomerata*). It is virtually ubiquitous throughout lowland Britain (Rodwell, 1992). Species such as common couch (*Elytrigia repens*), ox-eye daisy (*Leucanthemum vulgare*), Yorkshire fog (*Holcus lanatus*) and red clover (*Trifolium pratense*) were often associated with these areas. However, a mixture of (likely self-seeded) ruderal and ephemeral/short-perennial species were also characteristic such as hawkweed oxtongue (*Picris hieracioides*), black medick (*Medicago lupulina*) and purple toadflax (*Linaria purpurea*). Species such as common reed (*Phragmites australis*) were more abundant in lower-lying areas with scrub such as willow (*Salix* spp.) and butterfly bush (*Buddleja davidii*) also beginning to colonise some areas, particularly on some of the bunds.

Grassland on Bank within the REP Site

- 3.2.4 The grassland growing on the bank within the REP site to the north of the open mosaic area showed the strongest affinity to a *Urtica dioica* - *Cirsium arvense* open habitat community (35.8% fit). However, it also showed a similar affinity to an MG1 mesotrophic grassland community (34.9% fit), similar to the adjacent open mosaic area. This indicates the bank is a mixture of tall herbs and largely unmanaged grassland, which correlates to field observation. During the survey it was noted that the western end of the bank in particular had a high proportion of tall herbs present including species such as ox-eye daisy, hoary cress (*Lepidium draba*), kidney vetch (*Anthyllis vulneraria*), hawkweed oxtongue, lucerne (*Medicago sativa*), wild carrot (*Daucus carota*) and greater knapweed (*Centaurea scabiosa*). Grasses were present throughout, although were more prevalent toward the east (i.e. there was a higher proportion of grasses than herbs). Species included false oat-grass, yellow oat-grass (*Trisetum flavescens*), red fescue (*Festuca rubra*) and common couch.
- 3.2.5 Overall the bank is characteristic of a (likely) seeded grassland that has developed a high proportion of coarse grass species through low-intensity management as well as being colonised by a variety self-seeded herbs that are present within the local area. This has resulted in a mosaic habitat showing some affinity to both the open mosaic habitat nearby as well as the presumed original grassland seeding. This has resulted in a fairly diverse community albeit one characterised by widespread grass species and species that readily colonise land in this part of Britain.

Land Parcels to the South (Adjacent to Norman Road)

- 3.2.6 The land parcels south of the REP site (to the west of Norman Road) were divided into a total of 4 areas or 'fields' due to fencing and other boundaries creating a series of discreet parcels. These are described below.
- 3.2.7 **Field 1** (the northernmost field) showed the strongest affinity to a OV25 *Urtica dioica* - *Cirsium arvense* open habitat community (34.2% fit) with a OV19 *Poa annua* - *Matricaria perforata* open habitat community being the second strongest affinity (31.7% fit). These are both found throughout lowland Britain as colonising vegetation where suitable conditions exist. The OV25 community is found throughout lowland Britain, on disturbed, nutrient-rich soils, usually where patches of bare or lightly covered ground occur. This was confirmed to be the case within Field 1 during field survey observation.
- 3.2.8 **Field 2** (immediately south of Field 1) showed the strongest affinity to an SM28 *Elymus repens* salt-marsh community. This is a 'grassy' salt-marsh community characterised by common couch, often with red fescue and creeping bent (*Agrostis stolonifera*) which was found to be the case during the field survey. Although associated with the upper part of salt-marshes, this community can tolerate some freshwater influence and is also associated with disturbed ground such as dredging spoil. Within the survey area, the vegetation within field 2 has the appearance of colonising habitat growing on disturbed ground near the tidal Thames (with loose aggregate areas and some rutted tracks and other uneven ground present). The

presence of vegetation of this type is therefore indicative of a history of land-use with some brackish influence.

- 3.2.9 **Field 3** located south of Field 2 to the north of a modern warehouse building and yard showed affinity to an OV23 *Lolium perenne* - *Dactylis glomerata* open habitat community (25.7% fit). This community is widespread throughout lowland Britain. It is often found on verges, recreational areas and previously developed or disturbed ground. It can form a mosaic with other communities, the degree of disturbance being a factor in terms of relative dominance of community types. Field 3 also showed affinity to an OV25 community (24.3% fit) as also found in Field 1. Overall, the communities present in Field 3 are indicative of disturbed or previously developed land that has been allowed to recolonise.
- 3.2.10 **Field 4** at the southern end of the series of land parcels closest to a main road and beyond the modern warehouse development and yard showed the strongest affinity to an MG1 *Arrhenatherum elatius* mesotrophic grassland community; specifically, the *Festuca rubra* subcommunity (33.8% fit). As described above, MG1 is a very widespread and often species-poor grassland community characterised by coarse grasses and typically subject to no or limited management. However, Field 4 also has some affinity to sand-dune or dune-scrub communities including SD18a *Hippophae rhamnoides* dune scrub (*Festuca rubra* subcommunity) (32% fit) and SD7 *Ammophila arenaria* - *Festuca rubra* semi-fixed dune community. This is indicative of a mosaic habitat, characterised by coarse self-established grassland but with some coastal influence, particularly where more open ground occurs.

3.3 Assessment of Biodiversity Value (Vegetation Communities)

- 3.3.1 The open mosaic vegetation within the REP site as well as all the land parcels to the south (west of Norman Road) meet the criteria for the priority habitat type 'open mosaic habitat on previously developed land' as they all:
- Have an area in excess of 0.25ha;
 - Have a history of disturbance or have modified soils;
 - Contain some vegetation including early successional communities such as ruderals, annual colonising species or open grassland (as well as vegetation associated with inundation in places);
 - Contain some unvegetated loose or bare substrate; and,
 - Form a mosaic of vegetation communities with some bare substrate within (at least) the 0.25ha area.
- 3.3.2 The grassland on the bank adjacent to the open mosaic habitat within the REP site does not meet all the above criteria as it lacks areas of bare substrate. This area does not therefore meet the description of 'open mosaic habitat on previously developed land' despite consisting of successional communities and likely having a history of modification.
- 3.3.3 The 'open mosaic habitat on previously developed land' is a Habitat of Principal Importance (HPI) for the conservation of biodiversity in England. The list of HPIs was drawn up in response to Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006 (see Appendix A); as a result, these habitats are often referred to as 'S41 habitats'.

3.4 Notable Species

- 3.4.1 Dittander (*Lepidium latifolium*) was recorded in Fields 1, 2 and (more rarely) 4 to the south of the REP site (west of Norman Road). In Field 1 in particular this species was abundant and characteristic, especially along the ditch margins to the north and east as well as in clumps

elsewhere. Dittander is cited by the BSBI as being nationally scarce (i.e. found in between 16 and 100 hectads in the Ordnance Survey National Grid) but is listed as being of 'least concern' in the Vascular Plant Red Data List for Britain (Cheffings et al, 2005).

- 3.4.2 Three-cornered garlic (*Allium triquetrum*) and giant hogweed (*Heracleum mantegazzianum*) were both recorded growing within the grassland on the bank within the REP site (north of the open mosaic area). In the case of giant hogweed, this was limited to a few stands on the boundary fence, with three-cornered garlic growing within the grassland, particularly toward the eastern extent (behind the existing RRRF building). Both these species are listed on Schedule 9 of the Wildlife and Countryside Act (WCA) 1981 (as amended). It is an offence to plant or otherwise cause to grow in the wild any plant listed on Schedule 9 of the WCA. Note that the Department for Environment Food and Rural Affairs (DEFRA) do not consider planting of Schedule 9 species in private gardens, estates and amenity planting as 'planting in the wild' so long as reasonable measures are taken to confine them to the cultivated area (i.e. to prevent spread into the wild).

4 Conclusion

- 4.1.1 The botanical survey completed at the proposed Riverside Energy Park site and associated land parcels identified that all areas with the exception of the grassland bank within the REP site meet the criteria of the priority/S41 habitat 'open mosaic habitat on previously developed land'. This means the habitats present (and affected by proposals) have a recognised biodiversity value. Their loss or damage (permanently or in the short to medium-term) will therefore require compensation if adverse effects are to be avoided or reduced.

5 References

- 5.1.1 Cheffings, C.M. & Farrell, L. (Eds), Dines, T.D., Jones, R.A., Leach, S.J., McKean, D.R., Pearman, D.A., Preston, C.D., Rumsey, F.J., Taylor, I. (2005). The Vascular Plant Red Data List for Great Britain. Species Status 7: 1-116. Joint Nature Conservation Committee, Peterborough.
- 5.1.2 Rodwell, J. S. (ed.) (1992). British Plant Communities. Volume 3. Grassland and montane communities. Cambridge University Press.

Appendix A Raw Data

A.1 REP site

Table 2: Open Mosaic - Area 1

Species	DOMIN
Leucanthemum vulgare	8
Cirsium vulgare	2
Foeniculum vulgare	2
Trifolium pratense	6
Phleum pratense sens.lat.	3
Lotus corniculatus	4
Dactylis glomerata	4
Elytrigia repens	5
Daucus carota	3
Festuca rubra agg.	5
Galium verum	3
Senecio jacobaea	2
Rumex crispus	1
Arrhenatherum elatius	4
Sisymbrium officinale	3
Plantago lanceolata	3
Beta vulgaris	4
Picris hieracioides	4
Medicago sativa	4
Linaria purpurea	2
Anthyllis vulneraria	2
Senecio [spp]	2
Dipsacus fullonum	2
Artemisia vulgaris	3
Holcus lanatus	3
Medicago lupulina	3
Vicia cracca	1
Achillea millefolium	2
Malva sylvestris	2
Tripleurospermum inodorum	1
Brassica nigra	1

Table 3: Open Mosaic - Area 2

Species	DOMIN
Phragmites australis	4
Trifolium pratense	5
Linaria purpurea	3
Medicago lupulina	4
Senecio [spp]	2

Cirsium arvense	3
Beta vulgaris	2
Daucus carota	2
Arrhenatherum elatius	4
Festuca rubra agg.	5
Holcus lanatus	6
Epilobium hirsutum	1
Sonchus oleraceus	1
Buddleja davidii	5
Sisymbrium officinale	2
Leucanthemum vulgare	2
Dipsacus fullonum	2
Lotus corniculatus	3
Rubus fruticosus agg.	3
Sonchus arvensis	2
Picris hieracioides	2
Salix caprea	3
Cirsium vulgare	2
Cortaderia selloana	1
Geranium robertianum	2

Table 4: Open Mosaic - Area 3

Species	DOMIN
Phragmites australis	8
Medicago lupulina	4
Holcus lanatus	6
Agrostis stolonifera	4
Sisymbrium officinale	2
Picris hieracioides	4
Plantago major	2
Cirsium arvense	3
Dipsacus fullonum	3
Betula pubescens	2
Rubus fruticosus agg.	3
Epilobium parviflorum	2
Vicia hirsuta	1
Senecio [spp]	2
Geranium robertianum	1
Picris echioides	1
Beta vulgaris	1
Daucus carota	3

Table 5: Open Mosaic - Area 4

Species	DOMIN
Linaria purpurea	3
Medicago lupulina	8

Picris hieracioides	3
Dipsacus fullonum	2
Holcus lanatus	3
Arrhenatherum elatius	4
Senecio [spp]	2
Sonchus oleraceus	1
Daucus carota	2
Rumex crispus	1
Melilotus officinalis	1
Festuca rubra agg.	3
Elytrigia repens	4
Rubus fruticosus agg.	2
Cirsium vulgare	1
Trifolium pratense	1
Dactylis glomerata	2
Diplotaxis tenuifolia	1

Table 6: Open Mosaic - Area 5

Species	DOMIN
Buddleja davidii	3
Anisantha sterilis	2
Holcus lanatus	3
Picris hieracioides	5
Sonchus arvensis	2
Senecio [spp]	2
Medicago lupulina	8
Linaria purpurea	3
Diplotaxis tenuifolia	3
Melilotus albus	4
Trifolium repens	3
Rubus fruticosus agg.	3
Senecio erucifolius	2
Fragaria [spp]	1
Tripleurospermum inodorum	1
Phragmites australis	1
Arrhenatherum elatius	3
Vulpia myuros	3
Rosa canina agg.	1

Table 7: Open Mosaic - Area 6

Species	DOMIN
Trifolium repens	3
Trifolium pratense	3
Agrostis stolonifera	3
Sisymbrium officinale	1
Phragmites australis	6

Beta vulgaris	3
Picris hieracioides	4
Holcus lanatus	5
Vulpia myuros	3
Festuca rubra agg.	4
Dactylis glomerata	3
Medicago lupulina	7
Senecio [spp]	3
Epilobium parviflorum	2
Daucus carota	2
Linaria purpurea	2
Lolium perenne	1
Cortaderia selloana	1
Convolvulus arvensis	2
Rubus fruticosus agg.	2
Geranium robertianum	2
Puccinellia maritima	2
Cirsium vulgare	1
Dipsacus fullonum	1
Chamerion angustifolium	1
Arrhenatherum elatius	5

Table 8: Open Mosaic - Area 7

Species	DOMIN
Diplotaxis tenuifolia	1
Leucanthemum vulgare	5
Beta vulgaris	2
Arrhenatherum elatius	5
Dactylis glomerata	5
Dipsacus fullonum	3
Picris hieracioides	3
Trifolium pratense	3
Trifolium repens	3
Lotus corniculatus	2
Medicago lupulina	4
Galium mollugo	4
Elytrigia repens	3
Plantago lanceolata	2
Centaurea nigra	3
Sisymbrium officinale	2
Rubus fruticosus agg.	3
Daucus carota	2
Prunella vulgaris	2
Prunus spinosa	2
Cirsium arvense	2
Holcus lanatus	5

Cornus sanguinea	1
Urtica dioica	2
Hypericum perforatum	1
Clematis vitalba	2
Carex divulsa	1
Buddleja davidii	2
Salix caprea	4
Vicia hirsuta	1
Populus alba	1
Linaria purpurea	2
Melilotus albus	3

Table 9: Open Mosaic - Area 8

Species	DOMIN
Melilotus albus	2
Linaria purpurea	5
Picris hieracioides	5
Medicago lupulina	4
Buddleja davidii	1
Rubus fruticosus agg.	2
Diplotaxis tenuifolia	4
Lotus corniculatus	5
Populus (cultivar)	1
Phragmites australis	2
Cirsium arvense	2
Cirsium vulgare	2
Vulpia myuros	3

Table 10: Grassland on Bank

Species	DOMIN
Cirsium arvense	1
Arrhenatherum elatius	5
Lepidium draba	5
Achillea millefolium	4
Anthyllis vulneraria	5
Leucanthemum vulgare	6
Picris hieracioides	3
Trifolium pratense	3
Artemisia vulgaris	2
Medicago sativa	3
Melilotus officinalis	1
Senecio [spp]	2
Elytrigia repens	3
Sisymbrium officinale	2
Beta vulgaris	4
Daucus carota	3

Cirsium vulgare	2
Festuca rubra agg.	6
Galium verum	3
Foeniculum vulgare	1
Dactylis glomerata	3
Linaria purpurea	2
Anisantha sterilis	1
Sonchus oleraceus	1
Lotus corniculatus	2
Trisetum flavescens	3
Vicia cracca	1
Rumex crispus	1
Malva sylvestris	2
Vulpia myuros	2
Phragmites australis	1
Heracleum mantegazzianum	2
Carpinus betulus	1
Medicago lupulina	3
Robinia pseudoacacia	1
Aster tripolium	1
Anthemis arvensis	1
Calystegia sepium	1
Allium triquetrum	2
Muscari neglectum	2
Agrostis stolonifera	2
Centaurea scabiosa	3
Conium maculatum	3
Hypericum perforatum	1
Lathyrus latifolius	2
Senecio jacobaea	2

A.2 Land Parcels Adjacent to Norman Road

Table 11: Field 1

Species	DOMIN
Picris hieracioides	3
Medicago lupulina	3
Galega officinalis	6
Lepidium latifolium	6
Dipsacus fullonum	3
Daucus carota	2
Arrhenatherum elatius	4
Melilotus albus	5
Dactylis glomerata	3
Agrostis stolonifera	7
Hordeum murinum	2

Holcus lanatus	3
Cirsium arvense	2
Senecio jacobaea	2
Tripleurospermum inodorum	1
Beta vulgaris	2
Sisymbrium officinale	2
Plantago coronopus	1
Lotus corniculatus	4
Puccinellia maritima	3
Filago vulgaris	1
Cirsium vulgare	1
Rumex crispus	2
Elytrigia repens	4
Lepidium draba	2
Phragmites australis	2
Rumex obtusifolius	2
Vulpia myuros	1
Melilotus officinalis	3

Table 12: Field 2

Species	DOMIN
Lotus corniculatus	6
Melilotus officinalis	2
Agrostis stolonifera	8
Puccinellia maritima	3
Tripleurospermum inodorum	2
Rumex obtusifolius	2
Galega officinalis	5
Picris hieracioides	3
Melilotus albus	4
Beta vulgaris	3
Holcus lanatus	3
Elytrigia repens	4
Festuca rubra agg.	4
Arrhenatherum elatius	5
Dipsacus fullonum	2
Picris echioides	2
Rumex crispus	3
Crataegus monogyna	2
Daucus carota	2
Lepidium draba	2
Lepidium latifolium	3
Glyceria fluitans	2
Rubus fruticosus agg.	1
Cirsium arvense	2
Sisymbrium officinale	1

Verbascum thapsus	2
Aster tripolium	1

Table 13: Field 3

Species	DOMIN
Vulpia myuros	3
Catapodium rigidum	3
Trifolium campestre	3
Medicago lupulina	5
Picris hieracioides	4
Buddleja davidii	4
Senecio [spp]	2
Carex hirta	1
Picris echioides	2
Cirsium arvense	2
Holcus lanatus	2
Arrhenatherum elatius	3
Phragmites australis	3
Salix caprea	4
Senecio jacobaea	1
Trifolium pratense	2
Betula pendula	4
Agrostis stolonifera	5
Populus alba	4
Populus (cultivar)	3
Crataegus monogyna	1
Populus tremula	2
Salix fragilis	2
Blackstonia perfoliata	2
Sisymbrium officinale	1
Achillea millefolium	1
Cirsium vulgare	1
Daucus carota	2
Galega officinalis	4
Melilotus albus	2
Linaria purpurea	2
Artemisia vulgaris	2
Epilobium hirsutum	1
Arctium lappa	1

Table 14: Field 4

Species	DOMIN
Arrhenatherum elatius	3
Rubus fruticosus agg.	3
Picris hieracioides	4
Festuca rubra agg.	5

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Lactuca serriola	1
Artemisia vulgaris	2
Cirsium arvense	4
Catapodium rigidum	3
Buddleja davidii	3
Melilotus albus	5
Populus (cultivar)	1
Vulpia myuros	3
Polypogon monspeliensis	2
Phragmites australis	2
Sisymbrium officinale	2
Lotus corniculatus	3
Tripleurospermum inodorum	2
Medicago lupulina	3
Plantago major	1
Plantago lanceolata	2
Galega officinalis	3
Agrostis stolonifera	3
Trifolium pratense	3
Senecio jacobaea	3
Achillea millefolium	2
Chamerion angustifolium	1
Puccinellia maritima	2
Lepidium latifolium	1
Salix caprea	1
Daucus carota	1
Trifolium arvense	1
Elytrigia repens	2

Appendix B MAVIS Analysis Results

B.1 Open Mosaic Area Within REP Site

Table 15: Area 1

NVC Community Type	Percentage Fit (MAVIS)
MG1	38.83
MG1a	36.76
MG1e	36.10
MG1b	35.59
SD8a	34.27
MC11	33.90
OV25b	33.52
OV23d	33.47
MC9b	33.27
SD8	33.09

Table 16: Area 2

NVC Community Type	Percentage Fit (MAVIS)
W24	29.70
OV25	28.99
MG1b	28.45
MG1	28.11
MG1c	27.95
MG1a	27.63
MG9b	27.23
MG12	27.14
SD18a	27.14
MG12a	26.93

Table 17: Area 3

NVC Community Type	Percentage Fit (MAVIS)
OV19d	28.24
S26	26.25
W24a	25.38
OV19	24.17
MG10a	23.73
OV19b	23.42
S26b	23.26
W24	23.05
S4	22.96
OV25	22.53

Table 18: Area 4

NVC Community Type	Percentage Fit (MAVIS)
MG1b	35.28
MG1a	35.16
MG9b	30.95
SM28	30.27
MG1c	29.75
MG1	29.63

OV23d	29.20
OV27	28.69
OV25	27.93
SD18	27.91

Table 19: Area 5

NVC Community Type	Percentage Fit (MAVIS)
W24	20.92
OV19	20.34
OV23c	19.96
MG1c	19.90
OV23	19.56
SD18b	19.09
SD18	18.95
OV23d	18.65
OV27	18.64
W24a	18.62

Table 20: Area 6

NVC Community Type	Percentage Fit (MAVIS)
MG1a	34.80
MG9b	34.77
OV23d	33.24
MG1b	32.95
W24	32.30
OV23c	32.06
MG1c	31.92
MG1	31.73
OV23	31.51
MG12a	30.97

Table 21: Area 7

NVC Community Type	Percentage Fit (MAVIS)
MG1	42.35
MG1c	41.98
MG1a	38.95
MG1b	38.92
MG9b	37.58
MG1e	37.12
MG1d	35.54
OV23d	33.03
OV25	31.56
OV23	31.23

Table 22: Area 8

NVC Community Type	Percentage Fit (MAVIS)
SD18b	20.18
SD18	19.78
SD18a	19.05
OV27	16.16
OV25c	15.79
OV27e	15.44

S26	14.90
W24	14.88
OV22	14.52
MG1b	14.48

B.2 Grassland on Bank Within REP Site

Table 23: Grassland on Bank

NVC Community Type	Percentage Fit (MAVIS)
OV25	35.79
MG1	34.93
MG1a	33.99
MG1e	32.12
MG1b	30.51
SD9a	30.23
OV25b	30.15
MG1d	29.72
OV23	29.28
SD8a	28.70

B.3 Land Parcels Adjacent to Norman Road

Table 24: Field 1

NVC Community Type	Percentage Fit (MAVIS)
OV25	34.18
OV19	31.71
OV19d	30.51
SM28	30.23
OV25b	29.16
OV23	28.77
MG11a	28.53
MG1a	28.13
OV25c	28.04
MG1b	27.78

Table 25: Field 2

NVC Community Type	Percentage Fit (MAVIS)
SM28	34.74
MG12a	31.05
MG11	30.04
MG11a	29.39
MG1a	29.11
MG9b	29.09
MG11b	29.01
SM18c	27.13
OV19d	27.08
MG12	26.86

Table 26: Field 3

NVC Community Type	Percentage Fit (MAVIS)
OV23	25.68

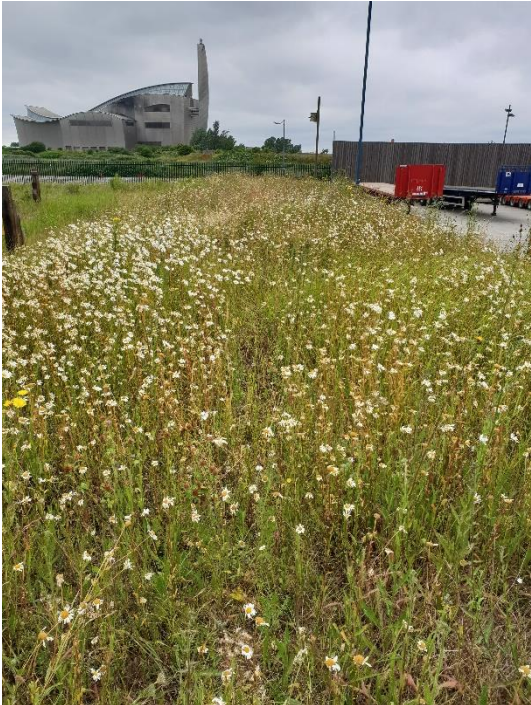
OV25	24.28
OV19d	22.83
OV23d	22.42
OV23c	22.10
OV19c	21.63
OV19	21.17
OV25c	20.00
MG1b	19.76
W24	19.43

Table 27: Field 4

NVC Community Type	Percentage Fit (MAVIS)
MG1a	33.75
MG1	32.18
SD18a	32.05
MG1b	31.87
MG12a	31.29
SD7c	31.25
SD8a	30.05
MG12	29.95
OV23	29.79
SD18	29.58

Appendix C Photographs

Photograph 1: Open mosaic habitat on REP site (example on bank – Area 1)



Photograph 2: Example of low-lying vegetation within open mosaic (Area 3)



Photograph 3: Example of loose aggregate/bare ground in open mosaic area



Photograph 4: More 'grassy' part of open mosaic (area 6 and 7)



Photograph 5: Colonising vegetation in land south of REP site (adjacent to Norman Road) showing dittander (Field 1)



Appendix D Relevant Legislation

D.1 Wildlife and Countryside Act 1981 (as amended)

- D.1.1 The Act implements the Convention of European Wildlife and Natural Habitats (The Bern Convention) and the Directive 2009/147/EC 'The Birds Directive'.
- D.1.2 The 1981 Act has been amended by the Countryside and Rights of Way (CROW) Act 2000.
- D.1.3 Section 14(2) of the Act makes it an offence to cause any species of animal or plant listed in Schedule 9 of the Act to grow in the wild.

D.2 The Natural Environmental and Rural Communities Act 2006 ('NERC')

- D.2.1 The NERC Act sets a duty on public bodies (including Local Authorities) to have due regard for habitats and Species of Principal Importance for biodiversity in England when carrying out their duties.
- D.2.2 Section 41 (S.41) the Act requires the Secretary of State to publish a list of habitats and species which are of principal importance for the conservation of biodiversity in England. The list is used by decision-makers, such as Local Authorities, in implementing their protection duties under this Act when carrying out their functions.
- D.2.3 The S.41 list includes 56 habitats and almost 1000 Species of Principal Importance in England. Since the UN Convention on Biological Diversity (CBD) in 2010 the UK identify these habitats and species as conservation priorities under the UK Post-2010 Biodiversity Framework, (they were formerly identified as UK BAP habitats and species).