



ARCUS

TORRANCE WIND FARM EXTENSION II

**TECHNICAL APPENDIX 10.1:
HABITAT SURVEYS**

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Prepared By:

Arcus Consultancy Services

7th Floor
144 West George St
Glasgow
G2 2HG

T +44 (0)141 221 9997 | **E** info@arcusconsulting.co.uk
w www.arcusconsulting.co.uk

Registered in England & Wales No. 5644976

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ABBREVIATIONS

BSBI:	Botanical Society of the British Isles
CIEEM:	Chartered Institute of Ecology and Environmental Management
EC:	European Commission
GWDTE:	Groundwater-dependent Terrestrial Ecosystem
JNCC:	Joint Nature Conservation Committee
LBAP:	Local Biodiversity Action Plan
NVC:	National Vegetation Classification
SBL:	Scottish Biodiversity List
SEPA:	Scottish Environmental Protection Agency
UKTAG:	United Kingdom Technical Advisory Group

1 INTRODUCTION

1.1 Background

Arcus (an ERM Group Company) was commissioned by Infinergy to complete a habitat survey of the proposed Torrance Wind Farm Extension II (hereafter referred to as 'the Proposed Development'). The site is located immediately north of the M8 motorway at Harthill, approximately 2 km to the west of Whitburn, in North Lanarkshire (central Ordnance Survey National Grid Reference NS900653). The site boundary is shown in Figure 10.1.1, Annex A.

The habitat survey was carried out by Matt Harding (MCIEEM), a professional ecological surveyor with relevant skills and experience. It was completed in September 2021, with an additional follow-up visit made in November 2021.

The habitat survey consisted of a combined Phase 1 habitat survey (JNCC, 2010) and National Vegetation Classification (NVC) survey (Rodwell, 1996), with an assessment of habitat groundwater dependency also undertaken. This report details the methods followed and the results of the combined habitat survey.

1.2 Site Description

The site¹ extends along the north side of the M8 from near Treebanks Farm in the west to near Torrance Farm in the east. A minor road bounds the site to the north, and the B718 runs north-south through the site, linking Blackridge in the north to Harthill in the south. Two disused railway line embankments also run through the site, along with various footpaths and farm access tracks. The operational Torrance Wind Farm is present at the eastern edge of the site.

The site is located between 175 m and 235 m above sea level, with an unnamed burn or drainage line running along the northern boundary. To the north of the burn, much of the site faces south-east; to the south of the burn the lower-lying land is flatter, sloping gently east-north-east.

The southern section of the site is known as Netherton Wood, and consists of commercial conifer blocks, with small broadleaved plantation stands scattered throughout. The forestry rides form a network of grassland and marsh habitats, with grazing pasture by Netherton Farm. The low-lying wet ground in the east of the site includes a sizeable pond and areas of swamp. The western end of the site consists of a spur of rough and improved grazing pastures.

The northern half of the site is predominantly grazing pastures, with isolated broadleaved woodland blocks (mostly of planted origin). In the centre of the site, a disused tip consists of well-vegetated spoil, presumably from railway construction or mining. Steep-sided hillocks between Treebanks Farm and Blairmuckhill Farm are old mining bings, now well-vegetated, and small areas of wet modified bog are present on lower lying ground nearby.

2 METHODS

2.1 Habitat Survey

A combined Phase 1 habitat survey and NVC survey was undertaken to map and classify the habitats within and up to 200 m from the site (the Habitat Survey Area), and to identify any habitats of conservation importance. Surveys were carried out during suitable weather conditions, with good visibility and no snow cover, allowing habitat classifications to be made.

¹ Note: The site boundary was larger at the time of the surveys and, through design development, has since been reduced down. As such the Habitat Survey Area was more extensive and based on a previous site boundary.

The standard Joint Nature Conservation Committee (JNCC) Phase 1 habitat survey method (JNCC, 2010) was followed. All accessible areas of the site were visited, and homogenous stands of vegetation mapped on to aerial photographs at 1:3,000 scale. Habitat types were identified using the standardised Phase 1 codes.

Vegetation stands were also classified to community and, where feasible, sub-community using the NVC classification system developed by Rodwell *et al.* (1991a, *et seq.*). Where a habitat was not classifiable under the NVC system, it was classified using the JNCC Phase 1 habitat classification (e.g. A1.1.2 – broadleaved plantation).

Additional information was gathered by recording dominant and constant species within the habitat types, and descriptive notes were taken for habitats of particular interest. Where several habitats occurred together in a mosaic, the ratio of the different NVC communities present within this area was recorded (e.g. scattered scrub through an area of grassland).

All vascular plant species encountered within the Habitat Survey Area were recorded and assigned an overall site frequency score using the DAFOR scale (Rodwell, 1996). Any invasive plant species were noted. Bryophytes were not specifically recorded, but notes were taken of the bryophyte assemblage in habitats such as bogs. Incidental records were made of other taxa of note when encountered, for example protected mammal/bird species.

2.2 Groundwater-dependent Terrestrial Ecosystem Assessment

As part of the NVC survey, any wetland habitats were evaluated in terms of their potential to be groundwater-dependent terrestrial ecosystems (GWDTEs). This was done based on the hydrogeological setting of each NVC community identified, and with reference to Scottish Environment Protection Agency (SEPA) guidance (SEPA, 2017), modified from the United Kingdom Technical Advisory Group (UKTAG) list of NVC communities and associated groundwater dependency scores.

GWDTE potential was scored as low, moderate or high following SEPA (2017). Where habitat mosaics contained significant proportions of habitats with different GWDTE potential, these were given a split score (e.g. Low-Moderate). Where the wetland habitat present was peat-based (e.g. a blanket bog or modified bog habitat), the habitat was classed as 'peatland' rather than assigning a GWDTE potential, as these ombrogenous mire types are predominantly rainwater fed rather than groundwater dependent.

2.3 Habitat and Plant Conservation Status

Following the field survey, the conservation status of each habitat recorded was assessed based on the following:

- Annex I habitats listed on the European Commission (EC) Habitats Directive, as translated into British and Scottish law by The Conservation (Natural Habitats, &c.) Regulations 1994 (as amended in Scotland);
- Scottish Biodiversity List (SBL) habitats of principal importance for conservation (superseding the UK Biodiversity Action Plan priority habitat classification in Scotland); and
- North Lanarkshire Local Biodiversity Action Plan (LBAP)² priority habitats and species.

All vascular plant species encountered within the Habitat Survey Area were recorded, and their national conservation status assessed based on the Vascular Plant Red Data List for Great Britain (Cheffings & Farrell, 2005; as updated). No Rare Plant Register exists for the Vice-county of Lanarkshire, within which the site is located.

² <https://www.northlanarkshire.gov.uk/leisure-parks-and-culture/countryside-and-parks/countryside-management-and-biodiversity-0/our-local-biodiversity>

2.4 Survey Limitations

The survey was carried out outside the optimum Phase 1 survey period, defined by JNCC as spring for woodlands, mid-summer for woodlands, autumn for heathlands and between mid-June and the end of September for open waters. Due to the survey timing, some plant groups such as orchids were no longer flowering, and other early-flowering taxa may not have been evident (e.g. mining bings and spoil tips in the centre and west of the Habitat Survey Area; as well as species-rich stand of marshy grassland by the Heart of Scotland services). However, habitat classification was still feasible during the survey, based on surveyor experience.

Due to the presence of the M8 at the south edge of the site, the 200 m buffer area beyond it was not surveyed. The Heart of Scotland services on the north side of the M8 were also excluded from the Habitat Survey Area. As the Proposed Development is understood to be planned to the north of the motorway, this is not considered a significant survey constraint.

3 RESULTS

This section summarises the results of the Phase 1/NVC habitat survey, including the habitat types present, their legislative and conservation status, and their potential groundwater dependency. The vascular plant species recorded are also summarised, along with incidental records of other protected taxa.

3.1 Habitat Summary

A total of 30 Phase 1 habitat types were recorded within the Habitat Survey Area.

Table 1, below, lists these Phase 1 habitat types and the corresponding NVC communities associated with them, identifies the legislative/conservation status of each NVC community, and assesses the potential groundwater dependency of each NVC community (or Phase 1 habitat type if a non-NVC habitat).

Figures 10.1.1 and 10.1.2 in Annex A show the distribution of these habitats within the Habitat Survey Area, and Table B1 in Annex B provides details of the NVC classification of each habitat polygon mapped.

Table 1: Habitat summary

Phase 1 code	Phase 1 habitat type	Corresponding NVC communities	Legislative/ conservation status*	Potential groundwater dependency
A1.1.1	Broadleaved woodland – semi-natural	W4a, W4b, W4c, W7b, W7c, W11	Bog woodland; Old sessile oak woods with <i>Ilex</i> and <i>Blechnum</i> ; Wet woodland, Upland mixed ashwood, Upland birchwood; <i>Woodland</i>	Low (W11), Moderate (W7c), High (W4, W7b)
A1.1.2	Broadleaved woodland - plantation	Non-NVC, W3, W4, W7, W7c		Low (non-NVC), Moderate or High (W3, W4, W7)
A1.2.2	Coniferous woodland – plantation	Non-NVC		Low
A1.3.2	Mixed woodland – plantation	Non-NVC		Low
A2.1	Scrub – dense/continuous	Non-NVC, W1, W7b, W7c, W22, W23, W24x	Wet woodland, Upland mixed ashwood	Low (non-NVC, W22, W23, W24x), Moderate (W1, W7c), High (W7b)
A2.2	Scrub – scattered	Non-NVC, W1, W3, W21, W22, W23, W23a W24	Wet woodland	Low (non-NVC, W21, W23, W24), Moderate (W1, W3)
A3.1	Parkland/scattered trees – broadleaved	Non-NVC, W4b/c	Bog woodland ; Wet woodland	Low (non-NVC), High (W4b/c)
B1.1	Acid grassland – unimproved	U1d, U4, U4a, U4d, U4d-M6, U4e, U5, U5a, U5b, U5c, U5d	Lowland dry acid grassland; <i>Nardus stricta-Galium saxatile</i> grassland; Open mosaic habitats on previously developed land; <i>Open mosaic habitats on previously developed land</i>	Low, except U4d-M6 and U5c (Moderate)

Phase 1 code	Phase 1 habitat type	Corresponding NVC communities	Legislative/ conservation status*	Potential groundwater dependency
B1.2	Acid grassland – semi-improved	U4b, U5(Cc)		Low
B2.1	Neutral grassland – unimproved	MG1, MG1a, MG1b, MG1c, MG1e, MG5, MG5a, MG5c, MG9, MG10a, MG10(HI), MG10(Hm)	Lowland meadows	Low (MG1 except MG1c, MG5, MG10(HI/Hm)), Moderate (MG1c, MG9, MG10a)
B2.2	Neutral grassland – semi-improved	MG6, MG6a, MG6b, MG9, MG10a, MG13		Low (MG6), Moderate (MG9, MG10a, MG13)
B4	Improved grassland	MG6, MG6a, MG7, MG7a, MG7b		Low
B5	Marsh/marshy grassland	MG9/MG10a, MG10a, M23a, M23b, M23a-MG9, M25, M25b, M25c, M27, M27b, M27c, S28, Je	Lowland fens; Purple Moor grass and rush pastures; <i>Floodplain and grazing marsh</i>	Moderate (MG10a, M25, M27, S28, Je), High (M23)
C3.1	Tall herb and fern – tall ruderal	Non-NVC, OV24, OV24a, OV25, OV25a, OV26, OV26c, OV27, OV27b		Low, except OV26 (Moderate)
C3.2	Tall herb and fern – other	Non-NVC		Low
E1.7	Wet modified bog	M17a, M18a, M20, M20a, M25, M25a	Active raised bogs; Degraded raised bogs; Lowland raised bog; <i>Lowland raised bog</i>	Peatland
E2.1	Acid/neutral flush	M4, M6, M6a, M6b, M6c, M23b	Upland flushes, fens and swamps	High
F1	Swamp	S4a, S9, S9a, S9b, S10, S12, S12b, S12d, S14, S19, S22, S22b, S23, S27, S28	Lowland fens; Reedbeds	Low, except S27 (Moderate)
F2.2	Swamp – inundation	MG13/S22c	Lowland fens	Moderate
G1.2	Standing water – mesotrophic	A9	Ponds; <i>Ponds</i>	N/A
G2	Running water	Non-NVC		N/A
J1.1	Cultivated/disturbed land – arable	Non-NVC		N/A
J1.2	Cultivated/disturbed land – amenity grassland	Non-NVC		Low
J1.3	Cultivated/disturbed land – ephemeral/short perennial	Non-NVC, OV10, OV13, OV18b, OV21	Open mosaic habitats on previously developed land; <i>Open mosaic habitats on previously developed land</i>	Low
J1.4	Cultivated/disturbed land – introduced shrub	Non-NVC		Low
J2.1.2	Hedgerow – intact, species-poor	W21	Hedgerows; <i>Hedgerow</i>	Low
J2.2.2	Hedgerow – defunct, species-poor	Non-NVC, W21	Hedgerows; <i>Hedgerow</i>	Low
J2.3.2	Hedgerow – with trees, species-poor	Non-NVC	Hedgerows; <i>Hedgerow</i>	Low
J3.6	Built up areas – buildings/roads	Non-NVC		N/A
J4	Bare ground	Non-NVC		N/A
*Key to legislative/conservation status:				
Bold text – Annex I habitats on the EC Habitats Directive				
Standard text – SBL habitats of principal importance for the purpose of conserving biodiversity				
<i>Italic text</i> – North Lanarkshire LBAP priority habitats				

Stands of four Annex I habitats were recorded in the Habitat Survey Area: Bog woodland, corresponding to the W4c NVC community; Old sessile oak woods with *Ilex* and *Blechnum*, corresponding to the W11 NVC community; Active raised bog, corresponding to the M18 NVC community; and Degraded raised bog, represented by the M20 and M25 communities.

Fourteen SBL habitats of principal importance for conservation were identified, along with five local priority habitats listed on the North Lanarkshire LBAP. GWDTE habitats were also present on site, including three NVC communities assessed as highly groundwater dependent: W4, W7 and M23.

Further details of these habitats are provided in Section 3.2.

3.2 Habitat Descriptions

Each habitat type recorded in the Habitat Survey Area is described below, grouped by Phase 1 habitat category.

3.2.1 Broadleaved woodland

Semi-natural broadleaved woodland was scarce on site, with stands located west of Loan Farm, in the north of the site, and on low-lying ground south of Blairmuckhill Farm, in the west of the site.

The northernmost stand consisted of W4 *Betula pubescens-Molinia caerulea* bog woodland, with a mixture of W4a *Dryopteris dilatata-Rubus fruticosus* and W4c *Sphagnum* sub-communities noted. Downy Birch (*Betula pubescens*) was dominant, with Alder (*Alnus glutinosa*) and Grey Willow (*Salix cinerea*) scattered in the canopy. The ground flora consisted of Purple Moor-grass (*Molinia caerulea*), Creeping Soft-grass (*Holcus mollis*), Heath Bedstraw (*Galium saxatile*), Broad Buckler-fern (*Dryopteris dilatata*), Common Bent (*Agrostis capillaris*), Bilberry (*Vaccinium myrtillus*), Wavy Hair-grass (*Avenella flexuosa*), Sweet Vernal-grass (*Anthoxanthum odoratum*), Soft-rush (*Juncus effusus*) and Tufted Hair-grass (*Deschampsia cespitosa*), with self-seeded Beech (*Fagus sylvatica*) saplings noted. Bryophytes present included Heath Plait-moss (*Hypnum jutlandicum*), Five-ranked Bog-moss (*Sphagnum quinquefarium*), Common Haircap (*Polytrichum commune*), Springy Turf-moss (*Rhytidiadelphus squarrosus*), Flat-topped Bog-moss (*S. fallax*), Blunt-leaved Bog-moss (*S. palustre*) and Common Feather-moss (*Kindbergia praelonga*).

The western group of semi-natural broadleaved woodland stands were predominantly a mix of W11 *Quercus petraea-Betula pubescens-Oxalis acetosella* and W7 *Alnus glutinosa-Fraxinus excelsior-Lysimachia nemorum* woodland communities. The W11 stands were present on drier ground, and whilst Downy Birch was still abundant the canopy was slightly more diverse than the W4 community, with Silver Birch (*Betula pendula*), Rowan (*Sorbus aucuparia*), Goat Willow (*Salix caprea*) and Grey Willow also noted. The ground flora was grassy and apparently grazed out by stock; no sub-community was therefore assigned. One stand growing on old spoil may have been of planted origin. The W7 stands were present on damper ground with the W7c *Deschampsia cespitosa* sub-community most abundant. Downy Birch, Alder and Grey Willow were characteristic, with Tufted Hair-grass dominant in the field layer. Where the ground became more saturated, the W7b *Carex remota-Cirsium palustre* sub-community was identified, with rushes and tall herbs more frequent in the ground flora. One very wet area was classed as a form of W3 *Salix pentandra-Carex rostrata* woodland, with Bottle Sedge (*Carex rostrata*) growing below Grey Willow and Alder. Where a wet, rushy ground flora was present on more acid ground, this more species-poor woodland was assigned to the W4 community, W4b *Juncus effusus* sub-community.

Broadleaved plantation was more frequent on site, with extensive stands with Nether-ton Wood in the south-east of the site, and smaller stands planted up around the edges of large conifer blocks, and along road and field margins. Species frequently present were Sycamore (*Acer pseudoplatanus*), Ash (*Fraxinus excelsior*), Alder, Rowan and Downy Birch. Some stands consisted predominantly of Beech, whilst other mixtures included Sessile Oak (*Quercus petraea*) or Pedunculate Oak (*Q. robur*). Norway Maple (*A. platanooides*), Hazel (*Corylus avellana*), Hawthorn (*Crataegus monogyna*), Goat Willow and Silver Birch were less commonly encountered, whilst Horse Chestnut (*Aesculus hippocastanum*), Lime (*Tilia x europaea*) and Aspen (*Populus tremula*) were identified in single plantation stands.

The ground flora under these plantation blocks was typically species-poor, with Common Nettle (*Urtica dioica*), Creeping Buttercup (*Ranunculus repens*), Cleavers (*Galium aparine*), Common Feather-moss and Rough-stalked Feather-moss (*Brachythecium rutabulum*) most frequent under the Sycamore and Ash dominated stands. Wetter stands, with a mixture of

Tufted Hairgrass and Soft-rush, corresponded to the W7b or W7c wet woodland communities, and one planted Alder block corresponded to the W4 community.

3.2.2 Coniferous and mixed plantation

Coniferous plantation was the dominant land use within Netherton Wood in the south and south-east of the site. Most plantation blocks were dominated by Sitka Spruce (*Picea sitchensis*), with Hybrid Larch (*Larix x marschlinii*) sometimes scattered through the stand. Two woodland blocks consisted entirely of Hybrid Larch, with one also incorporating some planted Scots Pine (*Pinus sylvestris*).

Mixed plantation was less frequent, with small blocks scattered across the site, and one more extensive area planted by the Heart of Scotland services in the south of the site. These were often quite diverse, with Sitka Spruce, Hybrid Larch, Scots Pine, Lodgepole Pine (*Pinus contorta*) and Lawson's Cypress (*Cupressus lawsoniana*) the conifers noted, and a wide range of broadleaved trees and shrubs recorded: Ash, Rowan, Beech, Norway Maple, Hawthorn, Elder (*Sambucus nigra*), Holly (*Ilex aquifolium*), Wild Privet (*Ligustrum vulgare*), Garden Privet (*L. ovalifolium*), Blackthorn (*Prunus spinosa*), Wild Cherry (*P. avium*), Guelder-rose (*Viburnum opulus*), Tree Cotoneaster (*Cotoneaster frigidus*), Grey Alder (*Alnus incana*), White Willow (*Salix alba*), Osier (*S. viminalis*), Hybrid Crack-willow (*S. x fragilis*), Common Whitebeam (*Sorbus aria*), Swedish Whitebeam (*S. intermedia*), Wych Elm (*Ulmus glabra*), Sycamore, Lime, Pedunculate Oak, Sessile Oak and Dogwood (*Cornus*) species.

3.2.3 Scrub

Dense/continuous scrub was scarce on site, with occasional stands noted in Netherton Wood and other present along field margins. Where these were present on dry substrates, Blackthorn or Gorse (*Ulex europaeus*) were typical. Blackthorn stands represented the W22 *Prunus spinosa*-*Rubus fruticosus* agg. scrub community, with other shrubs present including Hawthorn, Guelder-rose and Dog-rose (*Rosa canina*). Gorse scrub was less diverse, with a dense shrub layer only augmented by Bramble (*Rubus fruticosus* agg.), corresponding to the W23 *Ulex europaeus*-*Rubus fruticosus* agg. scrub community. One small stand of Aspen regeneration and Raspberry (*Rubus idaeus*) canes was also recorded as dense/continuous scrub (and classed as W24x, a form of W24 underscrub).

On damper substrates, dense/continuous scrub consisted of Grey Willow, growing over a mixture of Soft-rush, Sharp-flowered Rush (*Juncus acutiflorus*), Tufted Hair-grass and herbs such as Common Marsh-bedstraw (*Galium palustre*), Meadowsweet (*Filipendula ulmaria*) and Wild Angelica (*Angelica sylvestris*). These were classed as either W7b, W7c or W1 *Salix cinerea*-*Galium palustre* woodland communities.

Some planted scrub stands were also noted, and included non-native Garden Privet, White-stemmed Bramble (*Rubus cockburnius*), Japanese Rose (*Rosa rugosa*) and Golden-twigg Dogwood (*Cornus sericea* 'Flaviramea'), as well as native species.

Scattered scrub was more frequently recorded on site. The most extensive areas of scattered scrub were located on the steep slopes of the mining bings between Treebanks Farm and Blairmuckhill Farm. These consisted of scattered Gorse and Hawthorn scrub over grazed, semi-improved acid or unimproved neutral grassland, and corresponded to W23a *Ulex europaeus*-*Rubus fruticosus* agg. scrub, *Anthoxanthum odoratum* sub-community, and a form of W21 *Crataegus monogyna*-*Hedera helix* scrub not referable to sub-community. Other stands of scattered scrub on site typically consisted of Hawthorns along field margins. An area of scattered W23a Gorse scrub was noted in the north-west survey buffer, and small, dense Bramble thickets in an area of waste ground by Loan Farm were classed as W24 *Rubus fruticosus* agg.-*Holcus lanatus* underscrub. One stand of scattered willow scrub in the south-west survey buffer, growing in waterlogged rush-pasture/swamp, was classed as a mixture of W1 and W3 woodland.

3.2.4 *Parkland/scattered trees*

Scattered broadleaved trees were recorded along field margins or around buildings, mostly in the west of the Habitat Survey Area. Stands were typically species-poor, and sometimes of planted origin, with Beech commonly the only species present. Sycamore, Downy Birch, Ash, Rowan, Wych Elm, Hawthorn, Goat Willow, Grey Willow and Tree Cotoneaster were also recorded.

The most significant stand of scattered broadleaved trees was present on boggy ground in the west of the site, alongside the closed canopy semi-natural broadleaved woodland stands here. It consisted of scattered Downy Birch over a ground flora including Soft-rush, Purple Moor-grass, Hare's-tail Cottongrass (*Eriophorum vaginatum*) and other bog species, and was classified as W4b/c bog woodland.

3.2.5 *Acid grassland*

Acid grassland was scarce on site, usually in mosaic with neutral or marshy grassland habitats. The most extensive stands were present in the centre and west of the site, with smaller stands in the north and east survey buffers, and other fragments at the edge of conifer plantations and field margins.

Damp unimproved acid grassland was recorded in an area of drained marsh/bog west of the Heart of Scotland services, in mosaic with Soft-rush along the drain lines. This habitat supported a mixture of acid grassland and acid sedge-flush species, including Sweet Vernal-grass, Brown Bent (*Agrostis vinealis*), Wavy Hair-grass (*Avenella flexuosa*), Carnation Sedge (*Carex panicea*), Star Sedge (*C. echinata*), Red Fescue (*Festuca rubra*), Little Shaggy-moss (*Rhytidiadelphus loreus*), Tormentil (*Potentilla erecta*), Meadow Buttercup (*Ranunculus acris*), Marsh Thistle (*Cirsium palustre*), Heath Wood-rush (*Luzula multiflora*), Common Bent, Soft-rush, Common Sedge (*C. nigra*), Compact Rush (*Juncus conglomeratus*), Common Sorrel (*Rumex acetosa*), Papillose Bog-moss (*Sphagnum papillosum*), Common Haircap, Flat-topped Bog-moss and Glaucous Sedge (*C. flacca*). This stand was classified as transitional between U4d *Festuca ovina-Agrostis capillaris-Galium saxatile* grassland, *Luzula multiflora-Rhytidiadelphus loreus* sub-community, and M6a *Carex echinata-Sphagnum fallax/denticulatum* mire, *Carex echinata* sub-community. A second, smaller area of damp unimproved acid grassland was noted in the eastern survey buffer, on an island of drier substrate surrounded by marshland between conifer blocks. This consists of a form of U4d grassland with frequent Common Sedge growing through it, and was classified as transitional between U4d and the M6b *Carex nigra-Nardus stricta* acid flush sub-community.

Dry unimproved acid grassland was present along a ride through coniferous plantation in the northern survey buffer, corresponding to the U5 *Nardus stricta-Galium saxatile* community. Grassy areas of the sward were classed as the U5a Species-poor sub-community, and healthier areas with grazed Heather (*Calluna vulgaris*) and Bilberry were classed as the U5d *Calluna vulgaris-Danthonia decumbens* sub-community. A small stand of U5b *Nardus stricta-Galium saxatile* grassland, *Agrostis canina-Polytrichum commune* sub-community, was noted on a north-facing slope in the south-east of the site, characterised by mounds of Common Haircap within the Mat-grass sward. Flushed acid grassland with sedges, on the slopes of a mining bing in the west of the site corresponded to the U5c *Carex panicea-Viola riviniana* sub-community.

Small fragments of other unimproved U4 *Festuca ovina-Agrostis capillaris-Galium saxatile* grassland sub-communities were also noted within the Habitat Survey Area, including the U4a Typical sub-community, U4d sub-community, and U4e *Vaccinium myrtillus-Avenella flexuosa* sub-community. The U4a sub-community was characterised by Sheep's-fescue (*Festuca ovina*), Sweet Vernal-grass, Heath Bedstraw, Tormentil and pleurocarpous mosses such as Springy Turf-moss. The U4e sub-community contained Sheep's-fescue, Heath Bedstraw, Tormentil, grazed Bilberry and Wavy Hair-grass.

A more species-rich acid grassland sward was recorded on thin soils on the spoil tip in the centre of the site, in mosaic with Crested Dog's-tail (*Cynosurus cristatus*) dominated neutral grassland. This had an open sward characterised by frequent Mouse-ear Hawkweed (*Pilosella officinarum*), showing similarities to the CG7 *Festuca ovina-Pilosella officinarum-Thymus drucei* grassland community but with Wild Thyme (*Thymus drucei*) and other calcicoles absent. It was classified as U1d *Festuca ovina-Agrostis capillaris-Rumex acetosella* grassland, *Anthoxanthum odoratum-Lotus corniculatus* sub-community. The sward included many small herbs, including Grand-toothed Hawkweed (*Hieracium grandidentis*), Common Hawkweed (*H. triviale*), Mouse-ear Hawkweed, Meadow Buttercup, Cat's-ear (*Hypochaeris radicata*), Ribwort Plantain (*Plantago lanceolata*), White Clover (*Trifolium repens*), Red Clover (*T. pratense*), Autumn Hawkbit (*Scorzoneroides autumnalis*), Daisy (*Bellis perennis*), Common Bird's-foot-trefoil (*Lotus corniculatus*), Heath Bedstraw, Devil's-bit Scabious (*Succisa pratensis*), Common Ragwort (*Jacobaea vulgaris*), Dandelion (*Taraxacum* agg.), Common Milkwort (*Polygala vulgaris*), Meadow Buttercup, Perforate St John's-wort (*Hypericum perforatum*), Eyebright (*Euphrasia* agg.), Sheep's Sorrel (*Rumex acetosella*) and Lesser Trefoil (*Trifolium dubium*). Hairy Lady's-mantle (*Alchemilla filicaulis*) was noted in one location. Sparse grasses included Crested Dog's-tail, Early Hair-grass (*Aira praecox*), Silvery Hair-grass (*A. caryophyllea*), Sweet Vernal-grass, Red Fescue, Wavy Hair-grass, Sheep's-fescue and Mat-grass. Bryophytes present in the turf and on rocky exposures included Springy Turf-moss, Juniper Haircap (*Polytrichum juniperinum*), Bristly Haircap (*P. piluliferum*), Common Haircap, Waved Silk-moss (*Plagiothecium undulatum*), Woolly Fringe-moss (*Racomitrium languinosum*), Plait-moss (*Hypnum*) species and Dense Fringe-moss (*R. ericoides*), along with *Cladonia* lichen species. Where the sward transitioned to neutral grassland, Crested Dog's-tail cover increased, and larger herbs such as Meadow Vetchling (*Lathyrus pratensis*), Common Knapweed (*Centaurea nigra*) and Lesser Stitchwort (*Stellaria graminea*) became more frequent.

Semi-improved acid grassland stands were mostly fragmentary alongside other habitats, and typically corresponded to the U4b *Festuca ovina-Agrostis capillaris-Galium saxatile* grassland, *Holcus lanatus-Trifolium repens* sub-community. Yorkshire-fog (*Holcus lanatus*) and Red Fescue were frequent, and other species noted in this assemblage included Devil's-bit Scabious, Common Bent, Sheep's-fescue, Sweet Vernal-grass, Heath Bedstraw, Tormentil, Mat-grass, Bilberry and Ribwort Plantain. Some U4b stands also contained frequent Crested Dog's-tail. One larger area of semi-improved acid grassland was noted in the western survey buffer, consisting of a grazed, species-poor Mat-grass sward with frequent Crested Dog's-tail, probably the result of past seeding. This was classed as a form of U5 grassland.

3.2.6 Neutral grassland

Unimproved neutral grassland was frequent across the site, typically along road verges, rides through plantation, and field margins. Most stands corresponded to the MG1 *Arrhenatherum elatius* grassland community, characterised by a rank grassland sward dominated by False Oat-grass (*Arrhenatherum elatius*), Cock's-foot (*Dactylis glomerata*) and occasionally Common Couch (*Elymus repens*). Large herbs such as Hogweed (*Heracleum sphondylium*), Cow Parsley (*Anthriscus sylvestris*), Common Nettle and Creeping Thistle (*Cirsium arvense*) were typical associates. Most stands consisted of the MG1b *Urtica dioica* sub-community, but grassier examples with higher Red Fescue, Common Bent and Yorkshire-fog cover corresponded to the MG1a *Festuca rubra* sub-community. Along road verges and field margins, the MG1b sub-community was often found in mosaic with tall ruderal vegetation, typically Common Nettle, Creeping Thistle or Rosebay Willowherb (*Chamaenerion angustifolium*) dominated swards. Occasional damper stands with frequent Meadowsweet were classified as the MG1c *Filipendula ulmaria* sub-community, and more species-rich stands with frequent Common Knapweed and other

herbs such as Meadow Vetchling and Red Clover were classified as the MG1e *Centaurea nigra* sub-community.

More diverse neutral grassland stands, with less rank grass cover, were classed as the MG5 *Cynosurus cristatus-Centaurea nigra* community. These were present along grassy tracks and on spoil tips and mining bings, where they often formed a mosaic with semi-improved neutral grassland and acid grassland communities. Crested Dog's-tail and Common Knapweed were characteristic, with Common Bent, Autumn Hawkbit, Harebell, Red Clover, Eyebright, Ribwort Plantain, Meadow Buttercup, Yarrow (*Achillea millefolium*) and Common Mouse-ear frequent associates, and Lady's Bedstraw (*Galium verum*) occasional in some stands. Stands with frequent Meadow Vetchling were classed as the MG5a *Lathyrus pratensis* sub-community, and a well-grazed stand of neutral grassland on one of the mining bings in the west of the site corresponded to the MG5c *Danthonia decumbens* sub-community. The sward included Common Knapweed, Crested Dog's-tail, Common Bird's-foot-trefoil, White Clover, Ribwort Plantain, Daisy, Cat's-ear, Meadow Buttercup, Mouse-ear-hawkweed, Red Fescue, Sweet Vernal-grass, Devil's-bit Scabious, Springy Turf-moss, Common Bent, Heath-grass (*Danthonia decumbens*), Dandelion, Common Ragwort, orchid (*Dactylorhiza*) species and Hawkweed (*Hieracium*) species.

Two damp unimproved neutral grassland communities were also frequent in the Habitat Survey Area, typically in mosaic with marshy grassland or rush-pasture stands. The MG9 *Holcus lanatus-Deschampsia cespitosa* grassland community comprised a rank, tussocky sward dominated by Tufted Hair-grass. The MG10 *Holcus lanatus-Juncus effusus* rush-pasture community typically consisted of frequent Soft-rush tussocks within a grassy matrix including frequent Yorkshire-fog. Most stands corresponded to the MG10a *Juncus effusus* sub-community, with frequent Soft-rush (or sometimes Sharp-flowered-rush), but occasional damp grassland stands dominated by Yorkshire-fog or Creeping Soft-grass, with Soft-rush rare or absent, were referred to this community. Stands with co-abundant Tufted Hair-grass and Soft-rush were classed as transitional between MG9 and MG10a.

Semi-improved neutral grassland, predominantly consisting of enclosed grazing pasture, was widespread around Loan Farm and Netherton Farm in the east of the site, with smaller areas in the north and south-west of the Habitat Survey Area. The most widespread type was the MG6 *Lolium perenne-Cynosurus cristatus* grassland community, with abundant Perennial Rye-grass (*Lolium perenne*) and Crested Dog's-tail, along with smaller quantities of Red Fescue, Common Bent, Creeping Bent (*Agrostis stolonifera*) and Yorkshire-fog. White Clover and Creeping Buttercup were frequent, and Common Mouse-ear, Ribwort Plantain, Meadow Buttercup, Yarrow and Daisy were also noted. Two sub-communities were identified: the MG6a Typical sub-community, and the more diverse MG6b *Anthoxanthum odoratum* sub-community. Perennial Rye-grass cover was lower in the MG6b sub-community, with more Common Bent and Red Fescue, occasionally Sweet Vernal-grass, Common Sorrel, Cat's-ear, and higher bryophyte cover than in MG6a. Damper corners of these pastures often supported grazed, semi-improved MG10a *Holcus lanatus-Juncus effusus* rush-pasture, with rush cover relatively reduced and more Perennial Rye-grass and Crested Dog's-tail cover within the grass sward.

In the south-west of the site, a large field of rough pasture corresponding to the MG9 *Holcus lanatus-Deschampsia cespitosa* community showed signs of agricultural improvement and was also classed as semi-improved neutral grassland. Amongst the Tufted Hair-grass tussocks, Crested Dog's-tail, Common Bent, Soft-rush, Yorkshire-fog, Creeping Buttercup, Meadow Buttercup, Perennial Rye-grass, Common Mouse-ear, Oval Sedge (*Carex leporina*), Common Ragwort, Creeping Bent, Velvet Bent (*Agrostis canina*), Sweet Vernal-grass, White Clover, Broad-leaved Dock (*Rumex obtusifolius*), Curled Dock (*R. crispus*) and Creeping Soft-grass were recorded. The MG13 *Agrostis stolonifera-Alopecurus geniculatus* grassland community was also noted as part of some MG6 stands, on more waterlogged substrates. This was characterised by Creeping Bent, Marsh Foxtail

(*Alopecurus geniculatus*) and occasional Floating Sweet-grass (*Glyceria fluitans*). A sizable stand of inundation MG13-type grassland is described below in Section 3.2.12.

3.2.7 Improved grassland

Improved grassland was widespread, with much of the centre of the site, along with areas around Torrance Farm and Treebanks Farm, consisting of improved grazing pasture. These fields consisted of MG7 *Lolium perenne* leys, or MG6 *Lolium perenne-Cynosurus cristatus* grasslands with high Perennial Rye-grass cover, and were species-poor. Perennial Rye-grass typically dominated, with White Clover and Creeping Buttercup the only common associates; such stands were classed as the MG7a *Lolium perenne-Trifolium repens* ley. One field had been sown with Timothy (*Phleum pratense*), and was perhaps best classed as the MG7b *Lolium perenne-Poa trivialis* ley, in which Timothy is constant and can be abundant.

3.2.8 Marsh/marshy grassland

This habitat was frequent on site, with rush-pastures forming the most widespread examples, predominantly along the low-lying drainage line running along the northern Site boundary. The most frequent community was the M23 *Juncus effusus/acutiflorus-Galium palustre* rush-pasture, present on waterlogged substrates and dominated by rushes. The M23b *Juncus effusus* sub-community was more often encountered, and typically consisted of a dense sward of Soft-rush with scattered Tufted Hair-grass and herbs including Meadowsweet, Wild Angelica, Common Marsh-bedstraw and Common Sorrel. Bryophytes typically consisted of Pointed Spear-moss (*Calliergonella cuspidata*), Common Feather-moss, Rough-stalked Feather-moss and Bifid Crestwort (*Lophocolea bidentata*).

An unusually species-rich stand of M23b was noted along the edge of the boundary with Heart of Scotland services, in which a range of herbs and sedges including Marsh Willowherb (*Epilobium palustre*), Common Sorrel, Common Spotted-orchid (*Dactylorhiza fuchsii*), Soft-rush, Compact Rush, Wild Angelica, Sneezewort (*Achillea ptarmica*), Ribwort Plantain, Meadow Vetchling, Glaucous Sedge, Common Knapweed, Silverweed (*Potentilla anserina*), Marsh Thistle, Creeping Thistle, Common Bent, Oval Sedge, Tufted Vetch (*Vicia cracca*), Common Sedge, Selfheal (*Prunella vulgaris*), Great Willowherb (*E. hirsutum*) and Marsh Ragwort (*Jacobaea aquatica*).

Also frequent on site was the MG10a rush-pasture community, with many stands forming marshy mosaics with M23b or MG9 vegetation. The M23a *Juncus acutiflorus* rush-pasture sub-community was less frequent on site. This was dominated by Sharp-flowered Rush, and was often present in smaller stands within a larger area of M23b. A more extensive, grassy M23a stand was identified on the north side of a large mining bing in the south-west survey buffer.

Purple Moor-grass dominated marshy grassland was scarce in the Habitat Survey Area, where it was occasionally recorded within M23 mosaics. This habitat typically corresponded to the M25b *Anthoxanthum odoratum* sub-community, with the Purple Moor-grass sward also including species such as Mat-grass, Sweet Vernal-grass, Heath Bedstraw and Heath Wood-rush (*Luzula multiflora*). One small stand of M25 mire in the south-west survey buffer was more species-rich, containing herbs such as Wild Angelica and Meadowsweet and several sedges; this was classed as the M25c *Angelica sylvestris* sub-community.

Small stands of M27 *Filipendula ulmaria-Angelica sylvestris* mire were noted within M23 rush-pasture swards or along drainage ditches. These were characterised by dense Meadowsweet with frequent Wild Angelica and Marsh Thistle. Most stands were assigned to the M27c *Juncus effusus-Holcus lanatus* sub-community, with Soft-rush constant in the sward. A couple of stands corresponded to the M27b *Urtica dioica-Vicia cracca* sub-community, with Common Nettle frequent and other species such as Great Willowherb, Creeping Thistle and Cleavers scattered through. Also noted in a couple of locations was

the S28 *Phalaris arundinacea* tall-herb fen, consisting of a dense, species-poor sward of Reed Canary-grass (*Phalaris arundinacea*).

3.2.9 Tall herb and fern

Tall ruderal vegetation (JNCC Phase 1 habitat C3.1) was frequently noted along road verges, field margins and plantation rides, often in mosaic with unimproved neutral grassland (typically MG1 or MG9). Species-poor stands dominated by Common Nettle were classified as the OV24 *Urtica dioica-Galium aparine* community, with some containing frequent Cleavers. Some were assigned to the OV24a Typical sub-community. Stands with both Common Nettle and Creeping Thistle were classed as the OV25 *Urtica dioica-Cirsium arvense* community, with grassy examples referable to the OV25a *Holcus lanatus-Poa annua* sub-community.

Stands dominated by Rosebay Willowherb were classified as the OV27 *Chamaenerion angustifolium* community. Some stands consisting of little other than Rosebay Willowherb were not assigned to sub-community, but most contained Common Nettle and/or Creeping Thistle and corresponded to the OV27b *Urtica dioica-Cirsium arvense* sub-community.

Several areas of rush-pasture contained dense patches of Great Willowherb, classed as the OV26 *Epilobium hirsutum* community. Meadowsweet, Wild Angelica, Soft-rush and Marsh Thistle were present within these stands, corresponding to the OV26c *Filipendula ulmaria-Angelica sylvestris* sub-community.

Non-NVC stands of tall herb and fern were also occasionally noted along road verges, consisting of Sweet Cicely (*Myrrhis odorata*), Dotted Loosestrife (*Lysimachia punctata*) and Scaly Male-fern (*Dryopteris affinis*).

3.2.10 Wet modified bog

Wet modified bog stands were identified in the south-west of the site and south-west survey buffer, and in the northern survey buffer. All stands showed signs of modification, through draining, grazing and trampling, but the most intact bog was located on low-lying ground west of the Heart of Scotland services and south of Blairmuckhill Farm. This was a raised bog, with the central raised area consisting of M18 *Erica tetralix-Sphagnum papillosum* mire and some M17 *Trichophorum germanicum-Eriophorum vaginatum* mire, and the margins consisting of a mix of M20 *Eriophorum vaginatum* mire and M25 *Molinia caerulea-Potentilla erecta* mire.

The M18 mire was classified as the M18a *Sphagnum magellanicum-Andromeda polifolia* sub-community. Common Cottongrass (*Eriophorum angustifolium*) and Cross-leaved Heath (*Erica tetralix*) were abundant, with Hare's-tail Cottongrass, Purple Moor-grass, Deergass (*Trichophorum germanicum*), Heather, Brown Bent, Tormentil, Heath Spotted-orchid (*Dactylorhiza maculata*), Carnation Sedge, Cranberry (*Vaccinium oxycoccos*) and Heath Bedstraw also noted. The bryophyte layer was relatively intact, with Cow's-horn Bog-moss (*Sphagnum denticulatum*), Red Bog-moss (*S. capillifolium*), Red-stemmed Feather-moss (*Pleurozium schreberi*), Papillose Bog-moss, Bog Bead-moss (*Aulacomnium palustre*), Heath Plait-moss, Feathery Bog-moss (*S. cuspidatum*), Common Haircap, and Magellanic Bog-moss (*S. magellanicum*) recorded. The M17 mire was classed as the M17a *Drosera rotundifolia-Sphagnum* species sub-community, and consisted of similar species to the M18 mire but with more Deergass and less Cross-leaved Heath. The M20 and M25 mire around the bog margins was more species-poor, with abundant Hare's-tail Cottongrass and Purple Moor-grass.

Other wet modified bog stands in this part of the Habitat Survey Area were typically found in mosaic with acid flush. M20a *Eriophorum vaginatum* mire, Species-poor sub-community, was noted here, with Hare's-tail Cottongrass tussocks dominant and scattered Cross-leaved Heath, Wavy Hair-grass, Bilberry and Purple Moor-grass associated, over a bryophyte layer

including Red Bog-moss, Flat-topped Bog-moss and Common Haircap. Some of the M25 mire stands here was assigned to the M25a *Erica tetralix* sub-community, based on the presence of ericoids such as Cross-leaved Heath, Heather and Bilberry. The acid flush habitat present was the M6c *Carex echinata-Sphagnum fallax/denticulatum* mire, *Juncus effusus* sub-community, with a sward dominated by Soft-rush over Flat-topped Bog-moss, Blunt-leaved Bog-moss and Common Haircap.

In the northern site buffer a significant stand of wet modified bog was identified to the north-west of Loan Farm. This may be a modified raised bog, with conifer plantations now surrounding the remnant mire. Hare's-tail Cottongrass, Purple Moor-grass, Cross-leaved Heath, Common Haircap, Strict Haircap (*Polytrichum strictum*), Bilberry, Flat-topped Bog-moss, Red Bog-moss, Bog Bead-moss, Heather, Heath Plait-moss, Heath Bedstraw, Wavy Hair-grass, Common Cottongrass, Heath Star-moss (*Campylopus introflexus*), Papillose Bog-moss and Narrow Buckler-fern (*Dryopteris carthusiana*) were noted in the sward. Scattered Downy Birch and Scots Pine were spread over nearly a third of the open mire, classified as an open form of W4b/c *Betula pubescens-Molinia caerulea* bog woodland, *Juncus effusus/Sphagnum* sub-communities.

3.2.11 Acid/neutral flush

Flush habitats were rare on site, with the most extensive area of acid flush present to the west of Heart of Scotland services. M6c *Carex echinata-Sphagnum fallax/denticulatum* acid flush, *Juncus effusus* sub-community, was the most frequent flush habitat noted, consisting of a species-poor Soft-rush sward with Blunt-leaved Bog-moss, Flat-topped Bog-moss, Common Haircup, Narrow Buckler-fern, Heath Bedstraw, Common Sedge, Star Sedge, Tormentil, Common Cottongrass, a little Hare's-tail Cottongrass, Velvet Bent (*Agrostis canina*) and Wavy Hair-grass associated. M23b *Juncus effusus* neutral flush was also noted in several stands, in mosaic with M6c, and was characterised by a lack of *Sphagnum* and *Polytrichum* mosses, with Pointed Spear-moss more typical, and a more diverse range of vascular plants.

A small disused quarry within conifer plantation in the northern survey buffer had a waterlogged and well vegetated floor classed as M6 acid flush. A mixture of sub-communities was recorded, with some areas dominated by Soft-rush referable to the M6c *Juncus effusus* sub-community, and others dominated by Star Sedge or Common Sedge classified as M6a *Carex echinata* or M6b *Carex nigra-Nardus stricta* sub-communities.

3.2.12 Swamp and aquatic communities

Swamp habitats were recorded in the east of the site and eastern survey buffer, and in the west of the site on the low-lying ground south of Blairmuckhill Farm. The most extensive area of swamp was present in the eastern survey buffer south of Torrance Farm, and consisted of a reedbed along the north side of a large pond. This was classified as S4a *Phragmites australis* swamp, *Phragmites australis* sub-community. Common Reed (*Phragmites australis*), was dominant, with Soft-rush, Marsh Thistle, Marsh Horsetail (*Equisetum palustre*) and Pointed Spear-moss scattered through. Another, smaller stand of S4a swamp was present along a drainage ditch in the west of the site.

Small stands of S9 *Carex rostrata* and S10 *Equisetum fluviatile* swamp were noted, in the east of the Habitat Survey Area in the valley south of Torrance Farm and along a drain east of Netherton Farm. These were characterised by dominant Bottle Sedge (*Carex rostrata*) or Water Horsetail (*Equisetum fluviatile*) emerging from standing or slow-flowing water, and were usually present in mosaic with M23b rush-pasture. Species-poor stands of Bottle Sedge were classed as the S9a *Carex rostrata* sub-community, whilst stands with some Water Horsetail in the sward were classed as the S9b *Menyanthes trifoliata-Equisetum fluviatile* sub-community. The S10 swamp stands were not assigned to sub-community.

One small area of scattered willow scrub in the western survey buffer also supported S9b swamp, along with M23 rush-pasture, in the open areas of the stand.

S12 *Typha latifolia* swamp was also present in a couple of locations, with the largest stand recorded in the valley north of Netherton Farm. This habitat was dominated by Bulrush (*Typha latifolia*), and also contained Sharp-flowered Rush, Great Willowherb, Soft-rush, Marsh Thistle, Pointed Spear-moss, Hart's-tongue Thyme-moss (*Plagiomnium undulatum*), Marsh Willowherb, Common Sorrel, Common Feather-moss, Rough-stalked Feather-moss, Broad-leaved Dock and Wild Angelica. Based on the presence of rushes and Great Willowherb, it was classed as the S12b *Mentha aquatica* sub-community. Another S12 swamp, found in a vegetated pond in the western survey buffer, was assigned to the S12d *Carex rostrata* sub-community. This stand comprised a more open sward of Bulrush, Lesser Spearwort (*Ranunculus flammula*), Bog Pondweed (*Potamogeton polygonifolius*), Soft-rush, Marsh Horsetail, Bottle Sedge, Pedunculate Water-starwort (*Callitriche brutia*) and Common Duckweed (*Lemna minor*). Two other, smaller S12 stands were noted, by the pond in the eastern survey buffer (a more extensive stand was noted just outside the Habitat Survey Area), and along a ditch in the northern survey buffer.

The most frequently encountered swamp habitat was S22 *Glyceria fluitans* water-margin vegetation. This was present along drainage ditches and in wet hollows in semi-improved neutral grazing pastures in the east of the site. Stands along drainage ditches typically consisted of a species-poor sward of emergent Floating Sweet-grass, corresponding to the S22a *Glyceria fluitans* sub-community. One stand along the main drainage ditch north of Netherton Farm had clumps of Branched Bur-reed (*Sparganium erectum*) scattered through, and was classed as the S22b *Sparganium erectum-Mentha aquatica* sub-community. Stands in wet inundation hollows in fields were generally referable to the S22c *Alopecurus geniculatus* sub-community. One large, saturated field corner south of Blairmuckhill Farm was classed as transitional between MG13 and S22c, consisting of a grazed, grassy sward of Floating Sweet-grass, Marsh Foxtail and Creeping Bent, with Marsh Ragwort (*Jacobaea aquaticus*), Jointed Rush (*Juncus articulatus*), Bog Stitchwort (*Stellaria alsine*) and Yorkshire-fog also noted.

Several other swamp communities were also identified, but were rare in the Habitat Survey Area. S14 *Sparganium erectum* and S19 *Eleocharis palustris* swamp were present in the pond in the eastern survey buffer, along with S12 (see above) and the A9 *Potamogeton natans* aquatic community. The pond vegetation included Common Spike-rush (*Eleocharis palustris*), Branched Bur-reed, Broad-leaved Pondweed (*Potamogeton natans*), Bulrush, Jointed Rush, Lesser Spearwort, Brooklime (*Veronica beccabunga*), Common Duckweed, Cuckooflower (*Cardamine pratensis*) and Marsh Thistle. The pond itself was classed as the Phase 1 habitat G1.2 Standing water – mesotrophic, based on the vegetation assemblage evident at the time of survey. The S23 Other water-margin vegetation community was noted along a stream east of Treebanks Farm in the western survey buffer, characterised by Brooklime at the stream margins. Finally, the S27 *Carex rostrata-Comarum palustre* tall-herb fen community was noted within an area of M23b rush-pasture west of the pond in the eastern survey buffer, with Bottle Sedge and Marsh Cinquefoil (*Comarum palustre*) increasing in cover under a less dense rush sward. This corresponded to the S27a *Carex rostrata-Equisetum fluviatile* sub-community.

3.2.13 Cultivated/disturbed land

Four habitat types are included within this classification: J1.1 Arable land, J1.2 Amenity grassland, J1.3 Ephemeral/short perennial vegetation, and J1.4 Introduced shrub.

One arable field was present in the northern survey buffer. Species noted growing in the margins included Common Chickweed (*Stellaria media*), Sticky Mouse-ear (*Cerastium glomeratum*), Broad-leaved Willowherb (*Epilobium montanum*), Common Hemp-nettle (*Galeopsis tetrahit*), Creeping Buttercup, Corn Spurrey (*Spergula arvensis*), Redshank

(*Persicaria maculosa*), Perennial Rye-grass, White Clover, Annual Meadow-grass (*Poa annua*) and Northern Dock (*Rumex longifolius*).

Amenity grassland was recorded in the northern survey buffer (a play park at the south end of Blackridge) and by Netherton Farm (a garden). Ephemeral/short perennial vegetation was more frequent, being present in small quantities along tracks, around field gates, and colonising bare aggregate. Only the larger stands were mapped: an area of disturbed ground at Blairmuckhill Farm, a farm track along the disused railway line running through the centre of the site, a gravel area next to the track south of Netherton Farm, and a triangle of aggregate by the road junction at the south edge of Blackridge. Not all stands were assigned to an NVC community, but the following were noted:

- OV10 *Poa annua*-*Senecio vulgaris* community;
- OV13 *Stellaria media*-*Capsella bursa-pastoris* community;
- OV18b *Polygonum aviculare*-*Matricaria discoidea* community, *Plantago major* sub-community; and
- OV21 *Poa annua*-*Plantago major* community.

Some of these ephemeral/short perennial stands were quite diverse, such as the small triangle of aggregate at the south edge of Blackridge. This held Grand-toothed Hawkweed, Groundsel, Prickly Sow-thistle (*Sonchus asper*), Cock's-foot, Red Fescue, Selfheal, *Cladonia* lichen species, Rosebay Willowherb, Common Bent, Tufted Hair-grass, Ribwort Plantain, Creeping Buttercup, Hairy Bitter-cress (*Cardamine hirsuta*), Cow Parsley, Crested Dog's-tail, Yorkshire-fog, Dandelion, Autumn Hawkbit, Willowherb species, *Peltigera* lichen species, Thyme-leaved Speedwell (*Veronica serpyllifolia*), Greater Plantain, Sitka Spruce seedlings, Smooth Lady's-mantle (*Alchemilla glabra*), Greater Bird's-foot-trefoil (*Lotus pedunculatus*), Heath Speedwell (*V. officinalis*), Sneezewort, White Clover, Procumbent Pearlwort (*Sagina procumbens*), Colt's-foot (*Tussilago farfara*), Garden Asparagus (*Asparagus officinalis*), Common Ragwort, Field Horsetail (*Equisetum arvense*) and Juniper Haircap. The Garden Asparagus record was of local interest, being the second record for Lanarkshire (Vice-county 77), although it is a non-native plant and not of conservation concern.

Along the B718, the build-up of road salt along the edges of the road has led to the colonisation of a salt-tolerant vegetation assemblage in places, with Reflexed Saltmarsh-grass (*Puccinella distans*), Lesser Sea-spurrey (*Spergularia marina*), Spear-leaved Orache (*Atriplex prostrata*) and Common Orache (*A. patula*) noted. This assemblage is commonly found along inland road margins.

Small, introduced shrub stands were noted in several places. These included White-stemmed Bramble, Bridewort (*Spiraea* agg.) and Snowberry (*Symphoricarpos albus*).

3.2.14 Hedgerow

Planted hedgerows were present along the B718 and the north edge of the M8 motorway, with smaller, less extensive examples elsewhere. None were assessed as species-rich, and the majority were 'defunct' (i.e. not stock-proof, although usually reinforced with fencing). Hawthorn was the dominant component, with most examples closest to the W21 *Crataegus monogyna*-*Hedera helix* scrub community. Beech, Dog-rose, Blackthorn, Holly, Sycamore, Gorse, Ash, Wych Elm and Guelder-rose were also recorded in these, at much lower frequencies. One Blackthorn-dominated hedgerow, with Hawthorn, Guelder-rose and Dog-rose also present, was classed as a form of W22 *Prunus spinosa*-*Rubus fruticosus* agg. scrub, and a couple of planted Beech hedgerows were also recorded. One row of Hawthorn and Ash trees at a field margin in the north-east of the site was classed as J2.3.2 Hedgerow with trees (defunct, species-poor).

3.2.15 Built habitats

Built habitats within the Habitat Survey Area included farms and residential buildings, tarmacked and gravel roads/tracks, ruined buildings, a mast structure by Heart of Scotland services, and a wind turbine on Torrance Wind Farm.

3.3 Vascular Plants

A total of 244 vascular plants were recorded within the Habitat Survey Area, reflecting the diversity of habitats present, with the total increased by planted tree and shrub species. Table C1 in Annex C provides a full list of vascular plant species recorded, along with notes on their conservation status where pertinent. Table C2 in Annex C also lists bryophyte species that were selectively recorded during the survey.

Only one recorded vascular plant species was of conservation concern: Corn Spurrey (*Spergula arvensis*), which is assessed as Vulnerable on The Vascular Plant Red Data List for Great Britain (see <https://bsbi.org/taxon-lists>). It is an arable weed that is widespread in Central Scotland, and present throughout Lanarkshire, and was recorded along a couple of field margins in the Habitat Survey Area. Common Milkwort (*Polygala vulgaris*) and Hairy Lady's-mantle (*Alchemilla filicaulis*), both recorded on the vegetated spoil tip in the centre of the site, are locally uncommon in Lanarkshire.

3.4 Other Taxa

Incidental sightings of scarce birds encountered during the survey include Barn Owl, Peregrine, Sparrowhawk, Kestrel and Buzzard. These observations have been incorporated into TA 11.1: Baseline Ornithology Report; and TA 11.2: Baseline Ornithology Report Confidential Annex. Furthermore, signs of protected species recorded during the survey include a badger sett, badger snuffle holes and a potential otter couch. These observations have been incorporated into TA 10.3: Protected Species Surveys.

4 DISCUSSION

The Habitat Survey Area supported 30 Phase 1 habitat types, which included a wide range of NVC communities. However, much of the Habitat Survey Area consisted of semi-improved and improved grazing pasture of relatively low conservation interest. Habitats of high conservation value were as follows:

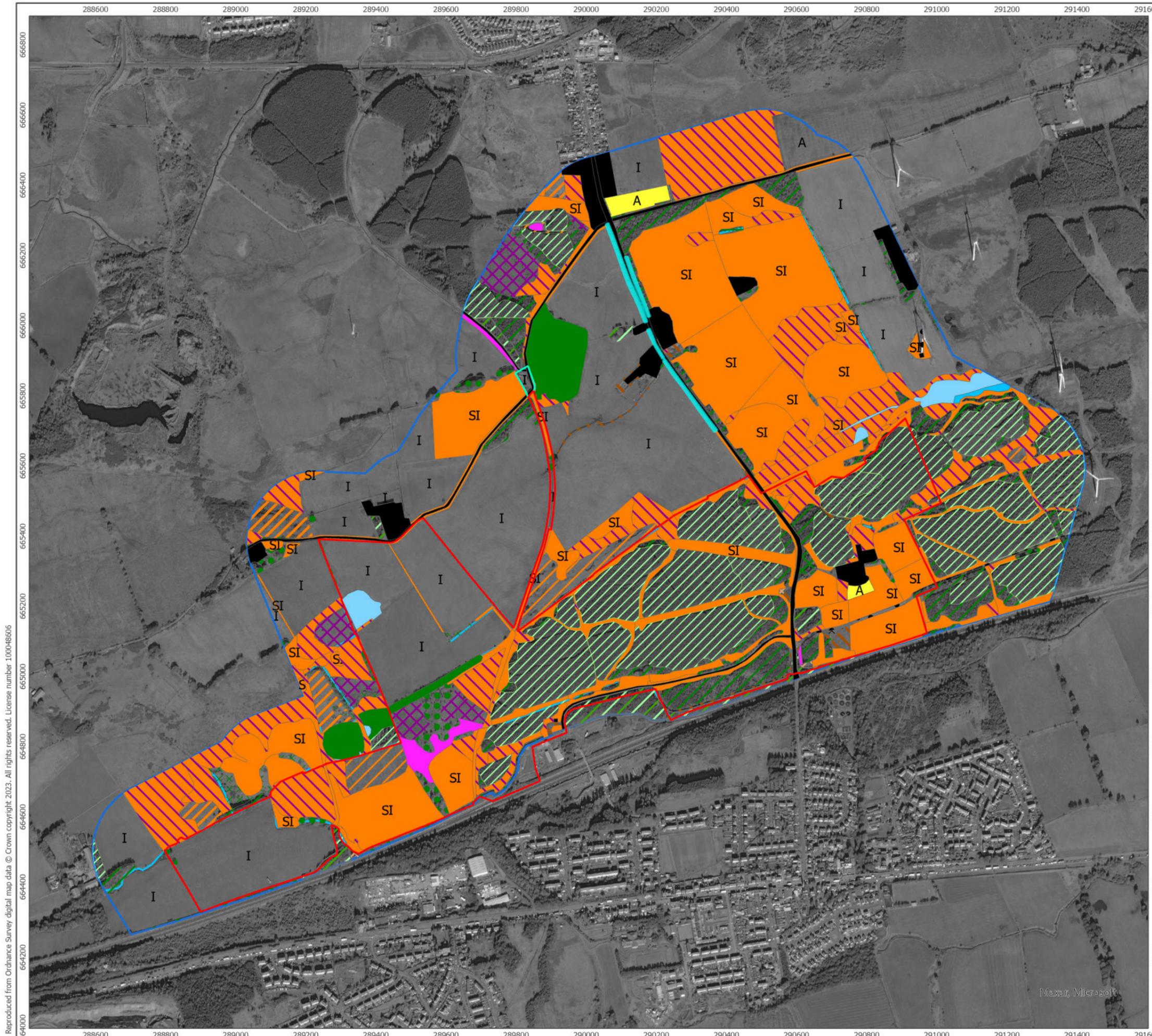
- Areas of broadleaved semi-natural woodland (including bog woodland) and wet modified bog (including an area of raised bog), both of which included some stands of Annex I habitats;
- Areas of rush-pasture, marsh, swamp and pond, predominantly present along the bottom of the valley running west-south-west to east-north-east through the site, which supported a reasonably diverse range of vegetation communities, were highly groundwater-dependent, and included several SBL and LBAP priority habitats; and
- Vegetated mining bings and spoil heaps, which supported species-rich acid and neutral grassland communities, and were examples of SBL and LBAP priority habitats.

A total of 244 vascular plant species were recorded within the Habitat Survey Area, although only one species of conservation concern was recorded (Corn Spurrey, an arable weed).

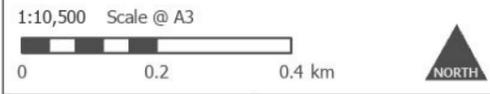
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ANNEX A: FIGURES



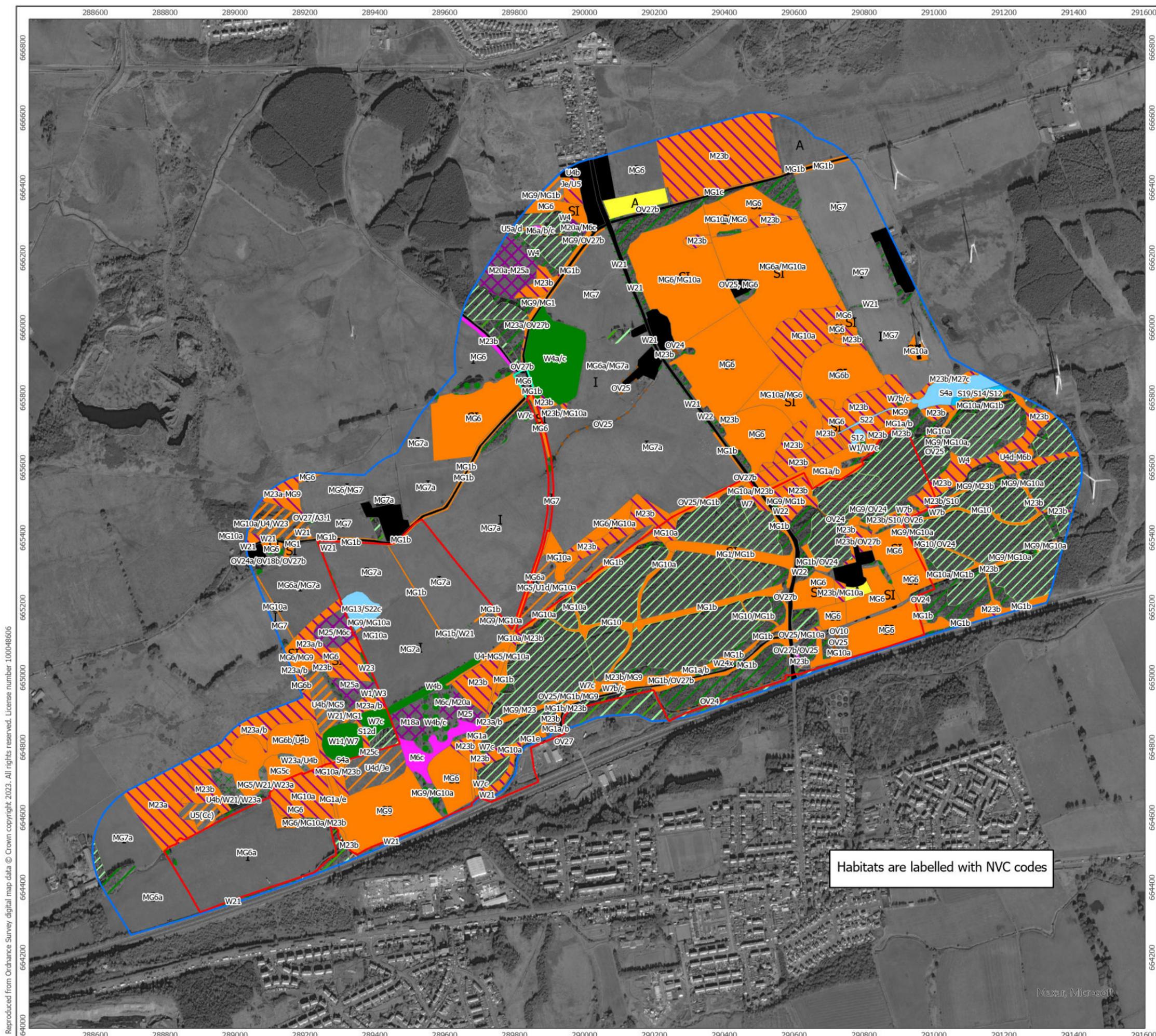
- Site Boundary
- Future Application Boundary
- Habitat Survey Area
- Phase 1 Habitat Survey Results**
- Acid grassland - semi-improved
- Acid grassland - unimproved
- Bare ground
- Broadleaved parkland/scattered trees
- Broadleaved woodland - semi-natural
- Broadleaved woodland - plantation
- Buildings and Roads
- Coniferous woodland - plantation
- A Cultivated/disturbed land - amenity grassland
- A Cultivated/disturbed land - arable
- X X Cultivated/disturbed land - ephemeral/short perennial
- X X Cultivated/disturbed land - introduced shrub
- Defunct hedge - species-poor
- Flush and spring - acid/neutral flush
- Hedge with trees - species-poor
- I Improved grassland
- Intact hedge - species-poor
- Marsh/marshy grassland
- Mixed woodland - plantation
- SI Neutral grassland - semi-improved
- Neutral grassland - unimproved
- Other tall herb and fern - non ruderal
- Other tall herb and fern - ruderal
- X X Scrub - dense/continuous
- X X Scrub - scattered
- Standing water - mesotrophic
- Swamp
- X X Wet modified bog



Produced By: ST	Ref: 3959-REP-025
Checked By: SC	Date: 2/16/2023

Phase One Habitat Survey Results
Figure 10.1.1

Torrance Wind Farm Extension II
Technical Appendix 10.1: Habitats



Site Boundary

Future Application Boundary

Habitat Survey Area

Phase 1 Habitat Survey Results

- Acid grassland - semi-improved
- Acid grassland - unimproved
- Bare ground
- Broadleaved parkland/scattered trees
- Broadleaved woodland - semi-natural
- Broadleaved woodland - plantation
- Buildings and Roads
- Coniferous woodland - plantation
- Cultivated/disturbed land - amenity grassland
- Cultivated/disturbed land - arable
- Cultivated/disturbed land - ephemeral/short perennial
- Cultivated/disturbed land - introduced shrub
- Defunct hedge - species-poor
- Flush and spring - acid/neutral flush
- Hedge with trees - species-poor
- Improved grassland
- Intact hedge - species-poor
- Marsh/marshy grassland
- Mixed woodland - plantation
- Neutral grassland - semi-improved
- Neutral grassland - unimproved
- Other tall herb and fern - non ruderal
- Other tall herb and fern - ruderal
- Scrub - dense/continuous
- Scrub - scattered
- Standing water - mesotrophic
- Swamp
- Wet modified bog

1:10,500 Scale @ A3

0 0.2 0.4 km

NORTH

Habitats are labelled with NVC codes

Produced By: ST	Ref: 3959-REP-026
Checked By: SC	Date: 2/16/2023

NVC Habitat Survey Results
Figure 10.1.2

Torrance Wind Farm Extension II
Technical Appendix 10.1: Habitats

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ANNEX B: HABITAT SURVEY DATA
Table B1: Habitat polygon data

Polygon no.	Phase 1 code	Phase 1 habitat	NVC code	NVC ratio	GWDTE assessment	Notes
1	C3.1	Tall herb and fern - tall ruderal	OV27b		Low	
2	B4	Improved grassland	MG7a		Low	
3	A1.1.2	Broadleaved woodland - plantation	A1.1.2		Low	Row of planted Rowan (<i>Sorbus aucuparia</i>)
4	C3.1	Tall herb and fern - tall ruderal	OV25:MG7	80:20	Low	Along field boundary
5	A3.1	Scattered broadleaved trees	A3.1		Low	Beech (<i>Fagus sylvatica</i>) and Hawthorn (<i>Crataegus monogyna</i>)
6	B4	Improved grassland	MG7:OV25:MG6a:OV18b	70:15:10:5	Low	
7	B4	Improved grassland	MG7a:MG10a	95:5	Low	
8	B2.2	Neutral grassland - semi-improved	MG6a:MG5a:MG1b:OV25a	60:25:10:5	Low	MG5a - Crested Dog's-tail (<i>Cynosurus cristatus</i>), Common Bent (<i>Agrostis capillaris</i>), Autumn Hawkbit (<i>Scorzoneroides autumnalis</i>), Harebell (<i>Campanula rotundifolia</i>), Red Clover (<i>Trifolium pratense</i>), Eyebright (<i>Euphrasia</i> agg.), Ribwort Plantain (<i>Plantago lanceolata</i>), Common Mouse-ear (<i>Cerastium fontanum</i>), Meadow Vetchling (<i>Lathyrus pratensis</i>) in some areas
9	B4	Improved grassland	MG7a:MG10a	97:3	Low	
10	B5	Marsh/marshy grassland	MG9/MG10a:M27/OV26c	80:20	Moderate	
11	B4	Improved grassland	MG7a		Low	
12	B2.1	Neutral grassland - unimproved	MG1b		Low	With Creeping Thistle (<i>Cirsium arvense</i>)
13	A2.2	Scrub - scattered	MG1b:W21	60:40	Low	Scattered Hawthorn
14	B2.1	Neutral grassland - unimproved	MG1b:OV27:U4	90:5:5	Low	
15	B2.1	Neutral grassland - unimproved	MG1b		Low	
16	B4	Improved grassland	MG7a:OV25:U4	95:4:1	Low	
17	F2.2	Swamp - inundation	MG13/S22c		Moderate	Floating Sweet-grass (<i>Glyceria fluitans</i>) wet grassland, with Marsh Foxtail (<i>Alopecurus geniculatus</i>), Creeping Bent (<i>Agrostis stolonifera</i>), Marsh Ragwort (<i>Senecio aquaticus</i>), Jointed Rush (<i>Juncus articulatus</i>), Bog Stitchwort (<i>Stellaria alsine</i>) and Yorkshire-fog (<i>Holcus lanatus</i>). Cattle poached
18	B5	Marsh/marshy grassland	MG9/MG10a		Moderate	Drainage ditch cut through peat, recently dug
19	B4	Improved grassland	MG6a/MG7a		Low	
20	A3.1	Scattered broadleaved trees	A3.1		Low	Beech
21	B4	Improved grassland	MG7(MG10a)		Low	Access restricted due to cattle
22	B2.2	Neutral grassland - semi-improved	MG10a		Moderate	
23	A3.1	Scattered broadleaved trees	A3.1(OV24a, OV18b, OV27b, J4)		Low	Silage store here

Habitat Survey Report
 Torrance Wind Farm Extension II

Polygon no.	Phase 1 code	Phase 1 habitat	NVC code	NVC ratio	GWDTE assessment	Notes
24	J3.6	Built up areas - buildings/roads	J3.6		NA	Buildings
25	J3.6	Built up areas - buildings/roads	J3.6		NA	Road
26	A3.1	Scattered broadleaved trees	A3.1		Low	Downy Birch (<i>Betula pubescens</i>) and Rowan
27	J2.2.2	Hedgerow - defunct, species-poor	W21		Low	Hawthorn hedge, with Beech, Dog-rose (<i>Rosa canina</i> agg.), Blackthorn (<i>Prunus spinosa</i>) and Holly (<i>Ilex aquifolium</i>)
28	B2.2	Neutral grassland - semi-improved	MG6b		Low	Sward included Common Bent, Yarrow (<i>Achillea millefolium</i>), Cat's-ear (<i>Hypochaeris radicata</i>), Common Sorrel (<i>Rumex acetosa</i>), Sheep's-sorrel (<i>R. acetosella</i>), Harebell, Common Mouse-ear (<i>Cerastium fontanum</i>) and Lady's Bedstraw (<i>Galium verum</i>)
29	B2.2	Neutral grassland - semi-improved	MG6:MG10a:U4a:OV27b	70:25:3:2	Low	
30	J2.2.2	Hedgerow - defunct, species-poor	W21		Low	Hawthorn, Blackthorn, Dog-rose, Sycamore (<i>Acer pseudoplatanus</i>), Gorse (<i>Ulex europaeus</i>), Ash (<i>Fraxinus excelsior</i>), Wych Elm (<i>Ulmus glabra</i>) and Beech
31	C3.2	Tall herb and fern - non-ruderal	C3.2:C3.1:MG1	40:30:30	Low	C3.2 - Scaly Male-fern (<i>Dryopteris affinis</i>); C3.1 - Sweet Cicely (<i>Myrrhis odorata</i>)
32	B2.1	Neutral grassland - unimproved	MG1b		Low	
33	B4	Improved grassland	MG7		Low	
34	B2.1	Neutral grassland - unimproved	MG1b		Low	
35	A1.3.2	Mixed woodland - plantation	A1.3.2		Low	Sitka Spruce (<i>Picea sitchensis</i>), Ash, Rowan, Beech and another non-native conifer present
36	B2.1	Neutral grassland - unimproved	MG1b:OV27b:W23:U4:MG9/MG10a:MG1e	80:10:5:2:2:1	Low	
37	B2.1	Neutral grassland - unimproved	MG1b:MG9:OV27b	90:5:5	Low	
38	B2.1	Neutral grassland - unimproved	MG1b:OV27b	70:30	Low	
39	B4	Improved grassland	MG7		Low	
40	J3.6	Built up areas - buildings/roads	J3.6		NA	South end of Harthill village
41	J2.1.2	Hedgerow - intact, species-poor	W21:MG1b	80:20	Low	Hawthorn hedge
42	J2.1.2	Hedgerow - intact, species-poor	W21:MG1:OV27b	85:10:5	Low	Hawthorn and Blackthorn
43	J3.6	Built up areas - buildings/roads	J3.6		NA	House and garden
44	J2.1.2	Hedgerow - intact, species-poor	W21(J1.4)		Low	Hawthorn hedge, with Snowberry (<i>Symphoricarpos albus</i>)
45	J2.1.2	Hedgerow - intact, species-poor	W21:OV27b:MG1b:S28	88:5:5:2	Low	Hawthorn, Wych Elm and Ash
46	B2.1	Neutral grassland - unimproved	MG1b:J2.2.2:OV27b	60:25:15	Low	Scattered hedge with Hawthorn and Ash
47	A1.2.2	Coniferous woodland - plantation	A1.2.2		Low	Hybrid Larch (<i>Larix x marschlinsii</i>)
48	A1.1.2	Broadleaved woodland - plantation	A1.1.2(W7)		Moderate	Sycamore dominated, with Ash, Alder (<i>Alnus glutinosa</i>) and Beech
49	B5	Marsh/marshy grassland	MG10a:M23b:S22	40:30:30	Moderate-High	
50	B2.1/C3.1	Neutral grassland / tall ruderal	OV25:MG1b:A2.2:M27b:M23b	45:25:20:8:2	Low	A2.2 - scattered Hawthorn. M27b along drain

Polygon no.	Phase 1 code	Phase 1 habitat	NVC code	NVC ratio	GWDTE assessment	Notes
51	A1.2.2	Coniferous woodland - plantation	A1.2.2		Low	Sitka Spruce dominant, with scattered Hybrid Larch
52	B5	Marsh/marshy grassland	MG10a:OV24:OV25:M27	70:15:10:5	Moderate	
53	A1.2.2	Coniferous woodland - plantation	A1.2.2		Low	Sitka Spruce dominant, with scattered Hybrid Larch
54	B2.2	Neutral grassland - semi-improved	MG1/MG1b:OV24:U4	95:4:1	Low	Mown for silage
55	A1.1.2	Broadleaved woodland - plantation	A1.1.2		Low	Sycamore, Rowan, Beech, Alder and Ash
56	B2.1	Neutral grassland - unimproved	MG1b:OV25:OV27b	85:10:5	Low	
57	A1.1.2	Broadleaved woodland - plantation	A1.1.2		Low	Sycamore dominant, with Norway Maple (<i>Acer platanoides</i>), Ash, Rowan, Beech and Hawthorn
58	A1.2.2	Coniferous woodland - plantation	A1.2.2		Low	Hybrid Larch
59	A3.1	Scattered broadleaved trees	A3.1		Low	Beech trees
60	B2.1	Neutral grassland - unimproved	MG1b:MG9:MG10a:OV25	70:15:10:5	Low	
61	J1.4	Introduced shrub	J1.4		Low	Bridewort (<i>Spiraea</i> agg.)
62	C3.1	Tall herb and fern - tall ruderal	OV27b		Low	
63	A1.1.2	Broadleaved woodland - plantation	A1.1.2		Low	Sycamore dominant, with Hazel (<i>Corylus avellana</i>), Beech, Hawthorn and Ash
64	A1.2.2	Coniferous woodland - plantation	A1.2.2		Low	Sitka Spruce dominant, with Hybrid Larch scattered
65	B2.1	Neutral grassland - unimproved	MG10(HI):MG1b:OV24	50:30:20	Low	Sward dominated by Yorkshire-fog
66	A1.1.2	Broadleaved woodland - plantation	A1.1.2		Low	Sycamore dominant, with Ash. Ground flora of Common Nettle (<i>Urtica dioica</i>), Creeping Buttercup (<i>Ranunculus repens</i>), Cleavers (<i>Galium aparine</i>), Common Feather-moss (<i>Kindbergia praelonga</i>) and Rough-stalked Feather-moss (<i>Brachythecium rutabulum</i>)
67	A1.2.2	Coniferous woodland - plantation	A1.2.2		Low	Sitka Spruce
68	B2.1	Neutral grassland - unimproved	MG1b		Low	Creeping Thistle, Common Nettle, Common Ragwort (<i>Jacobaea vulgaris</i>), Common Sorrel, Cock's-foot (<i>Dactylis glomerata</i>), False Oat-grass (<i>Arrhenatherum elatius</i>), <i>Holcus</i> species, Creeping Buttercup, Tufted Hair-grass (<i>Deschampsia cespitosa</i>) and Cow Parsley (<i>Anthriscus sylvestris</i>)
69	A2.1	Scrub - dense/continuous	A2.1:W24x	70:30	Low	Aspen (<i>Populus tremula</i>) saplings and Raspberry (<i>Rubus idaeus</i>) stand
70	B2.1	Neutral grassland - unimproved	MG1a/b:OV25	90:10	Low	
71	A1.1.2	Broadleaved woodland - plantation	A1.1.2		Low	Sycamore and Ash dominant, with Rowan and Beech
72	A1.1.2	Broadleaved woodland - plantation	A1.1.2		Low	Beech (semi-mature trees), Ash, Rowan, Alder, Hawthorn, Silver Birch (<i>Betula pendula</i>) and Sessile Oak (<i>Quercus petraea</i>)
73	A1.2.2	Coniferous woodland - plantation	A1.2.2		Low	Sitka Spruce dominant, with scattered Hybrid Larch
74	B2.1	Neutral grassland - unimproved	MG10a/MG10(HI):U4	95:5	Moderate	Much of sward dominated by grasses, with few rushes
75	B5	Marsh/marshy grassland	MG10a		Moderate	
76	A1.2.2	Coniferous woodland - plantation	A1.2.2		Low	Sitka Spruce
77	A1.2.2	Coniferous woodland - plantation	A1.2.2		Low	Sitka Spruce

Polygon no.	Phase 1 code	Phase 1 habitat	NVC code	NVC ratio	GWDTE assessment	Notes
78	A1.2.2	Coniferous woodland - plantation	A1.2.2		Low	Sitka Spruce dominant, with scattered Hybrid Larch
79	A1.1.2	Broadleaved woodland - plantation	A1.1.2		Low	Sycamore, Ash, Rowan and Hazel
80	B2.1	Neutral grassland - unimproved	MG10a:U4b	80:20	Moderate	
81	A1.1.2	Broadleaved woodland - plantation	A1.1.2		Low	Alder, Sycamore, Ash, Hazel, Downy Birch and Rowan
82	B5	Marsh/marshy grassland	MG10a:M23b	60:40	Moderate-High	
83	A1.1.2	Broadleaved woodland - plantation	A1.1.2		Low	Ash, Alder and Downy Birch
84	B2.1	Neutral grassland - unimproved	MG1b:U4b	70:30	Low	U4b - Red Fescue (<i>Festuca rubra</i>), Common Bent, Yorkshire-fog and Creeping Thistle
85	A1.1.2	Broadleaved woodland - plantation	A1.1.2		Low	Alder, Ash and Downy Birch
86	B5	Marsh/marshy grassland	M23b:M23a:MG10a	40:30:30	High	
87	B2.1	Neutral grassland - unimproved	MG1a:U4b:MG9	80:15:5	Low	U4b with Red Fescue
88	A1.1.2	Broadleaved woodland - plantation	A1.1.2(W7c)		Moderate	Alder dominant, with Sessile Oak, Downy Birch, Ash and Hawthorn
89	A1.2.2	Coniferous woodland - plantation	A1.2.2		Low	Sitka Spruce dominant, with Hybrid Larch scattered
90	J2.2.2	Hedgerow - defunct, species-poor	W21		Low	Hedge bounding motorway, dominated by Hawthorn, with Ash, Aspen and Guelder-rose (<i>Viburnum opulus</i>)
91	B5	Marsh/marshy grassland	M23b		High	Species-rich stand, with Marsh Willowherb (<i>Epilobium palustre</i>), Common Sorrel, Common Spotted-orchid (<i>Dactylorhiza fuchsii</i>), Soft-rush (<i>Juncus effusus</i>), Compact Rush (<i>J. conglomeratus</i>), Wild Angelica, Sneezewort (<i>Achillea ptarmica</i>), Ribwort Plantain (<i>Plantago lanceolata</i>), Meadow Vetchling, Tufted Hair-grass, Glaucous Sedge (<i>Carex flacca</i>), Common Knapweed, Silverweed (<i>Potentilla anserina</i>), Marsh Thistle (<i>Cirsium palustre</i>), Springy Turf-moss (<i>Rhytidiadelphus squarrosus</i>), Creeping Thistle, Common Bent, Oval Sedge (<i>Carex leporina</i>), Tufted Vetch (<i>Vicia cracca</i>), Common Sedge (<i>C. nigra</i>), Selfheal (<i>Prunella vulgaris</i>), Great Willowherb (<i>E. hirsutum</i>), Male-fern (<i>Dryopteris filix-mas</i>) and Marsh Ragwort
92	A1.1.2	Broadleaved woodland - plantation	A1.1.2(W7c)		Moderate	Alder, Ash and Downy Birch
93	A1.2.2	Coniferous woodland - plantation	A1.2.2		Low	Sitka Spruce and Hybrid Larch
94	B5	Marsh/marshy grassland	MG10a:M23b:U4b	70:20:10	Moderate	Meadow Crane's-bill (<i>Geranium pratense</i>) and orchid (<i>Dactylorhiza</i>) species noted
95	B2.1	Neutral grassland - unimproved	MG1e		Low	
96	B5	Marsh/marshy grassland	M23b		High	
97	C3.1	Tall herb and fern - tall ruderal	OV27		Low	
98	B2.1	Neutral grassland - unimproved	MG1a/b		Low	
99	J3.6	Built up areas - buildings/roads	J3.6		NA	Mast structure
100	B2.1/B5	Neutral/marshy grassland	MG1b:M23b	60:40	Low-High	
101	J3.6	Built up areas - buildings/roads	J3.6		NA	Tarmaced back road

Polygon no.	Phase 1 code	Phase 1 habitat	NVC code	NVC ratio	GWDTE assessment	Notes
102	A1.3.2	Mixed woodland - plantation	A1.3.2		Low	Sitka Spruce, Norway Maple, Hybrid Larch, Hawthorn, Scots Pine (<i>Pinus sylvestris</i>), Elder (<i>Sambucus nigra</i>), Wild Privet (<i>Ligustrum vulgare</i>), Holly, Blackthorn, Guelder-rose, Ash, Tree Cotoneaster (<i>Cotoneaster frigidus</i>), Grey Alder (<i>Alnus incana</i>), Lodgepole Pine (<i>P. contorta</i>), White Willow (<i>Salix alba</i>), Common Whitebeam (<i>Sorbus aria</i>), Currant (<i>Ribes</i>) species, Wych Elm and Alder
103	C3.1	Tall herb and fern - tall ruderal	OV24:MG1b:W22:OV27b:MG9	65:25:5:3:2	Low	
104	A1.1.2	Broadleaved woodland - plantation	A1.1.2		Low	Sycamore and Ash dominant, with Sessile Oak, Hazel, Norway Maple, Alder, Rowan and Beech
105	B2.1	Neutral grassland - unimproved	MG1b:OV27b	80:20	Low	
106	B2.1	Neutral grassland - unimproved	MG1b:OV27b	98:2	Low	
107	A1.1.2	Broadleaved woodland - plantation	A1.1.2		Low	Rowan, Alder, Norway Maple and Aspen
108	B2.1/C3.1	Neutral grassland / tall ruderal	MG1b:OV27b	60:40	Low	
109	B2.1/B5	Neutral/marshy grassland	M23b:MG9:MG1b:OV25:OV27b	45:30:10:10:5	Moderate-High	
110	A1.1.2	Broadleaved woodland - plantation	A1.1.2(W7b/c)		Moderate-High	Alder dominant, with Sessile Oak, Downy Birch, Rowan and Hawthorn. Soft-rush frequent in ground flora
111	A1.1.2	Broadleaved woodland - plantation	A1.1.2(W7c)		Moderate	Alder, Downy Birch, Hawthorn, Sessile Oak and Goat Willow (<i>Salix caprea</i>)
112	B2.1/B5	Neutral/marshy grassland	MG9:M23a/b:A2.2:MG1b:OV25:U4	35:30:15:10:5:5	Moderate-High	A2.2 - Rowan and Hawthorn
113	A2.2	Scrub - scattered	A2.2		Low	Scattered Hawthorn
114	B5	Marsh/marshy grassland	M23b		High	Species-poor stand
115	B2.2	Neutral grassland - semi-improved	MG6:MG9/MG10a	70:30	Low	Crested Dog's-tail more abundant than Perennial Rye-grass (<i>Lolium perenne</i>). Creeping Bent, Tufted Hair-grass and Soft-rush frequent
116	A3.1	Scattered broadleaved trees	A3.1:MG9/MG10a	60:40	Moderate	
117	J2.2.2	Hedgerow - defunct, species-poor	W21		Low	Hedge bounding motorway, with fence. Hawthorn, sparse in places
118	B2.2	Neutral grassland - semi-improved	MG9:MG6	70:30	Moderate	Tufted Hair-grass sward showing some signs of agricultural improvement. Crested Dog's-tail, Common Bent, Soft-rush, Yorkshire-fog, Creeping Buttercup, Meadow Buttercup (<i>Ranunculus acris</i>), Perennial Rye-grass, Common Mouse-ear, Oval Sedge, Common Ragwort, Creeping Bent, Velvet Bent (<i>Agrostis canina</i>), Sweet Vernal-grass (<i>Anthoxanthum odoratum</i>), White Clover, Broad-leaved Dock (<i>Rumex obtusifolius</i>), Curled Dock (<i>R. crispus</i>) and Creeping Soft-grass (<i>Holcus mollis</i>) also present
119	B5	Marsh/marshy grassland	M23b:MG10a:S28:M27b/c	60:30:5:5	Moderate-High	
120	J1.4	Introduced shrub	J1.4		Low	White-stemmed Bramble (<i>Rubus cockburnius</i>), Snowberry, Guelder-rose and Elder
121	A1.3.2	Mixed woodland - plantation	A1.3.2		Low	Beech, Sycamore, Hawthorn, Lime (<i>Tilia x europaea</i>), Rowan, a willow (<i>Salix</i>) species, Pedunculate Oak (<i>Quercus robur</i>), Sitka Spruce, Elder, Garden Privet (<i>Ligustrum ovalifolium</i>), Ash, Scots Pine, Wild Privet, Lodgepole Pine, Norway Maple and Guelder-rose
122	A3.1	Scattered broadleaved trees	A3.1(MG6, MG10a, M23b)		Low-Moderate	Sycamore and Wych Elm
123	B4	Improved grassland	MG6a:MG10a	97:3	Low	

Polygon no.	Phase 1 code	Phase 1 habitat	NVC code	NVC ratio	GWDTE assessment	Notes
124	J2.2.2	Hedgerow - defunct, species-poor	W21(OV27b)		Low	With fence. Ratio not recorded
125	B4	Improved grassland	MG6a:MG10a:S23:OV24	98:1:<1:<1	Low	
126	A1.1.2	Broadleaved woodland - plantation	A1.1.2		Low	Sycamore, Downy Birch, Ash, Hazel and Grey Willow (<i>Salix cinerea</i>)
127	A1.1.2	Broadleaved woodland - plantation	A1.1.2		Low	Beech, Ash, Lime, Horse Chestnut (<i>Aesculus hippocastanum</i>) and Sycamore
128	A1.2.2	Coniferous woodland - plantation	A1.2.2		Low	
129	B4	Improved grassland	MG7a		Low	
130	A3.1	Scattered broadleaved trees	A3.1		Low	Beech and Sycamore
131	A1.1.2	Broadleaved woodland - plantation	A1.1.2		Low	Beech and Rowan
132	B2.2	Neutral grassland - semi-improved	MG6		Low	
133	B5	Marsh/marshy grassland	MG10a		Moderate	Some areas corresponded to B2.2
134	B2.1	Neutral grassland - unimproved	MG1a/e:MG5a:MG1c	80:15:5	Low	MG5 along track
135	B5	Marsh/marshy grassland	MG10a/M23b		Moderate-High	
136	B1.1/B5	Acid/marshy grassland	U4d-M6a:Je/M23b	50:50	Moderate-High	Je - Soft-rush. Rushy habitats along drains. U4d-M6a: Sweet Vernal-grass, Brown Bent (<i>Agrostis vinealis</i>), Wavy Hair-grass (<i>Avenella flexuosa</i>), Carnation Sedge (<i>Carex panicea</i>), Star Sedge (<i>C. echinata</i>), Red Fescue, Little Shaggy-moss (<i>Rhytidiadelphus loreus</i>), Tormentil (<i>Potentilla erecta</i>), Meadow Buttercup, Marsh Thistle, Heath Wood-rush (<i>Luzula multiflora</i>), Red Fescue, Common Bent, Soft-rush, Common Sedge, Compact Rush, Common Sorrel, Papillose Bog-moss (<i>Sphagnum papillosum</i>), Common Haircap (<i>Polytrichum commune</i>), Flat-topped Bog-moss (<i>S. fallax</i>) and Glaucous Sedge
137	E2.1	Acid/neutral flush	M6c:M23b:M25b	80:10:10	High	M6c - Soft-rush sward, with Blunt-leaved Bog-moss (<i>Sphagnum palustre</i>), Flat-topped Bog-moss, Common Haircup, Narrow Buckler-fern (<i>Dryopteris carthusiana</i>), Heath Bedstraw (<i>Galium saxatile</i>), Common Sedge, Star Sedge, Tormentil, Common Cottongrass (<i>Eriophorum angustifolium</i>), a little Hare's-tail Cottongrass (<i>E. vaginatum</i>), Velvet Bent and Wavy Hair-grass
138	E1.7	Wet modified bog	M25:M20a:M6c	70:15:15	Peatland	
139	E1.7/E2.1	Wet modified bog / acid flush	M6c:M20a	65:35	High	
140	A3.1	Scattered broadleaved trees	W4b/c		High	Scattered Downy Birch, over M6c, M25a/b and M20a ground floras
141	E1.7	Wet modified bog	M18a:M25/M20:M17a	50:30:20	Peatland	Raised bog with signs of modification. Common Cottongrass and Cross-leaved Heath (<i>Erica tetralix</i>) abundant in places. Purple Moor-grass (<i>Molinia caerulea</i>), Hare's-tail Cottongrass, Deergrass (<i>Trichophorum germanicum</i>), Cow's-horn Bog-moss (<i>Sphagnum denticulatum</i>), Red Bog-moss (<i>S. capillifolium</i>), Red-stemmed Feather-moss (<i>Pleurozium schreberi</i>), Heather (<i>Calluna vulgaris</i>), Papillose Bog-moss, Bog Bead-moss (<i>Aulacomnium palustre</i>), Heath Plait-moss (<i>Hypnum jutlandicum</i>), Feathery Bog-moss (<i>S. cuspidatum</i>), Brown Bent, Heath Spotted-orchid (<i>Dactylorhiza maculata</i>), Tormentil, Carnation Sedge, Common Haircap, Cranberry (<i>Vaccinium oxycoccos</i>), Heath Bedstraw and Magellanic Bog-moss (<i>S. magellanicum</i>) also present
142	A1.1.1	Broadleaved woodland - semi-natural	W4b:W11	75:25	High	Downy Birch and Grey Willow. W11 with grazed ground flora

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Polygon no.	Phase 1 code	Phase 1 habitat	NVC code	NVC ratio	GWDTE assessment	Notes
143	B5	Marsh/marshy grassland	M23b:M6c:M4	90:9:1	High	
144	B2.1/B5	Neutral/marshy grassland	U4-MG5:MG10a:MG9:MG6:A3.1:M23 a/b	20:20:20:15:15:10	Low-Moderate	
145	B1.1/B2.1	Acid/neutral grassland	MG5:U1d:MG10a:A3.1:MG6:M27 c:M23b:W23:OV24/OV25	35:15:15:10:10:5:5:3:2	Low	Species-rich short sward on spoil heaps. Grand-toothed Hawkweed (<i>Hieracium grandidens</i>), Common Hawkweed (<i>H. triviale</i>), Mouse-ear Hawkweed (<i>Pilosella officinaum</i>), Meadow Buttercup, Cat's-ear, Crested Dog's-tail, Ribwort Plantain, White Clover, Red Clover, Autumn Hawkbit, Early Hair-grass (<i>Aira praecox</i>), Hairy Lady's-mantle (<i>Alchemilla filicaulis</i>), Daisy (<i>Bellis perennis</i>), Common Bird's-foot-trefoil (<i>Lotus corniculatus</i>), Heath Bedstraw, Mat-grass (<i>Nardus stricta</i>), Devil's-bit Scabious (<i>Succisa pratensis</i>), Common Ragwort, Springy Turf-moss, Meadow Vetchling, Danadelon (<i>Taraxacum</i> agg.), Common Milkwort (<i>Polygala vulgaris</i>), Daisy, Juniper Haircap (<i>Polytrichum juniperinum</i>), Meadow Buttercup, Common Haircap, Silvery Hair-grass (<i>A. caryophyllea</i>), Lesser Stitchwort (<i>Stellaria graminea</i>), Waved Silk-moss (<i>Plagiothecium undulatum</i>), Perforate St John's-wort (<i>Hypericum perforatum</i>), Woolly Fringe-moss (<i>Racomitrium lanuginosum</i>), Bristly Haircap (<i>Polytrichum piluliferum</i>), Eyebright, Sheep's Sorrel, Sweet Vernal-grass, Red Fescue, Wavy Hair-grass, Plait-moss (<i>Hypnum</i>) species, Common Knapweed, <i>Cladonia</i> species., Lesser Trefoil (<i>T. dubium</i>) and Dense Fringe-moss (<i>R. ericoides</i>)
146	B2.2	Neutral grassland - semi-improved	MG10a:MG5/MG6	70:30	Moderate	
147	B2.1	Neutral grassland - unimproved	MG1b:MG9:A2.2	70:20:10	Low	
148	B5	Marsh/marshy grassland	M23b		High	
149	B2.2	Neutral grassland - semi-improved	MG6:MG10a	60:40	Low-Moderate	
150	B5	Marsh/marshy grassland	M23b:MG10a	70:30	High	
151	B2.1/C3.1	Neutral grassland / tall ruderal	OV25:MG1b:MG9:A2.2:M23b:U4 e	35:20:20:15:10	Low	
152	B2.1/B5	Neutral/marshy grassland	MG10a:MG1b	90:10	Moderate	
153	B2.2	Neutral grassland - semi-improved	MG6:MG10a	95:5	Low	
154	A3.1	Scattered broadleaved trees	A3.1		Low	Row of trees
155	J4	Bare ground	J4		NA	Track
156	J3.6	Built up areas - buildings/roads	J3.6		NA	Netherton Farm
157	A1.3.2	Mixed woodland - plantation	A1.3.2		Low	Beech, Alder, Osier (<i>Salix viminalis</i>), Sitka Spruce, Rowan, Wild Cherry (<i>Prunus avium</i>), Holly, Swedish Whitebeam (<i>Sorbus intermedia</i>), Crack-willow (<i>Salix x fragilis</i>), Sessile Oak and Ash
158	B5/C3.1	Marsh / tall ruderal	OV25:MG10a:MG9	50:40:10	Low-Moderate	
159	A1.1.2	Broadleaved woodland - plantation	A1.1.2		Low	Norway Maple, Ash, Sycamore, Hazel, Hawthorn and a willow (<i>Salix</i>) species
160	C3.1	Tall herb and fern - tall ruderal	OV27b/OV25		Low	
161	E2.1	Acid/neutral flush	M23b		High	

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Polygon no.	Phase 1 code	Phase 1 habitat	NVC code	NVC ratio	GWDTE assessment	Notes
162	A1.3.2	Mixed woodland - plantation	A1.3.2		Low	Sitka Spruce, Hybrid Larch, Wild Privet, Hawthorn, Alder, Crack-willow, Dogwood (<i>Cornus sanguinea</i>), Golden-twig Dogwood (<i>C. sericea</i> 'Flaviramea') and Guelder-rose
163	J1.4	Introduced shrub	J1.4		Low	White-stemmed Bramble
164	A1.1.2	Broadleaved woodland - plantation	A1.1.2		Low	Sycamore, Rowan, Downy Birch and Aspen
165	B2.1/B5	Neutral/marshy grassland	MG10a:M23b:OV25	70:20:10	Moderate	
166	J1.3	Ephemeral/short perennial	OV10		Low	Groundsel (<i>Senecio vulgaris</i>), Greater Plantain (<i>Plantago major</i>) and Annual Meadow-grass (<i>Poa annua</i>)
167	C3.1	Tall herb and fern - tall ruderal	OV25		Low	
168	B2.2	Neutral grassland - semi-improved	MG6:MG10a	70:30	Low	
169	B5	Marsh/marshy grassland	M23b:MG10a:OV24	40:40:20	Moderate-High	
170	J1.2	Amenity grassland	J1.2		Low	Garden
171	B2.2	Neutral grassland - semi-improved	MG6		Low	
172	B2.2	Neutral grassland - semi-improved	MG6:MG10a	95:5	Low	
173	B2.2	Neutral grassland - semi-improved	MG6:OV25	90:10	Low	
174	A3.1	Scattered broadleaved trees	A3.1		Low	
175	A1.1.2	Broadleaved woodland - plantation	A1.1.2		Low	Beech row
176	A1.1.2	Broadleaved woodland - plantation	A1.1.2		Low	Ash and Sycamore dominant, with Hawthorn, Norway Maple, Beech, Hazel and Rowan
177	C3.1	Tall herb and fern - tall ruderal	OV24		Low	
178	B2.1	Neutral grassland - unimproved	MG1b		Low	
179	A2.1	Scrub - dense/continuous	A2.1		Low	Guelder-rose, Garden Privet, Gorse, Golden-twig Dogwood, White-stemmed Bramble, Grey Willow, Japanese Rose (<i>Rosa rugosa</i>) and Beech
180	A1.1.2	Broadleaved woodland - plantation	A1.1.2		Low	Beech, Ash and Lime
181	J3.6	Built up areas - buildings/roads	J3.6		NA	Farm
182	A1.3.2	Mixed woodland - plantation	A1.3.2		Low	
183	J4	Bare ground	J4		NA	Track
184	B2.2	Neutral grassland - semi-improved	MG6		Low	
185	B5	Marsh/marshy grassland	M23b		High	
186	A2.2	Scrub - scattered	W21:MG1b/e:U5c/MG5:W23a	45:25:20:10	Low	
187	B1.2/B2.1		U4b(Cc):MG5:OV25:W21/W23	60:30:5:5	Low	
188	B5	Marsh/marshy grassland	M23a/b:W1	98:2	High	
189	E1.7/E2.1	Wet modified bog / acid flush	M25/M25b:M6c:M23b:W1:W23	40:30:20:8:2	Peatland/High	Peatland/High

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Polygon no.	Phase 1 code	Phase 1 habitat	NVC code	NVC ratio	GWDTE assessment	Notes
190	B2.1	Neutral grassland - unimproved	MG1b:MG9:MG10a	60:30:10	Low	Common Spotted-orchid present
191	A1.2.2	Coniferous woodland - plantation	A1.2.2		Low	Sitka Spruce dominant, with Hybrid Larch scattered
192	B5	Marsh/marshy grassland	M23b:M23a	95:5	High	
193	A1.2.2	Coniferous woodland - plantation	A1.2.2		Low	Sitka Spruce dominant, with Hybrid Larch scattered
194	A1.1.2	Broadleaved woodland - plantation	A1.1.2		Low	Sycamore, Ash, Hawthorn and Beech
195	B2.1	Neutral grassland - unimproved	MG1b:MG9:U4	74:25:1	Low	
196	B5	Marsh/marshy grassland	M23b		High	
197	B2.1	Neutral grassland - unimproved	MG9:MG10a:MG1b	50:30:20	Moderate-High	
198	A1.2.2	Coniferous woodland - plantation	A1.2.2		Low	Sitka Spruce dominant, with Hybrid Larch scattered
199	A3.1	Scattered broadleaved trees	A3.1		Low	Beech
200	A1.1.2	Broadleaved woodland - plantation	A1.1.2		Low	
201	A1.2.2	Coniferous woodland - plantation	A1.2.2		Low	Sitka Spruce dominant, with Hybrid Larch scattered
202	A1.2.2	Coniferous woodland - plantation	A1.2.2		Low	Goat Willow, Grey Willow, Ash, Alder and Downy Birch
203	B5	Marsh/marshy grassland	M23b:M27c:MG10a	90:5:5	High	
204	A1.2.2	Coniferous woodland - plantation	A1.2.2		Low	Sitka Spruce dominant, with Hybrid Larch scattered
205	B5	Marsh/marshy grassland	M23b		High	
206	A1.2.2	Coniferous woodland - plantation	A1.2.2		Low	Sitka Spruce dominant, with Hybrid Larch scattered
207	B2.1/B5	Neutral/marshy grassland	MG9:MG10a	60:40	Moderate	
208	A1.1.2	Broadleaved woodland - plantation	A1.1.2		Low	Alder
209	A1.1.2	Broadleaved woodland - plantation	A1.1.2		Low	Alder dominant, with Ash, Sessile Oak and Downy Birch
210	A1.2.2	Coniferous woodland - plantation	A1.2.2		Low	Sitka Spruce
211	A1.1.2	Broadleaved woodland - plantation	A1.1.2		Low	Alder, Grey Willow and Downy Birch
212	A1.2.2	Coniferous woodland - plantation	A1.2.2		Low	Hybrid Larch
213	A1.1.2	Broadleaved woodland - plantation	A1.1.2		Low	
214	B5	Marsh/marshy grassland	M23b:MG9:M25b:M23a:U4d	60:20:10:5:5	Moderate-High	
215	B1.1	Acid grassland - unimproved	U4d-M6b		Moderate	Common Sedge (<i>Carex nigra</i>) frequent in damp grassland
216	A1.1.2	Broadleaved woodland - plantation	A1.1.2		Low	Downy Birch, Alder and Sessile Oak
217	A1.1.2	Broadleaved woodland - plantation	A1.1.2		Low	
218	A1.3.2	Mixed woodland - plantation	A1.3.2		Low	
219	A1.2.2	Coniferous woodland - plantation	A1.2.2		Low	Sitka Spruce dominant, with Hybrid Larch scattered

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Polygon no.	Phase 1 code	Phase 1 habitat	NVC code	NVC ratio	GWDTE assessment	Notes
220	A1.1.2	Broadleaved woodland - plantation	A1.1.2		Low	Alder, Downy Birch and Rowan
221	A1.2.2	Coniferous woodland - plantation	A1.2.2		Low	Sitka Spruce dominant, with Hybrid Larch scattered
222	A1.1.2	Broadleaved woodland - plantation	A1.1.2(W4)		High	Alder
223	B5	Marsh/marshy grassland	M23b:M25b:M6c	85:10:5	High	
224	A2.2	Scrub - scattered	MG9/MG10a:OV25:A2.2	40:30:30	Low-Moderate	
225	A1.1.2	Broadleaved woodland - plantation	A1.1.2		Low	Ash, Sessile Oak and Downy Birch
226	A1.1.2	Broadleaved woodland - plantation	A1.1.2		Low	Alder dominant, with Ash, Pedunculate Oak and Downy Birch
227	A1.1.2	Broadleaved woodland - plantation	A1.1.2(W7b)		High	Alder dominant
228	B5/F1	Marsh / swamp	M23b:S10:MG9:S22	50:20:20:10	High	
229	B2.1/B5	Neutral/marshy grassland	MG9:M23b:A2.2:U4	60:30:5:5	Moderate-High	
230	B2.1	Neutral grassland - unimproved	MG10(HI):OV24:OV25:MG1b:MG10a	55:30:5:5:5	Low	
231	B2.2	Neutral grassland - semi-improved	MG6:OV25	98:2	Low	
232	A2.2	Scrub - scattered	A2.2		Low	Hawthorn
233	B2.1/C3.1	Neutral grassland / tall ruderal	MG10(Hm):OV24	70:30	Low	Creeping Soft-grass dominant
234	A1.2.2	Coniferous woodland - plantation	A1.2.2		Low	Sitka Spruce dominant, with Hybrid Larch scattered
235	B2.1/B5	Neutral/marshy grassland	MG10a:MG1b:OV24	50:35:15	Low-Moderate	
236	A1.1.2	Broadleaved woodland - plantation	A1.1.2		Low	Sycamore, Ash, Hawthorn and Rowan
237	A2.1	Scrub - dense/continuous	W7b		High	Grey Willow
238	B5	Marsh/marshy grassland	M23b/S10/OV16		High	
239	B2.1/B5	Neutral/marshy grassland	MG9:OV24:MG10a:M23b:OV27b	40:20:15:15:10	Moderate	
240	A2.2	Scrub - scattered	A2.2		Low	Hawthorn
241	A1.1.2	Broadleaved woodland - plantation	A1.1.2		Low	Alder, Sycamore and Downy Birch
242	A1.1.2	Broadleaved woodland - plantation	A1.1.2		Low	
243	B5/C3.1	Marsh / tall ruderal	M23b:OV27b:OV24:OV16	55:25:10:10	Low-High	
244	B5	Marsh/marshy grassland	M23b		High	
245	B2.1/C3.1	Neutral grassland / tall ruderal	MG9:OV24	65:35	Low-Moderate	
246	C3.1	Tall herb and fern - tall ruderal	OV24:MG10(HI)	70:30	Low	
247	A1.2.2	Coniferous woodland - plantation	A1.2.2		Low	Hybrid Larch and Scots Pine
248	A1.2.2	Coniferous woodland - plantation	A1.2.2		Low	Sitka Spruce dominant, with Hybrid Larch scattered

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Polygon no.	Phase 1 code	Phase 1 habitat	NVC code	NVC ratio	GWDTE assessment	Notes
249	A1.1.2	Broadleaved woodland - plantation	A1.1.2		Low	Alder, Hazel, Hawthorn, Norway Maple, Grey Willow, Sycamore, Rowan and Beech
250	B2.1/C3.1	Neutral grassland / tall ruderal	MG1b:OV24:OV27b	60:20:20	Low	
251	A2.1	Scrub - dense/continuous	W22:A1.1.2	65:35	Low	A2.1 - Blackthorn, Hawthorn, Guelder-rose. A1.1.2 - Sycamore and Hazel
252	A2.1	Scrub - dense/continuous	W22		Low	Blackthorn, Hawthorn, Guelder-rose and Dog-rose
253	B5	Marsh/marshy grassland	M23b:OV27	98:2	High	
254	B2.1	Neutral grassland - unimproved	MG9/MG1b		Low-Moderate	
255	B2.1	Neutral grassland - unimproved	MG1a/b:MG9:MG5:OV27b:OV24:MG1e	70:10:5:5:5:5	Low	
256	A1.1.2	Broadleaved woodland - plantation	A1.1.2		Low	Pedunculate Oak, Ash, Sycamore, Rowan and Birch species
257	B2.1	Neutral grassland - unimproved	MG1a/b:U5b	85:15	Low	
258	A1.1.2	Broadleaved woodland - plantation	A1.1.2		Low	Sycamore, Pedunculate Oak, Ash, Birch species, Alder and Hawthorn
259	B5	Marsh/marshy grassland	MG10a		Moderate	
260	A1.1.2	Broadleaved woodland - plantation	A1.1.2		Low	Sycamore, Alder, Ash, Hawthorn and Birch species
261	B2.1	Neutral grassland - unimproved	MG10a:MG1b:OV27b	50:40:10	Low-Moderate	
262	G1.2/F1	Open water / swamp	G1.2:S19:S14:A9:S12	65:20:9:5:1	Low	Common Spike-rush (<i>Eleocharis palustris</i>), Branched Bur-reed (<i>Sparganium erectum</i>), Broad-leaved Pondweed (<i>Potamogeton natans</i>), Bulrush (<i>Typha latifolia</i>), Jointed Rush, Lesser Spearwort (<i>Ranunculus flammula</i>), Brooklime (<i>Veronica beccabunga</i>), Common Duckweed (<i>Lemna minor</i>), Cuckooflower (<i>Cardamine pratensis</i>) and Marsh Thistle
263	B5	Marsh/marshy grassland	M23b:MG9:M6b/M6c:W1:S27	70:10:10:5:5	High	
264	F1	Swamp	S4a:MG9:W1	85:10:5	Low	Common Reed (<i>Phragmites australis</i>), with Soft-rush, Marsh Thistle, Marsh Horsetail (<i>Equisetum palustre</i>) and Pointed Spear-moss (<i>Calliergonella cuspidata</i>)
265	A3.1	Scattered broadleaved trees	A3.1		Low	Beech
266	B5	Marsh/marshy grassland	M23b:M27c:S9	90:5:5	High	
267	B2.1	Neutral grassland - unimproved	MG9		Moderate	
268	A1.1.2	Broadleaved woodland - plantation	A1.1.2(W7b/c)		Moderate-High	Alder and Goat Willow
269	B5	Marsh/marshy grassland	M23b:M27c:MG10a:S9/S10:OV16	40:25:25:5:5	Moderate-High	
270	J3.6	Built up areas - buildings/roads	J3.6		NA	Wild turbine
271	A2.2	Scrub - scattered	A2.2		Low	Hawthorn row
272	B2.2	Neutral grassland - semi-improved	MG10a		Moderate	
273	B4	Improved grassland	MG7		Low	Timothy (<i>Phleum pratense</i>) lay
274	A1.1.2	Broadleaved woodland - plantation	A1.1.2		Low	

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Polygon no.	Phase 1 code	Phase 1 habitat	NVC code	NVC ratio	GWDTE assessment	Notes
275	J3.6	Built up areas - buildings/roads	J3.6		NA	Farm
276	J4	Bare ground	J4		NA	Track
277	A2.2	Scrub - scattered	A2.2		Low	Hawthorns along fence
278	B2.2	Neutral grassland - semi-improved	MG6b:U4a	99:1	Low	
279	B2.2	Neutral grassland - semi-improved	MG6		Low	
280	B2.2	Neutral grassland - semi-improved	MG6		Low	
281	B5	Marsh/marshy grassland	M23b		High	
282	J2.2.2	Hedgerow - defunct, species-poor	W21		Low	Scattered Hawthorn
283	A2.2	Scrub - scattered	A2.2		Low	Hawthorn along fence line
284	B5	Marsh/marshy grassland	MG10a:MG6	80:20	Moderate	
285	B4	Improved grassland	MG7		Low	
286	B2.2	Neutral grassland - semi-improved	MG6a:MG10a:M23b	65:33:2	Low-Moderate	
287	A3.1	Scattered broadleaved trees	A3.1		Low	Sycamore
288	J3.6	Built up areas - buildings/roads	J3.6(OV25, MG6)		Low	Ruined building and tip
289	J2.3.2	Hedgerow - with trees, species-poor	J2.3.2		Low	Hawthorn and Ash row
290	B2.2	Neutral grassland - semi-improved	MG10a:MG6	60:40	Low-Moderate	
291	B2.2	Neutral grassland - semi-improved	MG6:MG10a	70:30	Low	
292	B5	Marsh/marshy grassland	M23b		High	
293	B4	Improved grassland	MG7		Low	
294	A1.1.2	Broadleaved woodland - plantation	A1.1.2		Low	Hazel, Alder, Guelder-rose, Blackthorn, Sessile Oak, Beech, Ash and Aspen
295	B2.1	Neutral grassland - unimproved	MG1b:A2.2	90:10	Low	
296	J3.6	Built up areas - buildings/roads	J3.6		NA	Road
297	B2.1	Neutral grassland - unimproved	MG1b:A2.2	95:5	Low	
298	J1.1	Arable field	J1.1		Low	Arable field, with Common Chickweed (<i>Stellaria media</i>), Sticky Mouse-ear (<i>Cerastium glomeratum</i>), Broad-leaved Willowherb, Common Hemp-nettle (<i>Galeopsis tetrahit</i>), Creeping Buttercup, Corn Spurrey (<i>Spergula arvensis</i>), Redshank (<i>Persicaria maculosa</i>), Perennial Rye-grass, White Clover, Annual Meadow-grass and Northern Dock (<i>Rumex longifolius</i>)
299	B5	Marsh/marshy grassland	M23b:M23a:U4/U5:MG6	80:10:5:5	High	
300	B2.1/B5	Neutral/marshy grassland	MG1c:M27:OV27:W1:C3.1:S12	60:20:14:3:2:1	Low-Moderate	C3.1 - Dotted Loosestripe (<i>Lysimachia punctata</i>)
301	A1.1.2	Broadleaved woodland - plantation	A1.1.2		Low	Blackthorn, Hawthorn, Guelder-rose, Ash, Wild Cherry, Alder, Birch species, Rowan, Pedunculate Oak and Sycamore

Polygon no.	Phase 1 code	Phase 1 habitat	NVC code	NVC ratio	GWDTE assessment	Notes
302	A2.2	Scrub - scattered	A2.2		Low	Hawthorn
303	B4	Improved grassland	MG6		Low	
304	J1.2	Amenity grassland	J1.2		Low	Play park
305	C3.1	Tall herb and fern - tall ruderal	OV27b:MG9:A2.2	65:25:10	Low-Moderate	A2.2 - Grey Willow and Goat Willow
306	J2.2.2	Hedgerow - defunct, species-poor	J2.2.2		Low	Beech hedge
307	A3.1	Scattered broadleaved trees	A3.1		Low	Goat Willow, Grey Willow and Sycamore
308	A2.1	Scrub - dense/continuous	W1:W7c:MG10a	50:30:20	Moderate	
309	B5	Marsh/marshy grassland	M23b:M27:U5	60:20:20	High	
310	B5	Marsh/marshy grassland	M23b:M27c:OV16:S28:M23a	60:30:5:5:<1	High	
311	F1	Swamp	S22b		Low	Floating Sweet-grass and clumps of Branched Bur-reed
312	F1	Swamp	S12b		Low	Bulrush, Sharp-flowered Rush (<i>Juncus acutiflorus</i>), Great Willowherb (<i>Epilobium hirsutum</i>), Soft-rush, Marsh Thistle, Pointed Spear-moss, Hart's-tongue Thyme-moss (<i>Plagiommium undulatum</i>), Marsh Willowherb, Common Sorrel, Common Feather-moss, Rough-stalked Feather-moss, Broad-leaved Dock and Wild Angelica
313	B2.2	Neutral grassland - semi-improved	MG6:MG10a	70:30	Low	On track and spoil heap
314	B5	Marsh/marshy grassland	M23b:S9a:M27c:OV16:MG10a:S28	74:10:5:5:5:1	High	S9a - Bottle Sedge (<i>Carex rostrata</i>) dominant, with scattered Soft-rush
315	A2.2	Scrub - scattered	A2.2		Low	Hawthorn
316	B5	Marsh/marshy grassland	M23b:MG10a	85:15	High	
317	B5	Marsh/marshy grassland	M23b:MG6:S22	97:2:1	High	
318	B5	Marsh/marshy grassland	M23b		High	
319	B2.2	Neutral grassland - semi-improved	MG10a:MG6:M23b	55:40:5	Low-Moderate	
320	B2.2	Neutral grassland - semi-improved	MG6:MG10a	80:20	Low	
321	J2.2.2	Hedgerow - defunct, species-poor	W22		Low	Blackthorn abundant, with Hawthorn, Guelder-rose and Dog-rose
322	A1.1.2	Broadleaved woodland - plantation	A1.1.2		Low	Rowan, Wild Cherry, Ash, Blackthorn, Goat Willow and Alder
323	A1.1.2	Broadleaved woodland - plantation	A1.1.2		Low	Blackthorn, Ash, Goat Willow, Wild Cherry, Alder, Hawthorn, Hazel and Birch species
324	B5	Marsh/marshy grassland	M23b		High	
325	B2.2	Neutral grassland - semi-improved	MG6:MG10a	85:15	Low	
326	A1.1.2	Broadleaved woodland - plantation	A1.1.2		Low	Ash, Blackthorn, Alder, Hazel and Rowan
327	A3.1	Scattered broadleaved trees	A3.1		Low	Downy Birch, Tree Cotoneaster, Hawthorn, Sycamore and Ash
328	C3.1	Tall herb and fern - tall ruderal	OV24:MG1b:OV27b:W24	60:20:15:5	Low	

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Polygon no.	Phase 1 code	Phase 1 habitat	NVC code	NVC ratio	GWDTE assessment	Notes
329	A1.1.2	Broadleaved woodland - plantation	A1.1.2		Low	
330	J3.6	Built up areas - buildings/roads	J3.6		NA	Buildings/refuse tip
331	B5	Marsh/marshy grassland	M23b:MG1b	80:20	High	
332	J3.6	Built up areas - buildings/roads	J3.6		NA	Buildings
333	B2.2	Neutral grassland - semi-improved	MG6:MG10a:S22	65:34:1	Low-Moderate	
334	B5	Marsh/marshy grassland	M23b		High	
335	J1.3	Ephemeral/short perennial	J1.3		Low	Grand-toothed Hawkweed, Groundsel, Prickly Sow-thistle (<i>Sonchus asper</i>), Cock's-foot, Red Fescue, Selfheal, <i>Cladonia</i> species, Rosebay Willowherb, Common Bent, Tufted Hair-grass, Ribwort Plantain, Creeping Buttercup, Hairy Bitter-cress (<i>Cardamine hirsuta</i>), Cow Parsley, Crested Dog's-tail, Yorkshire-fog, Dandelion, Autumn Hawkbit, Willowherb species, <i>Peltigera</i> lichen, Thyme-leaved Speedwell (<i>Veronica serpyllifolia</i>), Greater Plantain, Sitka Spruce seedlings, Smooth Lady's-mantle (<i>Alchemilla glabra</i>), Greater Bird's-foot-trefoil, Heath Speedwell (<i>V. officinalis</i>), Sneezewort, White Clover, Procucent Pearlwort (<i>Sagina procumbens</i>), Colt's-foot (<i>Tussilago farfara</i>), Garden Asparagus (<i>Asparagus officinalis</i>), Common Ragwort, Field Horsetail (<i>Equisetum arvense</i>) and Juniper Haircap
336	J2.2.2	Hedgerow - defunct, species-poor	J2.2.2		Low	Beech and Hawthorn hedge
337	E1.7/E2.1	Wet modified bog	M20a:M6c	65:35	Peatland/High	
338	A1.1.2	Broadleaved woodland - plantation	A1.1.2(W4)		High	Alder, Downy Birch, Hazel and Silver Birch
339	B2.2	Neutral grassland - semi-improved	MG6:U4:MG10a	60:20:20	Low	Tightly grazed horse paddock
340	A1.2.2	Coniferous woodland - plantation	A1.2.2		Low	Sitka Spruce dominant, with scattered Hybrid Larch
341	B5	Marsh/marshy grassland	Je/U5		Low-Moderate	Je - Soft-rush
342	B1.2	Acid grassland - semi-improved	U4b:U5:W23a	65:20:15	Low	U4b with Yorkshire-fog and Red Fescue frequent. Devil's-bit Scabious, Common Bent, Sheep's-fescue, Sweet Vernal-grass, Heath Bedstraw, Tormentil, Mat-grass, Bilberry and Ribwort Plantain also present
343	B2.1	Neutral grassland - unimproved	MG9:MG1b	60:40	Low-Moderate	
344	B1.2	Acid grassland - semi-improved	U5a/d:MG9:U4e:M25b:OV25	55:30:5:5:5	Low-Moderate	U4e with Heather, Heath-grass (<i>Danthonia decumbens</i>), Devil's-bit Scabious, Common Bent, Sheep's-fescue, Sweet Vernal-grass and Mat-grass
345	E2.1	Acid/neutral flush	M6c:M6a/b	50:50	High	In quarry
346	B2.1/C3.1	Neutral grassland / tall ruderal	MG9:OV27b:MG1b:J1.4	35:35:25:5	Low-Moderate	J1.4 - Bridewort species
347	A1.2.2	Coniferous woodland - plantation	A1.2.2		Low	Sitka Spruce
348	A1.1.2	Broadleaved woodland - plantation	A1.1.2(W4)		High	Downy Birch and Alder
349	B5	Marsh/marshy grassland	M23b:M6b:M6c:W1	65:15:15:5	High	
350	E1.7	Wet modified bog	M20a-M25a:W4c	70:30	Peatland	Scattered Downy Birch, and rarely Scots Pine. Bog may be modified raised bog, with Hare's-tail Cottongrass, Purple Moor-grass, Cross-leaved Heath, Common Haircap, Strict Haircap (<i>Polytrichum strictum</i>), Bilberry, Flat-topped Bog-moss, Bog Bead-moss, Heather, Heath Plait-moss, Heath Bedstraw, Wavy Hair-grass,

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Polygon no.	Phase 1 code	Phase 1 habitat	NVC code	NVC ratio	GWDTE assessment	Notes
						Common Cottongrass, Heath Star-moss (<i>Campylopus introflexus</i>), Papillose Bog-moss, Narrow Buckler-fern and Red Bog-moss noted
351	A1.1.2	Broadleaved woodland - plantation	A1.1.2		Low	Downy Birch, Hawthorn, Hazel, Alder and Grey Alder (<i>Alnus incana</i>)
352	A1.2.2	Coniferous woodland - plantation	A1.2.2		Low	Sitka Spruce and Hybrid Larch
353	B2.1	Neutral grassland - unimproved	MG9:MG1a/b:U4	50:40:10	Low-Moderate	
354	B5/C3.1	Marsh / tall ruderal	M23a:OV27b:MG9:U5a:M25:A2.2	40:20:20:10:5:5	Low-High	
355	A1.1.2	Broadleaved woodland - plantation	A1.1.2		Low	Alder, Hazel, Downy Birch, Grey Willow, Rowan, willow and oak species, Beech and Wild Cherry
356	C3.1	Tall herb and fern - tall ruderal	OV27b		Low	
357	J3.6	Built up areas - buildings/roads	J3.6		NA	Tarmaced path
358	A1.3.2	Mixed woodland - plantation	A1.3.2		Low	Scots Pine, Norway Spruce (<i>Picea abies</i>), Downy Birch, Alder, rose species, Grey Willow and Sessile Oak
359	E2.1	Acid/neutral flush	M23b:MG9:MG10a	60:35:5	Moderate-High	
360	B4	Improved grassland	MG6		Low	
361	A3.1	Broadleaved woodland - plantation	A3.1		Low	Beech row
362	B4	Improved grassland	MG6:OV24:OV25:A3.1	65:30:5	Low	
363	B2.1	Neutral grassland - unimproved	MG1b:OV27	70:30	Low	
364	B5	Marsh/marshy grassland	M23b		High	
365	B2.2	Neutral grassland - semi-improved	MG6:MG10a:S22	75:20:5	Low	
366	B5	Marsh/marshy grassland	M23b:MG10a	65:35	Moderate-High	
367	B4	Improved grassland	MG6a/MG7a:MG10a:OV25	90:7:3	Low	
368	C3.1	Tall herb and fern - tall ruderal	OV25:MG6:MG1b:MG10a	50:30:15:5	Low	
369	A1.1.1	Broadleaved woodland - semi-natural	W4a/c		High	Downy Birch dominant, with Alder and Grey Willow scattered in the canopy. Ground flora consists of Purple Moor-grass, Creeping Soft-grass, Heath Bedstraw, Broad Buckler-fern (<i>Dryopteris dilatata</i>), Common Bent, Bilberry, Wavy Hair-grass, Sweet Vernal-grass, Soft-rush and Tufted Hair-grass, with self-seeded Beech saplings noted. Bryophytes present included Heath Plait-moss, Five-ranked Bog-moss (<i>Sphagnum quinquefarium</i>), Common Haircap, Springy Turf-moss, Flat-topped Bog-moss, Blunt-leaved Bog-moss and Common Feather-moss
370	A1.1.2	Broadleaved woodland - plantation	A1.1.2(W7c)		Moderate	Ash, Rowan, Sessile Oak, Alder, Downy Birch and Wild Cherry
371	B2.2	Neutral grassland - semi-improved	MG6:MG13:M6	70:25:5	Low	MG13 - Creeping Bent and other grasses. Not accessed due to livestock
372	B4	Improved grassland	MG7a		Low	
373	B4	Improved grassland	MG7a		Low	
374	B4	Improved grassland	MG7a		Low	

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Polygon no.	Phase 1 code	Phase 1 habitat	NVC code	NVC ratio	GWDTE assessment	Notes
375	A3.1	Scattered broadleaved trees	OV27:A3.1	60:40	Low	Scattered Ash and Rowan
376	B4	Improved grassland	MG6/MG7		Low	
377	B2.2	Neutral grassland - semi-improved	MG6:MG10a	80:20	Low	
378	B5	Marsh/marshy grassland	M23a-MG9		Moderate-High	Recently planted with Rowan and Birch species
379	B1.2/A2.2	Acid grassland / scattered scrub	MG10a:U4a/b:MG6b:W23a:OV27:OV25	25:25:20:20:5:5	Low	
380	B5	Marsh/marshy grassland	MG10a		Moderate	
381	B2.2	Neutral grassland - semi-improved	MG6:MG9	65:35	Low-Moderate	
382	B5	Marsh/marshy grassland	M23a/b		High	
383	B2.2	Neutral grassland - semi-improved	MG6b		Low	
384	B5	Marsh/marshy grassland	M23a/b:MG10a:MG6b	50:25:25	Moderate-High	Grazed, some acidic elements
385	B5	Marsh/marshy grassland	M23b:U5(Cc):M23a	70:20:10	High	U5 with Crested Dog's-tail
386	B5	Marsh/marshy grassland	M23a:M23b	70:30	High	Grassy sward
387	B1.2	Acid grassland - semi-improved	U5(Cc)		Low	U5 with Crested Dog's-tail
388	A2.2	Scrub - scattered	U4b(Cc):W21:W23a	40:30:30	Low	U4b with Crested Dog's-tail
389	A2.2	Scrub - scattered	MG5:W21:W23a	40:30:30	Low	
390	B2.1	Neutral grassland - unimproved	MG5c		Low	Well grazed. Common Knapweed, Crested Dog's-tail, Common Bird's-foot-trefoil, White Clover, Ribwort Plantain, Daisy, Cat's-ear, Meadow Buttercup, Mouse-ear-hawkweed, Red Fescue, Sweet Vernal-grass, Devil's-bit Scabious, Springy Turf-moss, Common Bent, Dandelion, Common Ragwort, Orchid (<i>Dactylorhiza</i>) species and Hawkweed species
391	A2.2	Scrub - scattered	W23a:U4b(Cc):W21	50:40:10	Low	U4b with Crested Dog's-tail
392	B2.2	Neutral grassland - semi-improved	MG6b:U4b(Cc):MG10a	50:30:20	Low	U4b with Crested Dog's-tail
393	A1.1.1	Broadleaved woodland - semi-natural	W11:W7c:W7b	60:35:5	Low-Moderate	May be of planted origin. Downy Birch, Silver Birch, Grey Willow, Rowan and Goat Willow
394	F1	Swamp	S4a		Low	Common Reed along ditch line
395	B5	Marsh/marshy grassland	M25c		Moderate	
396	F1	Swamp	S12d		Low	Swampy pond, with Bulrush, Lesser Spearwort, Bog Pondweed (<i>Potamogeton polygonifolius</i>), Soft-rush, Marsh Horsetail, Bottle Sedge, Pedunculate Water-starwort (<i>Callitriche brutia</i>) and Common Duckweed
397	A1.2.2	Coniferous woodland - plantation	A1.2.2		Low	Hybrid Larch
398	A1.1.1	Broadleaved woodland - semi-natural	W7c:W3	95:5	Moderate-High	Downy Birch, Alder and Grey Willow
399	E1.7	Wet modified bog	M25a:M23b	70:30	Peatland/High	
400	A2.2	Scrub - scattered	W1/W3:M23-S9b	65:35	Moderate-High	

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Polygon no.	Phase 1 code	Phase 1 habitat	NVC code	NVC ratio	GWDTE assessment	Notes
401	B5	Marsh/marshy grassland	M23a/b		High	
402	A2.1	Scrub - dense/continuous	W23		Low	
403	B5	Marsh/marshy grassland	MG10a		Moderate	

ANNEX C: SPECIES LISTS

Table C1: Vascular plant species list

Scientific name	Common name	Frequency (DAFOR)*	Notes
<i>Equisetum fluviatile</i>	Water Horsetail	O	
<i>Equisetum arvense</i>	Field Horsetail	R	
<i>Equisetum sylvaticum</i>	Wood Horsetail	O	
<i>Equisetum palustre</i>	Marsh Horsetail	O	
<i>Oreopteris limbosperma</i>	Lemon-scented Fern	R	
<i>Athyrium filix-femina</i>	Lady-fern	O	
<i>Dryopteris filix-mas</i>	Male-fern	O	
<i>Dryopteris affinis</i>	Scaly Male-fern	O	
<i>Dryopteris carthusiana</i>	Narrow Buckler-fern	R	
<i>Dryopteris dilatata</i>	Broad Buckler-fern	O, LF	
<i>Pinus sylvestris</i>	Scots Pine	O	Nationally Scarce when naturally occurring; all instances here of planted origin
<i>Pinus contorta</i>	Lodgepole Pine	R	
<i>Picea sitchensis</i>	Sitka Spruce	A, LD	
<i>Picea abies</i>	Norway Spruce	R	
<i>Larix x marschlinsii</i>	Hybrid Larch	A, LD	
<i>Cupressus lawsoniana</i>	Lawson's Cypress	R	
<i>Ranunculus acris</i>	Meadow Buttercup	O	
<i>Ranunculus repens</i>	Creeping Buttercup	F	
<i>Ranunculus flammula</i>	Lesser Spearwort	O	
<i>Ranunculus hederaceus</i>	Ivy-leaved Crowfoot	R	
<i>Ribes sanguineum</i>	Flowering Currant	R	
<i>Chrysosplenium oppositifolium</i>	Opposite-leaved Golden-saxifrage	R	
<i>Lotus corniculatus</i>	Common Bird's-foot-trefoil	O	
<i>Lotus pedunculatus</i>	Greater Bird's-foot-trefoil	O	
<i>Vicia cracca</i>	Tufted Vetch	O	
<i>Vicia sepium</i>	Bush Vetch	O	
<i>Lathyrus pratensis</i>	Meadow Vetchling	O, LF	
<i>Trifolium repens</i>	White Clover	F	
<i>Trifolium dubium</i>	Lesser Trefoil	R	
<i>Trifolium pratense</i>	Red Clover	O, LF	
<i>Trifolium medium</i>	Zigzag Clover	R	
<i>Cytisus scoparius ssp. scoparius</i>	Broom	O	
<i>Ulex europaeus</i>	Gorse	O	
<i>Polygala vulgaris</i>	Common Milkwort	R	Uncommon in VC77
<i>Spiraea salicifolia agg.</i>	Bridewort	R	
<i>Prunus spinosa</i>	Blackthorn	LF	
<i>Prunus avium</i>	Wild Cherry	R	
<i>Malus domestica</i>	Apple	R	
<i>Sorbus aucuparia</i>	Rowan	LF	
<i>Sorbus intermedia</i>	Swedish Whitebeam	R	
<i>Sorbus aria</i>	Common Whitebeam	R	

Scientific name	Common name	Frequency (DAFOR)*	Notes
<i>Cotoneaster frigidus</i>	Tree Cotoneaster	R	
<i>Crataegus monogyna</i>	Hawthorn	F	
<i>Filipendula ulmaria</i>	Meadowsweet	F	
<i>Rubus idaeus</i>	Raspberry	O	
<i>Rubus cockburnianus</i>	White-stemmed Bramble	R	
<i>Rubus fruticosus agg.</i>	Bramble	O	
<i>Potentilla anserina</i>	Silverweed	O	
<i>Potentilla erecta</i>	Tormentil	O	
<i>Comarum palustre</i>	Marsh Cinquefoil	R	
<i>Geum urbanum</i>	Wood Avens	O	
<i>Alchemilla filicaulis</i>	Hairy Lady's-mantle	R	Uncommon in VC77
<i>Alchemilla glabra</i>	Smooth Lady's-mantle	O	
<i>Rosa rugosa</i>	Japanese Rose	R	
<i>Rosa canina</i>	Dog-rose	O	
<i>Rosa caesia sens. lat.</i>	Northern Dog-rose	R	
<i>Ulmus glabra</i>	Wych Elm	R	
<i>Urtica dioica</i>	Common Nettle	F, LA	
<i>Fagus sylvatica</i>	Beech	O, LF	
<i>Quercus petraea</i>	Sessile Oak	O	Q. x rosacea may be present
<i>Quercus robur</i>	Pedunculate Oak	O	Q. x rosacea may be present
<i>Betula pendula</i>	Silver Birch	R	
<i>Betula pubescens</i>	Downy Birch	F, LA	
<i>Alnus glutinosa</i>	Alder	O, LF	
<i>Alnus incana</i>	Grey Alder	R	
<i>Corylus avellana</i>	Hazel	R	
<i>Hypericum perforatum</i>	Perforate St John's-wort	R	
<i>Viola riviniana</i>	Common Dog-violet	R	
<i>Viola palustris</i>	Marsh Violet	O	
<i>Populus tremula</i>	Aspen	R	
<i>Salix x fragilis</i>	Hybrid Crack-willow	O	
<i>Salix alba</i>	White Willow	R	
<i>Salix viminalis</i>	Osier	R	
<i>Salix caprea</i>	Goat Willow	O	
<i>Salix cinerea</i>	Grey Willow	O	
<i>Linum catharticum</i>	Fairy Flax	R	
<i>Geranium pratense</i>	Meadow Crane's-bill	R	
<i>Geranium molle</i>	Dove's-foot Crane's-bill	R	
<i>Epilobium hirsutum</i>	Great Willowherb	O, LF	
<i>Epilobium montanum</i>	Broad-leaved Willowherb	O, LF	
<i>Epilobium obscurum</i>	Short-fruited Willowherb	R	
<i>Epilobium ciliatum</i>	American Willowherb	O	
<i>Epilobium palustre</i>	Marsh Willowherb	O	
<i>Chamaenerion angustifolium</i>	Rosebay Willowherb	F, LA	
<i>Aesculus hippocastanum</i>	Horse-chestnut	R	
<i>Acer platanoides</i>	Norway Maple	O	

Scientific name	Common name	Frequency (DAFOR)*	Notes
<i>Acer pseudoplatanus</i>	Sycamore	F, LA	
<i>Tilia x europaea</i>	Lime	R	
<i>Capsella bursa-pastoris</i>	Shepherd's-purse	O	
<i>Cardamine pratensis</i>	Cuckooflower	O	
<i>Cardamine flexuosa</i>	Wavy Bitter-cress	O	
<i>Cardamine hirsuta</i>	Hairy Bitter-cress	R	
<i>Persicaria maculosa</i>	Redshank	R	
<i>Polygonum aviculare</i>	Knotgrass	O	
<i>Rumex acetosella</i>	Sheep's Sorrel	O	
<i>Rumex acetosa</i>	Common Sorrel	F	
<i>Rumex longifolius</i>	Northern Dock	R	
<i>Rumex crispus</i>	Curled Dock	O	
<i>Rumex obtusifolius</i>	Broad-leaved Dock	F	
<i>Stellaria media</i>	Common Chickweed	LF	
<i>Stellaria graminea</i>	Lesser Stitchwort	O	
<i>Stellaria alsine</i>	Bog Stitchwort	O	
<i>Cerastium fontanum</i>	Common Mouse-ear	F	
<i>Cerastium glomeratum</i>	Sticky Mouse-ear	O	
<i>Sagina procumbens</i>	Procumbent Pearlwort	O	
<i>Spergula arvensis</i>	Corn Spurrey	R	Vulnerable in Great Britain
<i>Spergularia marina</i>	Lesser Sea-spurrey	R	
<i>Silene dioica</i>	Red Campion	R	
<i>Atriplex prostrata</i>	Spear-leaved Orache	R	
<i>Atriplex patula</i>	Common Orache	R	
<i>Montia fontana</i>	Blinks	R	
<i>Cornus sanguinea</i>	Dogwood	R	
<i>Cornus sericea</i>	Red-osier Dogwood	R	
<i>Cornus sericea 'Flaviramea'</i>	Golden-twig Dogwood	R	
<i>Lysimachia punctata</i>	Dotted Loosestrife	R	
<i>Calluna vulgaris</i>	Heather	O	
<i>Erica tetralix</i>	Cross-leaved Heath	O	
<i>Vaccinium oxycoccos</i>	Cranberry	R	
<i>Vaccinium myrtillus</i>	Bilberry	O	
<i>Galium palustre</i>	Common Marsh-bedstraw	O, LF	
<i>Galium verum</i>	Lady's Bedstraw	O	
<i>Galium saxatile</i>	Heath Bedstraw	LF	
<i>Galium aparine</i>	Cleavers	LF	
<i>Symphytum x uplandicum</i>	Russian Comfrey	O	
<i>Myosotis laxa</i>	Tufted Forget-me-not	R	
<i>Calystegia sepium</i>	Hedge Bindweed	O	
<i>Fraxinus excelsior</i>	Ash	F	
<i>Ligustrum vulgare</i>	Wild Privet	R	
<i>Ligustrum ovalifolium</i>	Garden Privet	R	
<i>Digitalis purpurea</i>	Foxglove	O	
<i>Veronica officinalis</i>	Heath Speedwell	R	

Scientific name	Common name	Frequency (DAFOR)*	Notes
<i>Veronica beccabunga</i>	Brooklime	R	
<i>Veronica serpyllifolia</i>	Thyme-leaved Speedwell	O	
<i>Veronica chamaedrys</i>	Germander Speedwell	O, LF	
<i>Plantago major</i>	Greater Plantain	O, LF	
<i>Plantago lanceolata</i>	Ribwort Plantain	F	
<i>Callitriche stagnalis</i>	Common Water-starwort	O	
<i>Callitriche brutia</i>	Pedunculate Water-starwort	R	
<i>Scrophularia nodosa</i>	Common Figwort	O	
<i>Stachys palustris</i>	Marsh Woundwort	O	
<i>Galeopsis tetrahit</i>	Common Hemp-nettle	R	
<i>Galeopsis bifida</i>	Bifid Hemp-nettle	R	
<i>Ajuga reptans</i>	Bugle	O	
<i>Prunella vulgaris</i>	Selfheal	O	
<i>Euphrasia agg.</i>	Eyebright	O	
<i>Rhinanthus minor</i>	Yellow-rattle	O	
<i>Pedicularis sylvatica</i>	Lousewort	R	
<i>Ilex aquifolium</i>	Holly	O	
<i>Campanula rotundifolia</i>	Harebell	O	
<i>Cirsium vulgare</i>	Spear Thistle	O	
<i>Cirsium palustre</i>	Marsh Thistle	O	
<i>Cirsium arvense</i>	Creeping Thistle	O, LF	
<i>Centaurea nigra</i>	Common Knapweed	F	
<i>Lapsana communis</i>	Nipplewort	O	
<i>Hypochaeris radicata</i>	Cat's-ear	O	
<i>Scorzoneroideis autumnalis</i>	Autumn Hawkbit	O	
<i>Sonchus oleraceus</i>	Smooth Sowthistle	R	
<i>Sonchus asper</i>	Prickly Sowthistle	R	
<i>Taraxacum agg.</i>	Dandelion	O	
<i>Pilosella officinarum</i>	Mouse-ear-hawkweed	O	
<i>Hieracium sabaudum</i>	Autumn Hawkweed	R	
<i>Hieracium grandident</i>	Grand-toothed Hawkweed	O, LF	Uncommon in VC77; non-native species
<i>Hieracium vulgatum</i>	Common Hawkweed	O	
<i>Gnaphalium uliginosum</i>	Marsh Cudweed	R	
<i>Symphyotrichum agg.</i>	Michaelmas-daisy	R	
<i>Bellis perennis</i>	Daisy	O	
<i>Achillea ptarmica</i>	Sneezewort	O	
<i>Achillea millefolium</i>	Yarrow	O	
<i>Matricaria discoidea</i>	Pineappleweed	O	
<i>Senecio vulgaris</i>	Groundsel	O	
<i>Jacobaea vulgaris</i>	Common Ragwort	O	
<i>Jacobaea aquatica</i>	Marsh Ragwort	R	
<i>Tussilago farfara</i>	Colt's-foot	O	
<i>Petasites hybridus</i>	Butterbur	R	
<i>Sambucus nigra</i>	Elder	O	
<i>Viburnum opulus</i>	Guelder-rose	O	

Scientific name	Common name	Frequency (DAFOR)*	Notes
<i>Symphoricarpos albus</i>	Snowberry	R	Invasive species on North Lanarkshire LBAP
<i>Lonicera periclymenum</i>	Honeysuckle	R	
<i>Succisa pratensis</i>	Devil's-bit Scabious	O	
<i>Anthriscus sylvestris</i>	Cow Parsley	O, LF	
<i>Myrrhis odorata</i>	Sweet Cicely	O	
<i>Heracleum sphondylium</i>	Hogweed	O, LF	
<i>Aegopodium podagraria</i>	Ground-elder	O	
<i>Angelica sylvestris</i>	Wild Angelica	LF	
<i>Lemna minor</i>	Common Duckweed	R	
<i>Potamogeton natans</i>	Broad-leaved Pondweed	R	
<i>Potamogeton polygonifolius</i>	Bog Pondweed	R	
<i>Narthecium ossifragum</i>	Bog Asphodel	R	
<i>Dactylorhiza fuchsii</i>	Common Spotted-orchid	R	
<i>Dactylorhiza maculata</i>	Heath Spotted-orchid	R	
<i>Crocsmia x crocosmiiflora</i>	Montbretia	R	
<i>Asparagus officinalis</i>	Garden Asparagus	R	Second record for VC77; non-native neophyte
<i>Sparganium erectum</i>	Branched Bur-reed	O	
<i>Typha latifolia</i>	Bulrush	O, LF	
<i>Juncus articulatus</i>	Jointed Rush	R	
<i>Juncus acutiflorus</i>	Sharp-flowered Rush	F, LA	
<i>Juncus bulbosus</i>	Bulbous Rush	O	
<i>Juncus squarrosus</i>	Heath Rush	R	
<i>Juncus bufonius</i>	Toad Rush	R	
<i>Juncus effusus</i>	Soft-rush	F, LA	
<i>Juncus conglomeratus</i>	Compact Rush	O	
<i>Luzula multiflora</i>	Heath Wood-rush	O	
<i>Eriophorum angustifolium</i>	Common Cottongrass	O	
<i>Eriophorum vaginatum</i>	Hare's-tail Cottongrass	O	
<i>Trichophorum germanicum</i>	Deergrass	R	
<i>Eleocharis palustris</i>	Common Spike-rush	R, LA	
<i>Carex leporina</i>	Oval Sedge	O	
<i>Carex echinata</i>	Star Sedge	O, LF	
<i>Carex rostrata</i>	Bottle Sedge	O, LF	
<i>Carex flacca</i>	Glaucous Sedge	O	
<i>Carex panicea</i>	Carnation Sedge	O	
<i>Carex nigra</i>	Common Sedge	O, LF	
<i>Nardus stricta</i>	Mat-grass	O	
<i>Glyceria fluitans</i>	Floating Sweet-grass	O, LF	
<i>Lolium perenne</i>	Perennial Rye-grass	A, LD	
<i>Festuca rubra</i>	Red Fescue	F, LA	
<i>Festuca ovina</i>	Sheep's-fescue	O	
<i>Dactylis glomerata</i>	Cock's-foot	F	
<i>Cynosurus cristatus</i>	Crested Dog's-tail	F, LA	
<i>Puccinellia distans</i>	Reflexed Saltmarsh-grass	R	
<i>Arrhenatherum elatius</i>	False Oat-grass	F, LA	

Scientific name	Common name	Frequency (DAFOR)*	Notes
<i>Anthoxanthum odoratum</i>	Sweet Vernal-grass	F	
<i>Phalaris arundinacea</i>	Reed Canary-grass	O, LF	
<i>Holcus lanatus</i>	Yorkshire-fog	F	
<i>Holcus mollis</i>	Creeping Soft-grass	O, LF	
<i>Deschampsia cespitosa</i>	Tufted Hair-grass	F, LA	
<i>Avenella flexuosa</i>	Wavy Hair-grass	O	
<i>Aira caryophyllea</i>	Silver Hair-grass	R	
<i>Aira praecox</i>	Early Hair-grass	R	
<i>Agrostis capillaris</i>	Common Bent	F	
<i>Agrostis stolonifera</i>	Creeping Bent	F	
<i>Agrostis canina</i>	Velvet Bent	R	
<i>Agrostis vinealis</i>	Brown Bent	R	
<i>Alopecurus pratensis</i>	Meadow Foxtail	O	
<i>Alopecurus geniculatus</i>	Marsh Foxtail	O	
<i>Phleum pratense</i>	Timothy	O, LF	
<i>Poa annua</i>	Annual Meadow-grass	O	
<i>Poa trivialis</i>	Rough Meadow-grass	O	
<i>Poa humilis</i>	Spreading Meadow-grass	O	
<i>Elymus repens</i>	Common Couch	O, LF	
<i>Molinia caerulea</i>	Purple Moor-grass	O, LF	
<i>Phragmites australis</i>	Common Reed	O, LA	
<i>Danthonia decumbens</i>	Heath-grass	R	
Key to DAFOR scale:			
D	Dominant	LD	Locally Dominant
A	Abundant	LA	Locally Abundant
F	Frequent	LF	Locally Frequent
O	Occasional		
R	Rare		

Table C2: Selected bryophyte list

Scientific name	Common name
<i>Atrichum undulatum</i>	Smooth Haircap
<i>Aulacomnium palustre</i>	Bog Bead-moss
<i>Brachythecium rutabulum</i>	Rough-stalked Feather-moss
<i>Bryum argenteum</i>	Silver-moss
<i>Bryum capillare</i>	Capillary Thread-moss
<i>Calliergonella cuspidata</i>	Pointed Spear-moss
<i>Campylopus flexuosus</i>	Rusty Swan-neck Moss
<i>Campylopus introflexus</i>	Heath Star-moss
<i>Dicranum scoparium</i>	Broom Fork-moss
<i>Hypnum cupressiforme</i>	Cypress-leaved Plait-moss
<i>Hypnum jutlandicum</i>	Heath Plait-moss
<i>Hypnum sp.</i>	Plait-moss species
<i>Kindbergia praelonga</i>	Common Feather-moss
<i>Lophocolea bidentata</i>	Bifid Crestwort
<i>Plagiomnium undulatum</i>	Hart's-tongue Thyme-moss
<i>Plagiothecium undulatum</i>	Waved Silk-moss
<i>Pleurozium schreberi</i>	Red-stemmed Feather-moss
<i>Polytrichum commune</i>	Common Haircap
<i>Polytrichum juniperinum</i>	Juniper Haircap
<i>Polytrichum piluliferum</i>	Bristly Haircap
<i>Polytrichum strictum</i>	Strict Haircap
<i>Racomitrium ericoides</i>	Dense Fringe-moss
<i>Racomitrium lanuginosum</i>	Woolly Fringe-moss
<i>Rhytidiadelphus loreus</i>	Little Shaggy-moss
<i>Rhytidiadelphus squarrosus</i>	Springy Turf-moss
<i>Sphagnum capillifolium</i>	Red Bog-moss
<i>Sphagnum cuspidatum</i>	Feathery Bog-moss
<i>Sphagnum denticulatum</i>	Cow's-horn Bog-moss
<i>Sphagnum fallax</i>	Flat-topped Bog-moss
<i>Sphagnum magellanicum</i>	Magellanic Bog-moss
<i>Sphagnum palustre</i>	Blunt-leaved Bog-moss
<i>Sphagnum papillosum</i>	Papillose Bog-moss
<i>Sphagnum quinquefarium</i>	Five-ranked Bog-moss
<i>Thuidium tamariscinum</i>	Common Tamarisk-moss