
Hollandmey Renewable Energy Development
Environmental Impact Assessment Report
Technical Appendix 8.1: Habitats and Vegetation



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1 INTRODUCTION

1.1.1 This Technical Appendix has been prepared to accompany **Chapter 8: Ecology and Biodiversity** of the Hollandmey Renewable Energy Development (RED) (the proposed Development) Environmental Impact Assessment (EIA) Report.

1.1.2 It presents detailed methodologies of desk studies and field surveys completed to establish baseline habitat and vegetation conditions to inform the design and assessment of the proposed Development and should be read with reference to the following figures, presented in **Volume 3 of the EIA Report**:

- **Figure 8.1** – Designated Sites for Nature Conservation;
- **Figure 8.2** – Phase 1 Habitat Plan; and,
- **Figure 8.3** – National Vegetation Classification (NVC) Plan.

1.1.3 The following terms are used throughout this Technical Appendix:

- **The application boundary** – All lands within the red line application boundary shown in **Figure 8.1 to 8.3**. The application boundary consists of the **Site** (main development area) and the offsite area (proposed access roads)
- **The study Area** – within the application boundary and out to up to 250 m where access permissions allowed.

2 METHODOLOGY

2.1.1 Baseline habitat and vegetation conditions have been established through a desk study review of existing information pertaining to the Site and surrounding area, and field surveys.

2.1.2 The objectives of the baseline studies were to:

- Establish the spatial distribution of habitats and vegetation communities which may be impacted by the proposed Development;
- Identify the presence and distribution of any habitat types listed on Annex 1 of the Habitats Directive¹ or the Scottish Biodiversity List (SBL) and/or which represent potential Groundwater Dependent Terrestrial Ecosystems (GWDTEs), to inform a subsequent hydrological assessment; and,
- Record the presence of any protected or non-native plant species listed on Schedule 8 and 9 of the Wildlife and Countryside Act 1981 (as amended) respectively.

2.2 Desk Study

2.2.1 A review of Sitelink² and consultation with the Highland Biological Recording Group (HBRG) was undertaken to identify the proximity of the Site to any statutory or non-statutory designated sites for nature conservation with habitat or botanical qualifying interests and obtain any existing records of protected and/or notable flora within the Site and the surrounding wider area.

2.2.2 The following search areas were adopted:

¹ Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora.

² <https://sitelink.nature.scot/home> [Accessed April 2020].

- Statutory designated sites for nature conservation within 10 km of the Site;
- Non-statutory designated sites for nature conservation within 2 km of the Site; and,
- Existing records of protected and/or non-native plant species within 2 km of the Site.

2.3 Field Surveys

2.3.1 The following field surveys have been completed:

- Phase 1 habitat survey; and,
- National Vegetation Classification (NVC) survey.

2.3.2 Survey methodologies and subsequent interpretation of results have made reference to the following key pieces of guidance;

- *An Illustrated Guide to British Upland Vegetation* (Averis et al., 2004);
- *Handbook for Phase 1 Habitat Survey - a technique for environmental audit* (JNCC, 2010);
- British Plant Communities. Volume 3. Grasslands and montane communities (Rodwell, 1992);
- British Plant Communities. Volume 2. Mires and Heaths (Rodwell, 1993);
- *National Vegetation Community Users' Handbook* (Rodwell, 2006);
- Land Use Planning System SEPA Guidance Note 31: Guidance on Assessing the Impacts of Development Proposals on Groundwater Abstractions and Groundwater Dependent Terrestrial Ecosystems (SEPA, 2014);
- WFD95: *A Functional Wetland Typology for Scotland – Field Survey Manual* (SNIFFER, 2009); and,
- Field flora of the British Isles (Stace, 1997).

Phase 1 Habitat Survey

2.3.3 A Phase 1 habitat survey was undertaken between the 26 and 27 of May 2020. A further extended Phase 1 habitat survey was undertaken on 18 October 2021 for the proposed access route along roads to the north of the Site.

2.3.4 The survey was undertaken in accordance with the UK industry standard Joint Nature Conservation Committee (JNCC) Phase 1 Habitat Methodology (JNCC, 2010).

2.3.5 During the survey all habitats within the Site and out to 250 m, and the offsite area plus a 110 m buffer as shown in **Figure 8.2**, and as access permissions allowed, were mapped according to industry standards and described using a series of 'Target Notes' (TNs).

NVC Survey

2.3.6 An NVC survey was undertaken on the 10 June following the guiding principles detailed within the 'National Vegetation Classification: User's Handbook' (Rodwell, 2006). The survey was subsequently updated on the 10 July and 6-10 2020 October and on 18 October 2021 to accommodate changes in design for the proposed Development.

- 2.3.7 The NVC study area comprised all noteworthy habitats within the Site and out to 250 m where access permissions allowed, plus within a 110 m buffer of the offsite area, concentrating on those areas where plant communities were deemed likely represent habitat types listed on Annex 1 of the Habitats Directive and/or represent GWDEs.
- 2.3.8 During survey, square quadrats of size 2 m² were distributed throughout homogenous stands of vegetation identified in order to provide a representative sample of the vegetation communities present within the study area.
- 2.3.9 In each quadrat sample area, data was collected on the presence and abundance of vascular plant species using the Domin scale. These data were then analysed and classified to an NVC vegetation community, where possible, using the keys in Rodwell (1992 and 1993).

3 RESULTS

3.1 Desk Study

- 3.1.1 A summary of statutory designated sites for nature conservation with habitat and botanical qualifying interests located within 10 km of the Site is provided in **Table 3.1** and should be read with reference to **Figure 8.1**.

Table 3.1: Statutory designated sites for nature conservation.

SAC: Special Area of Conservation (SAC); SSSI: Site of Special Scientific Interest.

Designated Site	Distance and Orientation from proposed Development	Qualifying Interests
Phillips Mains Mire SSSI	0.3 km	Blanket Bog*.
Stroupster Peatlands SSSI	0.8 km south	Blanket Bog*. Oligotrophic Loch.
Caithness and Sutherland Peatlands SAC	0.8 km south	Acid peat-stained lakes and ponds. Blanket Bog*. Clear-water lakes or lochs with aquatic vegetation and poor to moderate nutrient levels. Depressions on peat substrates Very wet mires often identified by unstable quaking surface. Wet heathland and cross-leaved heath. Marsh saxifrage <i>Saxifraga hirculus</i> . Otter.
Loch of Mey SSSI	0.8 km south	Blanket Bog*.
Loch Heilen SSSI	1.2 km north west	Transition grassland.
Dunnet Links SSSI	2 km west	Mesotrophic Loch.
Dunscanby Head SSSI	2.7 km west	Sand dunes.

Designated Site	Distance and Orientation from proposed Development	Qualifying Interests
Stroma SSSI	4.9 km north west	Maritime cliff.
Dunnet Head SSSI	5.6 km north east	Maritime cliff.
Loch of Durran SSSI	7.80 km south west	Maritime cliff.
Loch of Wester SAC	8.8 km east	Transition grasslands. Vascular plant assemblage.
Loch of Wester SSSI	9 km south	Naturally nutrient-rich lakes or lochs which are often dominated by pondweed.

*indicates priority habitat

- 3.1.2 No non-statutory sites for nature conservation are located within 2 km of the Site.
- 3.1.3 In consultation, with the HBRG no existing records of protected flora listed on Schedule 8 of the Wildlife and Countryside Act 1981 (as amended) were identified within 2 km of the Site.
- 3.1.4 A single record of Japanese knotweed *Fallopia japonica* a non-native invasive species listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended), was however returned by the HBRG, from approximately 1.6 km to the north east of the Site.

3.2 Field Surveys

- 3.2.1 This section presents the results of baseline field surveys, including an overview of habitat types present within the study area and their distribution. It should be read with reference to **Figures 8.2** and **8.3**.
- 3.2.2 Phase 1 habitat survey Target Notes are detailed in **Annex 1**, and detailed species lists, NVC tables and NVC Target Notes relating to each NVC community are presented in **Annex 2** and **Annex 3**. Photographic plates of key habitats, NVC community types and target notes are presented in **Annex 4**.

Results: the Site

- 3.2.3 The Site is predominantly covered by commercially managed coniferous woodland (A1.2.2) comprised of a mix of Sitka Spruce *Picea sitchensis* and lodgepole pine *Pinus contorta* varying from 5-25 m tall, with a dense needle layer understorey.
- 3.2.4 Between the woodland compartments, habitats primarily comprise marshy grassland (B5), dominated by soft rush *Juncus effusus*. Towards the boundary of the Site, areas of dry modified bog (E1.8) are found, lacking most sphagnums and dominated by common heather *Calluna vulgaris*, cross-leaved heath *Erica tetralix* and bilberry *Vaccinium myrtillus*, with small areas of wet modified bog (E1.7) dominated by soft rush and purple moor-grass *Molinia caerulea*.

- 3.2.5 Elsewhere, within the north eastern extent of Site, a single large area of blanket bog (E1.6.1) occurs and comprises the Phillips Mains Mire Site of Special Scientific Interest (SSSI). Two areas of modified blanket bog are also found within the south eastern extent of the Site.
- 3.2.6 Within the wider study area, outwith the Site, blanket bog is more extensive. The blanket bog habitat within the study area is dominated by common heather and hare's-tail cottongrass *Eriophorum vaginatum* and is often rich in sphagnums and other bog specialists including sundew *Drosera spp.*, bog asphodel *Narthecium ossifragum*, common butterwort *Pinguicula vulgaris* and cranberry *Vaccinium oxycoccos*.
- 3.2.7 Other habitats within the Site include scrub (A2) dominated by gorse *Ulex sp.* mostly along the western edge of the Site and along the roadway to the north, as well as several patches of willow *Salix spp.* scrub towards to southern end of the Site. Improved pastures (B4 and J1.1) are also found within the south eastern extent of the Site.
- 3.2.8 Further stands of woodland within the Site include broadleaved plantation woodland (A1.1.2) dominated by hawthorn *Crataegus monogyna*, birch *Betula sp* and sycamore *Acer pseudoplatanus* as well as mixed plantation woodland (A1.3.2) where patches of Sitka spruce have interspersed with broadleaved species, mostly within the north of the Site. In addition, towards the eastern end of the Site, there is a large area of recently felled coniferous plantation woodland (A4.1), to the north of the Phillips Mains Mire SSSI.
- 3.2.9 Outwith the Site, including within the offsite area of the Application Boundary, several further areas of animal-grazed improved grassland (B4 and J1.1) are located towards the north eastern end of the study area, with a single species-poor hawthorn-dominated hedgerow (J2.1.1) and several stone walls (J2.5) acting as field boundaries.
- 3.2.10 Standing water occurs within a single area of swamp (F1) within the northern part of the study area dominated by common reed *Phragmites australis*, and a second in the southern part dominated by emergent sedges *Carex spp.*, cinquefoil *Potentilla sp.* and horsetails *Equisetum spp.* Oligotrophic (G1.3) pools are also located at a few scattered localities around the Site and Dystrophic bog pools (E1.6.1) of mid-range size are found towards the east of the Site. The study area is drained by a number of small Dystrophic streams (G2.4) running across the proposed development.
- 3.2.11 No protected or non-native plant species listed on Schedule 8 and 9 of the Wildlife and Countryside 1981 (as amended) respectively were recorded within the study area.

Blanket bog

- 3.2.12 The best quality blanket bog habitat within the study area is located within the Phillips Mains Mire SSSI in the north east of the Site. This bog is completely surrounded by forestry plantation but appears to have be unaffected by drainage or peat cutting activities, as has the area of bog located outwith the Site, in the east of the study area, towards Upper Gills.
- 3.2.13 These blanket bog habitats show no signs of erosion or grazing. Topographically they are very flat and contain numerous sphagnum hollows, including *S. magellanicum*. The SSSI has a series of larger bog pools varying in size and depth, with the largest ones being 40 x 40 m and up to 2+ m deep.
- 3.2.14 The bog plant community has an even mix of *Calluna vulgaris* or other ericoids and *Eriophorum angustifolium* and *E. vaginatum*, the latter forming large tussocks. Other sizable hummocks appear across the bog in the form of *Racomitrium lanuginosum* and sphagnums including *S. capillifolium* and *S. papillosum*. There is also a good mix of other habitat associates such as *Trichophorum germanicum*, large mix of *Cladonia spp.* lichens and bog specialists such as *Drosera rotundifolia*, *D. anglica*, *Narthecium ossifragum* and *Dactylorhiza maculata*.

- 3.2.15 The best NVC community match for blanket bog habitats within the SSSI and wider study area is M18a *Erica tetralix* -*sphagnum papillosum* raised and blanket mire. *Sphagnum magellanicum*-*Andromeda polifolia* subcommunity. However, the frequency of *Cladonia* spp. and variable amounts of *S. papillosum* suggest a possible mosaic with the M18b *Empetrum nigrum* - *Cladonia* subcommunity, a lowland raised or blanket bog. The bog pools present are classified as M2a *Sphagnum cuspidatum* / *recurvum* bog pool community, which is characteristically associated with M18 blanket bogs.
- 3.2.16 Within the south of the Site there are two further areas of blanket bog, relatively undisturbed but not of the same quality as that found within the SSSI. The best community match for these areas is however also the M18a *Erica tetralix* -*sphagnum papillosum* raised and blanket mire. *Sphagnum magellanicum*-*Andromeda polifolia* subcommunity. The Sphagnum is mostly limited to *S. capillifolium* but has formed into small to medium sized hummocks. There are no signs of historical peat cutting or drainage cuts, grazing appears to be very limited and only a small amount of Sitka Spruce have self-seeded from the surrounding forestry.
- 3.2.17 It should be noted that the NVC survey was only able to directly access the blanket bog within the Site, with extensive areas of blanket bog areas also located within the wider study area, as shown in **Figure 8.2**, which may vary to some degree in their communities / subcommunities. All blanket bog communities are however, listed as on Annex 1 of the Habitats Directive.
- 3.2.18 Blanket bog and related bog pools are rain-fed communities with a low dependence on groundwater.

Bog pool

- 3.2.19 Bog pool communities are present within the Phillips Mains Mire SSSI within the north east of the Site. Some of the larger pools only contain *Potentilla palustris* or *Menyanthes trifoliata* or a mix of the two as emergent vegetation, but most of the smaller ones contain abundant Sphagnums, predominantly *S. cuspidatum*, with some *S. fuscum* and *S. papillosum*, along with *Carex* spp. e.g. *C. echinata*.
- 3.2.20 The best NVC community match for the bog pool within the blanket bog area is **M2a *Sphagnum cuspidatum/recurvum* bog pool community, *Rhynchospora alba* subcommunity**, with extensive areas of *Sphagnum cuspidatum* present. Other typical species *Drosera* spp., and *Narthecium ossifragum* feature along with *Eriophorum angustifolium* around the fringes. This subcommunity is the closest fit for the bog pools here, despite the lack of *Rhynchospora alba*.
- 3.2.21 The M2 community is typically associated with the surrounding M18 community.

Modified bog

- 3.2.22 Further areas of blanket bog within the Site are of a much more degraded quality and are classified as wet and dry modified bog. These smaller areas of habitat on deeper peat around woodland planting within the Site have been influenced by tree growth, grazing and numerous drainage cuttings. The wet modified bog vegetation still shows predominantly blanket bog communities, but with much reduced sphagnum diversity (mainly *S. capillifolium*), and a lack of pools or hummocks. The presence of blanket bog vegetation, especially sphagnums, indicates that this habitat may still be capable of peat formation at least on a small scale.
- 3.2.23 Dry modified bog areas also show much reduced presence of sphagnums overall. In some areas *Molinia caerulea* has become more dominant, a typical feature of modified bogs.
- 3.2.24 The best NVC community match for wet modified bog habitats within the study area is **M19a *Calluna vulgaris* - *Eriophorum vaginatum* blanket mire, *Erica tetralix* subcommunity**. Features

present include *Sphagnum capillifolium* as a constant, often at good levels of cover, along with key species *Calluna vulgaris* and *Eriophorum angustifolium*.

- 3.2.25 A wide east – west gap in the forestry within the south west of the Site, represents one of the better condition areas of wet modified bog, with constant *S. capillifolium*, forming small hummocks in places. Modification here consists of drainage cuts around the edges of the forestry and recent damage by a tracked excavator.
- 3.2.26 The best community match for many of the dry modified bog habitats within the study area is **M15d *Trichophorum cespitosum* – *Erica tetralix* wet heath, *Vaccinium myrtillus* subcommunity**. As this vegetation is on deeper peat in an area of forestry, this NVC community is likely to represent a modified and somewhat dried-out bog community rather than a genuine wet heath. These areas generally occur where deep and dense furrows have been cut, but not planted with trees, although in most areas they are being colonised by trees self-seeding from the surrounding plantations.
- 3.2.27 M15d is the driest subcommunity of M15 and key features present in the study area include the abundance of *Calluna vulgaris*, *Deschampsia flexuosa* and *Pleurozium schreberi*, along with a greatly reduced presence of sphagnums. Although *Vaccinium myrtillus* was not present in the NVC quadrats it was recorded within the study area during the Phase 1 habitat survey.
- 3.2.28 Other modified bog communities are dominated by marshy grassland habitats, dominated by soft rush *Juncus effusus* or purple moor grass *Molinia caerulea*. The *Juncus* dominated areas occurred on pockets of peat within wider habitat areas corresponding to **M23b *Juncus effusus*–*Galium palustre* rush pasture** as described in the section below.
- 3.2.29 Larger discrete areas of *Molinia* dominated modified bog on deep peat are found in the south east of the Site, corresponding to **M25a *Molinia caerulea* – *Potentilla erecta* mire, *Erica tetralix* subcommunity**. These areas have mostly wet ground and are relatively undisturbed. They are all on deep peat and represent modified blanket bog vegetation. The dominance of *Molinia* is likely due to past management practices as there is little evidence of current disturbance, which means that restoration to a more characteristic blanket bog community is likely to be achievable
- 3.2.30 As modified blanket bog, all these areas are likely to have a low dependence on groundwater.

Marshy Grassland

- 3.2.31 Marshy grassland occupies large swathes of the open areas of the study area, chiefly in the centre of the Site in wide woodland rides and in large sections of the south of the Site.
- 3.2.32 Within the study area, the best NVC community match for the majority of the marshy grassland habitat is the **M23b *Juncus effusus*–*Galium palustre* rush pasture, *Juncus effusus* subcommunity**. Many areas are used for grazing sheep and cattle and the ground is often heavily poached.
- 3.2.33 The grassland is largely composed of *Juncus effusus* and *Juncus conglomeratus*, sometimes in equal abundances and usually has *Galium palustre* and *Epilobium palustre* present, with *Deschampsia cespitosa* and *Holcus lanatus* present in varying abundances.
- 3.2.34 There is some variability within this community. In some areas shallow peat (<0.5 m) is coupled with numerous small drainage cuttings. Species composition is similar to that described above, but with higher amounts of *Carex nigra*, *Luzula multiflora* and patches of *Juncus squarrosus*. In other areas, the ground is drier with no peat, more grazing pressure, and an increased coverage of grasses such as *Anthoxanthum odoratum*. Further areas are wetter with large drainage cuttings, greater presence of *Deschampsia flexuosa*, and sedges in lower points. Grazing and poaching are present throughout.

- 3.2.35 M23 marshy grasslands tend to have a high dependency on groundwater. However within the Site, some of the M23 community is located on deeper peat, alongside other habitats developed on modified blanket bog, and in these cases the groundwater dependency is likely to be lower.

Reed swamp

- 3.2.36 Reed swamp is represented by a small area of marginal vegetation, located adjacent to a waterbody in the north of the study area, to the north of the Site. The habitat is dominated by *Phragmites australis* with small amounts of *Filipendula ulmaria* and some other species associated with wet swamps including *Myosotis scorpioides*, *Hydrocotyle vulgaris* and *Stellaria uliginosa*. The closest NVC community match is **S4 *Phragmites australis* swamp**, which is characterised by dominant *Phragmites*. The swamp occurs in a wet hollow surrounded by bog / heath habitats either side of it, which it gradually transitions into.
- 3.2.37 Swamps of this type have low dependence on groundwater.

Other Communities

- 3.2.38 A number of other very small areas of habitat were noted across the Site, these were not surveyed using NVC methodology due to their size, but likely communities are suggested below.
- 3.2.39 A small patch of the horsetail *Equisetum fluviatile* was recorded within the reed swamp described above (around 10% of the area). Small areas of *Equisetum fluviatile* were also found elsewhere in the study area (see **Annex 4** and **Figure 8.3**, Target Notes H6, H9 and H12). Although not specifically surveyed for NVC these are likely to represent **S10 *Equisetum fluviatile* swamp**, a community with dominant *E. fluviatile* and no other species being frequent. This is likely to have low dependence on groundwater.
- 3.2.40 An area of sedge swamp is also present just outside the southern boundary of the Site, which did not easily classify into a distinct community; being very wet, located on saturated peat soil and surrounded by bog on which some *Salix aurita* was growing. Plant composition included abundant *Eriophorum angustifolium*, some *Equisetum fluviatile*, *Potentilla palustris* and Sphagnums including *S. fallax* and *S. capillifolium*. Some *Salix repens* also grows around some of the pond edges and may represent a transitional community between **M3 *Eriophorum angustifolium* bog pool community** and **S9 – *Carex Rostrata* swamp**. Located on the edge of blanket bog this is unlikely to be a GWDE but is likely to represent an example of a habitat type listed on Annex 1 of the Habitats Directive, developed around a bog pool related to blanket bog.
- 3.2.41 There are also a number of **S9 – *Carex rostrata* swamp** type communities scattered around the Site and wider study area, mainly to the south along the deep ditches within woodland planting (see **Annex 4** and **Figure 8.3**, Target Note H8) and which are likely to have low dependence on groundwater.
- 3.2.42 There are a number of other small wet areas and pools which may approximate to **M29 – *Hypericum elodes*–*Potamogeton polygonifolius* soakaways**, **M3–*Eriophorum angustifolium* bog pool communities** and **M14 *Schoenus nigricans* – *Narthecium ossifragum* mire** (see **Annex 4** and **Figure 8.3**, Target Notes H10 and H11). M3 is likely to have low dependence on groundwater, however M29 and M14, are likely to have high groundwater dependence.
- 3.2.43 A number of small patches of flag iris *Iris pseudacorus* were also recorded within the study area (see **Annex 4** and **Figure 8.3**, Target Notes H1, H3 and H7), likely to approximate to **M28 *Iris pseudacorus* – *Filipendula ulmaria* mire**, and having low groundwater dependence.
- 3.2.44 Finally, there are some neutral herb rich stream side communities which were noted at a few locations within the study area (see **Annex 4** and **Figure 8.3**, Target Notes H4 and H13). These were

found in and along the banks of a few shallow, slow flowing streams in shallow mud and loose stones, downstream of peat bogs and were surrounded by marshy grassland. They usually supported *Juncus bulbosus* and *J. articulatus* present and a high abundance of herbs such as *Ranunculus flammula*, *Myosotis secunda*, *Pedicularis palustris*, *Cardamine pratensis*, *Sparganium erectum* and some *Carex echinata*, *C. panicea* and *C. nigra*. Sphagnum appeared to be absent from these wet flushes. As stream side communities, these will have low likelihood of groundwater dependence.

Results: Offsite Area (Proposed Access Route)

- 3.2.45 The proposed access route is located to the north of the Site, along the lines of existing public and private roads, with a survey buffer area of 110 m either side of the roads. The land is largely a mix of agricultural land used for grazing sheep and cattle, open areas of bog, marshy grassland and wet heath used for grazing (historically for peat cutting), and areas of commercial forestry. The roads cross two watercourses and a small area of broadleaved woodland is present along the A836 road.
- 3.2.46 Phase 1 habitats and NVC communities are broadly similar to those elsewhere in the Study Area (see **Figures 8.2** and **8.3**, and habitats summary **Table 3.2**)
- 3.2.47 The road is lined with gorse scrub (phase 1 A2 / NVC W23), species poor intact hawthorn and beech hedges (phase 1 J2.1.2) and false oat grass dominated verges (NVC MG1). There are also some roadside ditches with vegetation dominated by meadow sweet (NVC M27) (see target notes ATN2, 4, and 5). Bog, heath and grassland areas include blanket bog (Phase 1 E1.6.1) wet modified bog (Phase 1 E1.7), and on areas of shallower peat, wet heath (Phase 1 D2) and marshy grassland (Phase 1 B5). NVC communities correspond to those found elsewhere in the application area and often form mosaics with each other, and also with unimproved acid grassland (U4a) and more modified grazing grassland (MG6). Elsewhere there are more extensive fields of predominantly improved grazing land and crops, and also areas of Sitka spruce plantation and clearfell. There is a small strip of wet broadleaved semi natural woodland in the north east (Target note ATN3 phase 1 A 1.1.1, NVC W7)
- 3.2.48 The Burn of Rattar and Burn of Horsegrow watercourses cross the offsite area, these are both a steadily flowing watercourses with peat-stained water (Target notes ATN7 and 10).

Habitats summary

- 3.2.1 Vegetation communities present within the study area and included in the NVC survey are summarised in **Table 3.2**, along with corresponding Habitats Directive (92/43/EEC) Annex 1 Habitat type, SBL priority habitat type, LBAP priority habitat type and potential GWDTE status in accordance with SEPA Guidance Note 31 (2014) and SNH NVC / EUNIS / Annex 1 correspondence tables (2017). Some of these habitats only occur within the buffers of the Site and offsite area and so area within the application boundary is 'n/a'. Additionally, areas are not given for habitats which only occur as a minor component in mosaic with other habitats.

Table 3.2: Summary of vegetation communities within the study area.

Phase 1 Habitat Type	NVC Community	Area within/ percentage of the Application Boundary	Principal Corresponding Habitat Types listed on Annex 1 of the Habitats Directive	Corresponding SBL Priority Habitat Type	Dependence of community/ habitat on groundwater. 1=High, 2=moderate, 3=low
Blanket bog (E1.6.1)	M2a <i>Sphagnum cuspidatum</i> / <i>recurvum</i> bog pool community	2.27 ha / 0.2%	Natural dystrophic lakes and ponds (bog pools)	Blanket bog	3
Blanket bog (E1.6.1)	M3 <i>Eriophorum angustifolium</i> bog pool community (suggested only)	n/a	Natural dystrophic lakes and ponds (bog pools)	Blanket bog	3
Blanket bog (E1.6.1)	M14 <i>Schoenus nigricans</i> – <i>Narthecium ossifragum</i> mire (suggested only)	n/a	None directly applies	Upland flushes, fens and swamps	1
Blanket bog (E1.6.1)	M18a <i>Erica tetralix</i> - <i>sphagnum papillosum</i> raised and blanket mire	116.72 ha / 9.8%	Active blanket bog.	Blanket bog	3
Blanket bog (E1.6.1)	M19 <i>Calluna vulgaris</i> - <i>Eriophorum vaginatum</i> blanket mire	n/a (occurs in mosaic with M25a wet modified bog)	Active blanket bog.	Blanket bog	3
Blanket bog (E1.6.1)	M29 – <i>Hypericum elodes</i> – <i>Potamogeton polygonifolius</i> soakaways (suggested only)	n/a	Transition mires and quaking bogs Depressions on peat substrates	Blanket bog	1
Blanket bog (E1.6.1)	S9 – <i>Carex rostrata</i> swamp (suggested only)	n/a	None directly applies	Lowland fen	3

Phase 1 Habitat Type	NVC Community	Area within/ percentage of the Application Boundary	Principal Corresponding Habitat Types listed on Annex 1 of the Habitats Directive	Corresponding SBL Priority Habitat Type	Dependence of community/ habitat on groundwater. 1=High, 2=moderate, 3=low
Dry modified bog (E1.8)	M15d <i>Trichophorum cespitosum</i> – <i>Erica tetralix</i> wet heath, <i>Vaccinium myrtillus</i> subcommunity.	64.04 ha / 5.6%	Restorable Annex 1 Blanket Bog <i>Considered to represent a modified blanket bog rather than wet heath, but capable of restoration.</i>	Blanket bog	3
Wet modified bog (E1.7)	M19a <i>Calluna vulgaris</i> - <i>Eriophorum vaginatum</i> blanket mire, <i>Erica tetralix</i> subcommunity	61.91 ha / 5.3%	Blanket bog, modified but capable of restoration.	Blanket bog	3
Wet modified bog (E1.7)	M23b <i>Juncus effusus</i> – <i>Galium palustre</i> rush pasture, <i>Juncus effusus</i> subcommunity	1.48 ha / 0.12%	Blanket bog, modified but capable of restoration.	Blanket bog	3
Wet modified bog (E1.7) Dry modified bog (E1.8) Marsh/marshy grassland (B5)	M25a <i>Molinia caerulea</i> – <i>Potentilla erecta</i> mire, <i>Erica tetralix</i> sub-community.	55.29 ha / 4.68.8	Blanket bog, modified but capable of restoration.	Blanket bog	3 as on deep peat.
Wet heath (D2)	M15c <i>Trichophorum germanicum</i> – <i>Erica tetralix</i>	0.006 / <0.01%	North Atlantic wet heath	Wet heath	2

Phase 1 Habitat Type	NVC Community	Area within/ percentage of the Application Boundary	Principal Corresponding Habitat Types listed on Annex 1 of the Habitats Directive	Corresponding SBL Priority Habitat Type	Dependence of community/ habitat on groundwater. 1=High, 2=moderate, 3=low
	wet heath, <i>Cladonia</i> subcommunity				
Marsh/marshy grassland (B5)	M23b <i>Juncus effusus</i> – <i>Galium palustre</i> rush pasture, <i>Juncus effusus</i> subcommunity.	105.06 ha / 8.8%	-	Purple moor-grass & rush pastures	1 (where not on deep peat).
Marsh/marshy grassland (B5)	M28 <i>Iris pseudacorus</i> – <i>Filipendula ulmaria</i> mire (suggested only)	n/a	-	Lowland fen	3
Marsh/marshy grassland (B5) mosaic	MG1 <i>Arrhenatheretum elatorius</i> grassland (suggested only)	n/a	-	-	3
Marsh/marshy grassland (B5) mosaic	MG6 <i>Lolio-Cynosuretum cristati</i> grassland (suggested only)	n/a	-	-	3
Improved grassland	MG6 <i>Lolio-Cynosuretum cristati</i> grassland (suggested only)	n/a	-	-	3
Marsh/marshy grassland (B5) mosaic	MG9 <i>Holcus lanatus</i> – <i>Deschampsia cespitosa</i> grassland	n/a	-	-	2
Tall ruderal (C3.1)	M27 <i>Filipendula ulmaria</i> – <i>Angelica sylvestris</i> mire	n/a	-	Lowland Fen	2

Phase 1 Habitat Type	NVC Community	Area within/ percentage of the Application Boundary	Principal Corresponding Habitat Types listed on Annex 1 of the Habitats Directive	Corresponding SBL Priority Habitat Type	Dependence of community/ habitat on groundwater. 1=High, 2=moderate, 3=low
	(suggested only)				
Swamp (F1)	S4 <i>Phragmites australis</i> swamp	n/a	-	Reedbeds	3
Swamp (F1)	S10 <i>Equisetum fluviatile</i> swamp (suggested only)	n/a	-	Lowland fen	3
Unimproved acid grassland (B1.1)	U4a <i>Festuca ovina</i> – <i>Agrostis capillaris</i> – <i>Galium saxatile</i> grassland, typical subcommunity	n/a (occurs in mosaic with M23b, M15c, M25a and MG9)	-	Lowland dry acid grassland	3
Broad-leaved semi-natural woodland (A1.1.1)	W7 <i>Alnus glutinosa</i> - <i>Fraxinus excelsior</i> – <i>Lysimachia nemorum</i> woodland (suggested community)	n/a	H91E0 Alder woodland on flood plains.	Wet Woodland --	1
Scrub (A2)	W23 <i>Ulex europaeus</i> – <i>Rubus fruticosus</i> scrub (suggested community)	n/a	-	-	3

4 REFERENCES

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ANNEX 1: PHASE 1 HABITAT SURVEY TARGET NOTES

Target Notes presented in **Table A1-1** should be read with reference to **Figure 8.2** presented in Volume 8 of the EIA Report and photographic plates presented in **Annex 5**.

Table A1-1: Phase 1 habitat survey Target Notes.

Target Note	Grid reference	Description	Photograph Ref. (Annex 5)
TN1	ND 29819 69845	Degraded, dry modified bog. Overgrazed and poached by cattle, with most of the <i>Calluna</i> trampled and dead or dying.	19
TN2	ND 29900 69954	Muddy, slow flowing burn, lined with numerous sedge <i>Carex spp.</i> and horsetail <i>Equisetum sp.</i> 1.5 m wide and 0.25 m deep channel. Water shallow <20cm. Toad <i>Bufo bufo</i> recorded.	20
TN3	ND 30220 70168	Pond/swamp: seasonally floods, but low water level at time of survey, only a few cm deep. Around 40 m x 15 m in size, muddy base. Dominated by <i>Eriophorum angustifolium</i> , with bog pondweed <i>Potamogeton polygonifolius</i> and <i>Myrica gale</i> is numerous.	21
TN4	ND 30906 70646	Mosaic of bog pools of varying size. Some only 2 x 2 m up to 40 x 30 m. Smaller ones clogged with <i>Sphagnums</i> , such as <i>S. cuspidatum</i> . Larger ponds have mostly open, clear water to depths of over 1 m. All have emergence bog bean <i>Menyanthes trifoliata</i> and marsh cinquefoil <i>Comarum palustre</i> , more sparse, fringed with <i>Juncus effusus</i> . The surrounding bog is off good quality, dominated by <i>Eriophorum vaginatum</i> and <i>E. angustifolium</i> , <i>Calluna</i> and bog specialists including sundew <i>Drosera sp.</i> And bog asphodel <i>Narthecium ossifragum</i> .	22
TN5	ND 30903 70784	Redshank <i>Tringa totanus</i> and curlew <i>Numenius arquata</i> noted nesting around this pool.	23
TN6	ND 30058 70749	Water course: channel 0.25 m wide, 0.75 m deep, water shallow, <15 m, slow flowing.	24
TN7	ND 29821 70657	Water course: shallow and muddy, <10 cm deep, 2 m wide. Clogged with sedges <i>Carex spp.</i> Frog <i>Rana temporaria</i> also recorded.	25
TN8/TN9	ND 29753 70633	Palmate newts <i>Lissotriton helveticus</i> recorded in old forestry drainage ditch. Several present.	26
		Small area of planed hawthorns <i>Crataegus monogyna</i> . Heavily grazed. 0.5-1 m high.	27
TN10	ND 29706 70317	Pond: 30x15 m in size. Shallow <30 cm depth full of marsh horsetail <i>Equisetum palustre</i> and more palmate newts recorded.	28

Target Note	Grid reference	Description	Photograph Ref. (Annex 5)
TN11	ND 29674 70196	Drainage ditch, 1.5 m wide, 1.5 m depth. Mostly stagnant water, clogged with submerged vegetation.	29
TN12	ND 27737 71722	Swamp dominated by common reed <i>Phragmites australis</i> and horsetail, with lots of cuckooflower <i>Cardamine pratensis</i> .	30
TN13	ND 29001 72004	Area of scattered planted hawthorn, birch and rowan <i>Sorbus aucuparia</i> in between small stands of sitka. Broadleaved trees averaging 5 m tall.	31
TN14	ND 29095 71826	Pond: 110x40 m in size. Clear water quality with much of the surface covered in pondweed, <1 m depth and edged by iris <i>Iris sp</i> , marsh marigold <i>Caltha palustris</i> and cuckooflower. Likely to be suitable for amphibians.	32
TN15	ND 29167 71385	Area of planted sycamores among Sitka trees around 7 m tall	33
TN16	ND 28941 71512	Iris beds around muddy stream, only 0.25 m wide and <0.25 m deep, slow flowing.	34
TN17	ND 28812 71526	Stream: 0.25 m wide and 0.25 m deep, shallow water and slow flowing with mud and algae. Stream clogged with <i>Juncus</i> and cuckoo flower.	35
TN18	ND 28015 70573	Stone ruin with reptile potential.	36
TN19	ND 28479 71113	Open area of marsh grassland with some larch <i>Larix sp</i> around 10 m tall. Also, some scattered sitka and planted broadleaved species including sycamore, birch <i>Betula sp</i> and hawthorn growing to c. 5 m tall.	37
TN20	ND 28261 70172	Stream: steady flow with clear water and approx. 0.5 m wide and deep with stone base and lined with grasses, sedges <i>Carex sp</i> and <i>Juncus</i> . Evidence of water vole <i>Arvicola amphibius</i>	38
TN21	NH 38281 70343	Pond: 30x15 m wide, 1.5 m deep and very clear. Some algae and pondweed with obvious visible signs of newts present and considered suitable for other amphibian species.	39
TN22	ND 29237 69296	Burn: In substantial ditch measuring 3 m wide and 2.5 m deep. Water clear and flowing freely. Mostly vegetated by sedges.	40
TN23	ND 29305 67879	Marshy pond: dominated by marsh cinquefoil <i>Comarum palustre</i> , sedges, bog pondweed <i>Potamogeton polygonifolius</i> and horsetails. Measuring 20x20 m and shallow.	41
TN24	ND 28966 67859	Stream: 0.25 m wide, 1 m deep channel and water 15 cm deep. Slow flowing with muddy substrate. Common lizard <i>Zootoca vivipara</i> observed at this location.	-
TN25	ND 28175 69079	Stream 'Link Burn': Channel 2 m wide, 1.5 m deep channel and water depth c0.25 m. Relatively clear with	42

Target Note	Grid reference	Description	Photograph Ref. (Annex 5)
		stony bottom and contains some pondweed and is lined with rushes and purple moor grass <i>Molinia caerulea</i> .	
TN26	ND 28681 69731	Adder <i>Vipera berus</i> observed at this location	-
TN27	ND 29590 70707	Pond: Flooded stone quarry over 2 m depth at one end and 0.5 m depth at the other. Some iris, marsh marigold and horsetails marginal vegetation with very clear water quality. 40x30 m in size. Some newts present as well as large numbers of tadpoles and several signs of large invertebrate population including dragonfly nymphs.	43
TN28	ND 29345 70490	Stone ruin and functioning barns. Ruin has lots of stoncrop <i>Sedum sp</i> growing on it. Crevices within ruin apparently suitable for nesting birds. Largest stone barn has nesting starling <i>Sturnus vulgaris</i> , jackdaw <i>Corvus mondeula</i> and barn owl <i>Tyto alba</i> . Barn owl had three chicks. Several areas of bat roost and nesting potential. Oystercatcher <i>Haematopus ostralegus</i> nesting in field outside.	44
TN29	ND 29445 71181	Hawthorn hedge. 1 m tall. Not very old and not very species rich. Lots of cow parsley <i>Anthriscus sylvestris</i> .	-
ATN1	ND29807 73228	Area of clearfell, full of brash, disturbed ground and a mix of tufted hair grass <i>Deschampsia cespitosa</i> and false oat grass <i>Arrhenatherum elatius</i> with curled dock <i>Rumex crispus</i> and common hogweed <i>Heracleum sphondylium</i> , thistles and other weeds of disturbed ground.	-
ATN2	ND29747 73230	Typical roadside habitats with false oat grass dominated grass verges and lines of thick gorse <i>Ulex europaeus</i> , forming hedgerows.	57
ATN3	ND29635 73323	Broadleaf woodland, a mix of sycamore <i>Acer pseudoplatanus</i> , alder <i>Alnus glutinosa</i> and birch with some rowan, trees around 10m tall and an understory of tufted hair grass tussocks and dense stands of broad buckler fern <i>Dryopteris dilatata</i> .	-
ATN4	ND28885 72295	Species poor beech <i>Fagus sylvatica</i> hedges, around 2.5m tall. Well maintained by clipping. Understorey limited to some mown grasses.	-
ATN5	ND26032 72088	Hawthorn hedge around 2m tall. A bit richer than above beech hedge with raspberry <i>Rubus idaeus</i> and bramble <i>Rubus fruticosus</i> thickets below with a mix of tall herbs including meadowsweet <i>Filipendula ulmaria</i> and common hogweed.	-

Target Note	Grid reference	Description	Photograph Ref. (Annex 5)
ATN6	ND26924 71327	Small area of planted broadleaves around 4-5m tall and mostly a mix of alder, birch and rowan but also with a few more established Sitka Spruce trees around 10m tall. Understorey here is soft rush dominated marshy grassland.	-
ATN7	ND27037 71410	Burn of Rattar; Steady flowing burn of peat stained water. Water course around 2.5m wide and around 1m deep, flowing over a bed of pebbles, boulders and bedrock. Banks a mix of marshy grassland, some great wood-rush <i>Luzula sylvatica</i> and gorse scrub.	58
ATN8	ND27036 71391	Stone road bridge, inspected for bat roosts but appears to be pretty well sealed and could find any evidence, although there could be potential crevices underneath that were not visible from the bank	-
ATN9	ND28403 72025	Stone road bridge, again appears to be pretty well sealed and no evidence of bat roosts were found.	-
ATN10	ND28415 72010	Burn of Horsegrow; burn not visible in image due to dense covering vegetation. Similar in character to the Burn of Rattar but averaging a little narrower at around 2m. Banks here are a mix of dense gorse scrub but also with some alder and sycamore trees around 8m tall.	59

ANNEX 2: NVC SURVEY RESULTS

Tables A2.1 and A2.2 below outline DOMIN scales and scores for NVC survey results.

Table A2-1: Dominance (DOMIN) scale.

Code	Approximate percentage cover in quadrat
10	>90%
9	75 – 90%
8	51 – 75%
7	34 – 50%
6	26 – 33%
5	11 – 25%
4	5 – 10%
3	<5%, many individuals
2	<5%, a few individuals
1	<5%, one or two individuals

Table A2-2: NVC quadrat tables.

Phase 1 Habitat	Blanket Bog					
	Grid Reference	ND 30941 70570	ND 31099 70831	ND 31048 70975	ND 39781 70965	ND 30501 70905
Approximate Peat Depth (cm)	200+	200+	200+	200+	200+	
Species	Q1	Q2	Q3	Q4	Q5	
<i>Calluna vulgaris</i>	7	5	5	5	5	5
<i>Myrica gale</i>	4	-	-	-	-	1
<i>Vaccinium myrtillus</i>	3	-	-	-	-	1
<i>Eriophorum vaginatum</i>	5	5	5	2	5	5
<i>Eriophorum angustifolium</i>	3	5	5	5	4	5
<i>Erica tetralix</i>	4	4	4	4	2	5
<i>Sphagnum capillifolium</i>	7	5	7	4	4	5
<i>Hylocomium splendens</i>	7	-	-	4	-	2
<i>Plagiothecium undulatum</i>	3	-	-	-	-	1
<i>Polytrichum strictum</i>	3	-	-	-	-	1
<i>Cladonia sp.</i>	4	8	4	10	7	5
<i>Drosera rotundifolia</i>	-	1	2	-	2	3
<i>Narthecium ossifragum</i>	-	3	3	-	4	3
<i>Trichophorum germanicum</i>	-	4	5	4	4	4
<i>Drosera anglica</i>	-	-	2	-	-	1
<i>Sphagnum cuspidatum</i>	-	-	4	-	4	2
<i>Sphagnum papillosum</i>	-	-	4	-	3	2
<i>Sphagnum magellanicum</i>	-	-	-	-	3	1
<i>Empetrum nigrum</i>	-	-	-	3	-	1
<i>Dactylorhiza maculata</i>	-	-	-	2	2	2
<i>Pleurozium schreberi</i>	-	-	-	-	3	1
<i>Carex Panicea</i>	-	-	-	1	-	1

Phase 1 Habitat	Bog Pool					
Grid Reference	ND 31074 70929	ND 30957 70976	ND 30885 70953	ND 30655 70898	ND 30549 70864	Frequency
Approximate Peat Depth (cm)	200+	200+	200+	200+	200+	
Species	Q1	Q2	Q3	Q4	Q5	
<i>Menyanthes trifoliata</i>	4	4	3	5	7	5
<i>Dactylorhiza maculata</i>	1	-	-	-	-	1
<i>Drosera rotundifolia</i>	2	1	2	2	-	4
<i>Drosera anglica</i>	1	2	-	-	-	2
<i>Calluna vulgaris</i>	4	5	4	1	-	4
<i>Narthecium ossifragum</i>	6	4	3	3	-	4
<i>Sphagnum cuspidatum</i>	5	10	8	9	10	5
<i>Sphagnum papillosum</i>	6	4	3	-	4	4
<i>Sphagnum capillifolium</i>	4	3	4	4	-	4
<i>Erica tetralix</i>	3	3	3	3	-	4
<i>Carex Panicea</i>	4	-	-	-	-	1
<i>Eriophorum angustifolium</i>	4	4	4	4	4	5
<i>Trichophorum germanicum</i>	-	3	-	-	-	1
<i>Sphagnum fuscum</i>	-	4	5	4	-	3
<i>Eriophorum vaginatum</i>	-	4	-	-	-	1
<i>Myrica gale</i>	-	-	4	-	-	1
<i>Cladonia sp.</i>	-	-	-	2	-	1
<i>Molinia caerulea</i>	-	-	-	-	4	1

Phase 1 Habitat	Wet Modified Bog											
Grid Reference	ND 30135 70118	ND 28720 68993	ND 29126 69135	ND 28785 69914	ND 28956 71652	ND 28888 69496	ND 28582 69651	ND 30821 70291	ND 28243 70461	ND 28119 69181	ND 28133 70553	Frequency
Approximate Peat Depth (cm)	160	200+	200+	200+	200+	200+	120	200+	200+	90	200+	
Species	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	
<i>Calluna vulgaris</i>	7	7	4	5	5	5	7	5	8	7	7	5
<i>Eriophorum vaginatum</i>	5	6	-	-	5	-	8	7	-	6	-	3
<i>Eriophorum angustifolium</i>	6	3	3	-	2	3	3	5	5	4	7	5
<i>Erica tetralix</i>	5	4	5	5	4	5	3	6	4	5	3	5
<i>Trichophorum germanicum</i>	4	-	4	1	5	-	3	2	5	-	-	3
<i>Pleurozium schreberi</i>	7	4	4	7	-	-	-	5	5	-	5	3
<i>Sphagnum capillifolium</i>	5	8	7	4	7	4	8	7	6	6	6	5
<i>Cladonia sp.</i>	4	5	-	-	4	-	5	3	4	3	4	4
<i>Polytrichum commune</i>	1	-	-	-	-	-	-	3	-	-	-	1
<i>Sphagnum papillosum</i>	-	-	-	-	-	5	-	2	-	-	-	1
<i>Racomitrium lanuginosum</i>	-	4	-	-	-	-	-	3	-	-	-	1
<i>Narthecium ossifragum</i>	-	-	2	4	1	3						2
<i>Myrica gale</i>	-	2	5	4	5	5						2
<i>Polygala serpyllifolia</i>	-	-	-	1	-	-						1
<i>Empetrum nigrum</i>	-	2	-	1	-	4	-	-	-	4	-	2
<i>Potentilla erecta</i>	-	-	2	1	-	2	-	-	-	3	-	2
<i>Hylocomium splendens</i>	-	4	5	-	-	-						1
<i>Hypnum jutlandicum</i>	-	4	5	-	5	-						1
<i>Sphagnum compactum</i>	-	3	-	-	-	-						1
<i>Carex echinata</i>	-	-	-	-	3	-						1

Phase 1 Habitat	Wet Modified Bog											
Grid Reference	ND 30135 70118	ND 28720 68993	ND 29126 69135	ND 28785 69914	ND 28956 71652	ND 28888 69496	ND 28582 69651	ND 30821 70291	ND 28243 70461	ND 28119 69181	ND 28133 70553	Frequency
Approximate Peat Depth (cm)	160	200+	200+	200+	200+	200+	120	200+	200+	90	200+	
Species	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	
<i>Festuca ovina</i>	-	2	-	-	-	-						1
<i>Molinia caerulea</i>	-	-	8	8	-	6						1
<i>Drosera rotundifolia</i>							2	-	-	-	-	1
<i>Carex binervis</i>							-	-	-	1	-	1

Phase 1 Habitat	Dry Modified Bog										
Grid Reference	ND 28318 70959	ND 28085 71078	ND 28102 71183	ND 28651 69781	ND 28679 69732	ND 28178 68286	ND 28151 68341	ND 28610 68855	ND 28559 70631	ND 28771 69655	Frequency
Approximate Peat Depth (cm)	120	200+	180	60	60	50	50	200+	200+	60	
Species	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	
<i>Calluna vulgaris</i>	7	9	10	9	8	9	8	4	4	2	5
<i>Eriophorum angustifolium</i>	3	4	1	4	7	4	-	-	-	1	4
<i>Eriophorum vaginatum</i>	7	-	-	1	4	-	-	5	8	8	3
<i>Erica tetralix</i>	4	-	1	-	1	4	4	5	4	-	4
<i>Luzula multiflora</i>	-	1	-	-	1	-	-	-	-	3	2
<i>Empetrum nigrum</i>	4	4	-	-	1	3	-	6	3	-	3
<i>Deschampsia flexuosa</i>	-	4	3	-	3	3	5	5	4	7	4
<i>Juncus squarrosus</i>	4	-	-	-	-	-	-	-	-	-	1
<i>Succisa pratensis</i>	-	1	-	-	-	-	-	-	-	-	1
<i>Potentilla erecta</i>	2	1	1	1	1	2	2	-	2	1	5

Phase 1 Habitat	Dry Modified Bog										
Grid Reference	ND 28318 70959	ND 28085 71078	ND 28102 71183	ND 28651 69781	ND 28679 69732	ND 28178 68286	ND 28151 68341	ND 28610 68855	ND 28559 70631	ND 28771 69655	Frequency
Approximate Peat Depth (cm)	120	200+	180	60	60	50	50	200+	200+	60	
Species	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	
<i>Sorbus aucuparia</i>	-	1	1	-	1	-	-	1	-	-	2
<i>Sphagnum capillifolium</i>	4	3	-	-	-	-	-	-	-	-	1
<i>Hylocomium splendens</i>	9	-	-	-	5	9	7	6	5	6	4
<i>Polytrichum commune</i>	-	1	-	-	-	-	-	3	3	-	2
<i>Pleurozium schreberi</i>	-	8	9	9	5	3	7	6	8	6	5
<i>Cladonia sp.</i>	-	-	2	2	-	1	-	-	-	-	2
<i>Dryopteris dilatata</i>	-	1	1	-	-	-	2	2	-	-	2
<i>Plagiothecium undulatum</i>	-	-	3	-	-	-	-	-	-	-	1
<i>Peltigera canina</i>	-	3	2	-	-	-	-	-	-	-	1
<i>Molinia caerulea</i>	-	-	-	3	-	-	-	3	-	-	1
<i>Festuca ovina</i>	-	-	-	-	-	2	-	-	-	-	1
<i>Agrostis canina</i>	-	-	-	-	-	-	3	2	2	-	2
<i>Blechnum spicant</i>	-	-	-	-	-	-	2	-	-	-	1
<i>Equisetum arvense</i>	-	-	-	-	-	1	-	-	-	-	1
<i>Rhytidiadelphus squarrosus</i>	-	4	4	4	4	-	-	-	-	-	2
<i>Hypnum jutlandicum</i>	-	-	-	-	-	-	-	5	-	4	1
<i>Myrica gale</i>	-	-	-	-	-	-	-	5	-	-	1
<i>Galium saxatile</i>	-	-	-	-	-	-	-	3	3	-	1
<i>Carex nigra</i>	-	-	-	-	2	2	-	-	1	-	2

Phase 1 Habitat	Marshy Grassland															
Grid Reference	ND 30112 69009	ND 29821 68836	ND 29889 68399	ND 29211 70258	ND 28782 70966	ND 29212 71611	ND 28614 71862	ND 28420 71316	ND 28431 71125	ND 29748 70760	ND 29593 70338	ND 29360 69697	ND 28064 68919	ND 29728 69470	ND 28052 70093	Frequency
Approximate Peat Depth (cm)	45	30	25	200+	30	40	130	50	200+	0	30	80	40	10	120	
Species	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	
<i>Juncus effusus</i>	5	5	7	9	-	8	9	8	6	7	6	7	4	7	7	5
<i>Carex nigra</i>	4	2	3	-	3	1	-	-	-	7	5	-	-	3	2	3
<i>Cardamine pratensis</i>	3	2	-	-	-	-	-	-	-	1	1	-	-	1	-	2
<i>Lychnis flos-cuculi</i>	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
<i>Cerastium fontanum</i>	1	1	-	-	-	-	2	-	-	-	-	-	-	-	-	1
<i>Trifolium repens</i>	3	3	-	-	3	-	-	-	-	-	-	-	-	-	-	1
<i>Ranunculus acris</i>	3	1	-	-	1	-	-	-	-	-	-	-	-	-	-	1
<i>Succisa pratensis</i>	2	2	-	-	1	-	-	-	-	-	-	-	-	-	-	1
<i>Anthoxanthum odoratum</i>	4	7	7	-	4	-	3	-	-	3	-	-	-	3	2	3
<i>Juncus conglomeratus</i>	5	5	-	-	7	-	-	4	7	-	4	4	9	-	-	3
<i>Equisetum arvense</i>	3	3	-	-	4	-	1	-	-	-	-	-	1	4	-	2
<i>Cynosurus cristatus</i>	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
<i>Carex Panicea</i>	3	-	-	-	4	-	-	-	-	-	-	-	-	-	-	1
<i>Hypnum jutlandicum</i>	9	6	-	-	7	-	-	-	-	-	-	-	-	-	-	1
<i>Eriophorum angustifolium</i>	2	-	3	-	-	1	-	-	-	-	1	-	-	-	2	3
<i>Ranunculus flammula</i>	1	3	-	-	-	-	-	-	-	-	-	-	-	-	-	1
<i>Rorippa nasturtium-aquaticum</i>	2	-	-	-	2	-	-	-	-	-	-	-	-	-	-	1
<i>Epilobium palustre</i>	1	-	-	3	3	-	2	2	3	3	3	1	1	-	2	4
<i>Holcus lanatus</i>	3	2	-	2	-	3	3	2	5	3	3	4	2	3	3	4

Phase 1 Habitat	Marshy Grassland															
Grid Reference	ND 30112 69009	ND 29821 68836	ND 29889 68399	ND 29211 70258	ND 28782 70966	ND 29212 71611	ND 28614 71862	ND 28420 71316	ND 28431 71125	ND 29748 70760	ND 29593 70338	ND 29360 69697	ND 28064 68919	ND 29728 69470	ND 28052 70093	Frequency
Approximate Peat Depth (cm)	45	30	25	200+	30	40	130	50	200+	0	30	80	40	10	120	
Species	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	
<i>Deschampsia flexuosa</i>	3	2	-	-	-	-	-	-	-	-	-	-	-	-	-	1
<i>Rumex acetosa</i>	-	1	4	-	-	4	4	-	-	-	-	-	-	-	-	1
<i>Luzula multiflora</i>	-	2	2	-	-	-	1	2	-	-	-	-	1	1	-	2
<i>Cirsium palustre</i>	-	4	-	-	-	-	-	1	4	-	2	-	1	-	1	2
<i>Pleurozium schreberi</i>	-	-	4	-	-	4	-	6	-	-	-	6	-	-	4	2
<i>Rhytidiadelphus squarrosus</i>	-	-	7	-	-	5	5	5	5	5	7	-	-	5	6	3
<i>Dryopteris dilatata</i>	-	-	-	2	-	1	-	-	-	-	-	1	-	-	-	1
<i>Stellaria uliginosa</i>	-	-	-	2	-	-	-	-	3	-	-	-	-	-	-	1
<i>Peltigera canina</i>	-	-	-	1	-	-	-	2	-	-	-	-	-	-	-	1
<i>Deschampsia cespitosa</i>	-	-	-	2	-	-	-	4	5	3	4	6	5	6	5	3
<i>Alopecurus geniculatus</i>	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	1
<i>Molinia caerulea</i>	-	-	-	-	-	5	4	-	-	-	-	-	-	-	-	1
<i>Potentilla erecta</i>	-	-	-	-	-	5	-	3	1	-	1	-	2	4	1	2
<i>Galium saxatile</i>	-	-	-	-	-	3	-	-	-	-	-	-	-	-	-	1
<i>Agrostis canina</i>	-	-	-	-	-	2	2	-	-	-	-	-	-	-	-	1
<i>Hylocomium splendens</i>	-	-	-	-	-	6	-	6	-	6	-	-	5	4	-	2
<i>Salix repens</i>	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	1
<i>Carex echinata</i>	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-	1
<i>Calluna vulgaris</i>	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	1
<i>Achillea ptarmica</i>	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1

Phase 1 Habitat	Marshy Grassland															
Grid Reference	ND 30112 69009	ND 29821 68836	ND 29889 68399	ND 29211 70258	ND 28782 70966	ND 29212 71611	ND 28614 71862	ND 28420 71316	ND 28431 71125	ND 29748 70760	ND 29593 70338	ND 29360 69697	ND 28064 68919	ND 29728 69470	ND 28052 70093	Frequency
Approximate Peat Depth (cm)	45	30	25	200+	30	40	130	50	200+	0	30	80	40	10	120	
Species	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	
<i>Juncus articulatus</i>	-	-	-	-	-	-	-	-	1	2	-	-	-	-	-	1
<i>Dactylus glomeratus</i>	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	1
<i>Senecio jacobaea</i>	-	-	-	-	-	-	-	-	2	4	2	-	-	-	-	1
<i>Rumex conglomeratus</i>	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	1
<i>Cardamine flexuosa</i>	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	1
<i>Galium palustre</i>	-	-	-	-	-	-	-	-	-	-	1	-	3	-	2	1
<i>Poa pratensis</i>	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	1
<i>Carex rostrata</i>	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	1
<i>Sphagnum fallax</i>	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	1
<i>Polytrichum commune</i>	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	1
<i>Carex binervis</i>	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	1
<i>Ranunculus repens</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1

Phase 1 Habitat	Reed Swamp										
Grid Reference	ND 27786 71735		ND 27753 71769		ND 27705 71813		ND 27703 71775		ND 27715 71756		Frequency
Approximate Peat Depth (cm)	130		70		90		45		50		
Species	Q1		Q2		Q3		Q4		Q5		
<i>Phragmites australis</i>	8		8		8		7		5		5
<i>Heracleum sphondylium</i>	4		-		-		-		-		1

Phase 1 Habitat	Reed Swamp					
Grid Reference	ND 27786 71735	ND 27753 71769	ND 27705 71813	ND 27703 71775	ND 27715 71756	Frequency
Approximate Peat Depth (cm)	130	70	90	45	50	
Species	Q1	Q2	Q3	Q4	Q5	
<i>Open water</i>	-	4	-	4	4	3
<i>Filipendula ulmaria</i>	6	-	-	-	1	2
<i>Ranunculus acris</i>	2	-	-	-	-	1
<i>Menyanthes trifoliata</i>	3	3	-	-	-	2
<i>Succisa pratensis</i>	2	2	-	1	2	4
<i>Dactylorhiza purpurella</i>	2	-	-	2	-	2
<i>Carex Nigra</i>	-	5	-	2	3	3
<i>Cirsium palustre</i>	2	3	2	2	2	5
<i>Epilobium palustre</i>	2	3	3	3	3	5
<i>Cardamine pratensis</i>	1	2	3	3	3	5
<i>Molinia caerulea</i>	5	4	4	4	6	5
<i>Equisetum fluviatile</i>	3	1	-	3	3	4
<i>Rorippa nasturtium-acquaticum</i>	-	2	3	3	3	4
<i>Deschampsia cespitosa</i>	4	-	4	-	-	2
<i>Carex panicea</i>	-	3	-	-	1	2
<i>Galium palustre</i>	3	2	1	3	3	5
<i>Angelica sylvestris</i>	-	2	5	4	4	4
<i>Filmy moss sp.</i>	5	4	4	4	4	5
<i>Pleurozium schreberi</i>	8	7	7	8	8	5
<i>Myrica gale</i>	-	-	4	-	-	1
<i>Dryopteris dilatata</i>	-	-	1	4	-	2
<i>Viola palustris</i>	-	-	3	3	3	3
<i>Luzula multiflora</i>	-	-	-	1	-	1

Phase 1 Habitat	Reed Swamp					
Grid Reference	ND 27786 71735	ND 27753 71769	ND 27705 71813	ND 27703 71775	ND 27715 71756	Frequency
Approximate Peat Depth (cm)	130	70	90	45	50	
Species	Q1	Q2	Q3	Q4	Q5	
<i>Potentilla erecta</i>	-	-	-	-	1	1
<i>Hydrocotyle vulgaris</i>	-	-	-	-	1	1
<i>Myosotis scorpioides</i>	-	-	-	-	1	1
<i>Cerastium fontanum</i>	-	-	-	-	3	1
<i>Montia Fontana</i>	-	-	-	-	3	1

Phase 1 Habitat	Sedge Swamp					
Grid Reference	ND 29310 67893	ND 29309 67887	ND 29302 67872	ND 29307 67869	ND 29320 67889	Frequency
Approximate Peat Depth (cm)	80	80	80	55	55	
Species	Q1	Q2	Q3	Q4	Q5	
<i>Potamogeton polygonifolius</i>	3	4	5	7	6	5
<i>Equisetum fluviatile</i>	4	4	4	3	3	5
<i>Carex Nigra</i>	5	4	7	4	5	5
<i>Hylocomium splendens</i>	8	5	-	-	-	2
<i>Aulacomnium palustre</i>	4	4	-	-	-	2
<i>Potentilla palustris</i>	4	4	3	3	3	5
<i>Erica tetralix</i>	3	4	2	-	1	4
<i>Pedicularis palustris</i>	2	1	2	-	1	4
<i>Deschampsia flexuosa</i>	4	1	2	-	-	3
<i>Open water</i>	4	7	6	7	6	5

Phase 1 Habitat	Sedge Swamp					
Grid Reference	ND 29310 67893	ND 29309 67887	ND 29302 67872	ND 29307 67869	ND 29320 67889	Frequency
Approximate Peat Depth (cm)	80	80	80	55	55	
Species	Q1	Q2	Q3	Q4	Q5	
<i>Salix repens</i>	-	-	-	-	3	1
<i>Juncus bulbosus</i>	4	4	3	3	4	5
<i>Menyanthes trifoliata</i>	-	-	-	3	4	2
<i>Sphagnum capillifolium</i>	-	3	-	-	-	1
<i>Sphagnum fallax</i>	-	-	3	4	5	3
<i>Myrica gale</i>	-	-	4	-	-	1
<i>Succisa pratensis</i>	-	-	1	-	-	1
<i>Calluna vulgaris</i>	-	-	2	-	-	1
<i>Eriophorum angustifolium</i>	-	-	1	2	1	3
<i>Pleurozium schreberi</i>	-	-	4	-	-	1
<i>Festuca vivipara</i>	-	-	-	-	3	1
<i>Salix aurita</i>	-	-	-	-	3	1
<i>Anthoxanthum odoratum</i>	-	-	-	-	3	1
<i>Ranunculus flammula</i>	-	-	-	-	1	1
<i>Carex echinata</i>	-	-	-	-	2	1

Phase 1 Habitats	Offsite Area: Modified Blanket Bog and Marshy Grassland																
Grid Reference	ND 30623 69426	ND 30536 69517	ND 30456 69476	ND 30389 69401	ND 30339 69287	ND 29449 68923	ND 29373 69164	ND 29625 69216	ND 29587 69033	ND 29707 68977	ND 29762 69218	ND 29906 69175	ND 29982 69085	ND 29891 69085	ND 29835 69003		
Approximate Peat depth (cm)	200+	200+	200+	200+	200+	200+	200+	200+	200+	200+	200+	200+	200+	200+	200+		
Species																	Frequency
<i>Molinia caerulea</i>	8	4	8	8	8	8	8	8	7	8	8	9	8	8	9		5
<i>Calluna vulgaris</i>	5	5	4	-	-	-	4	3	3	4	4	4	5	3	3		4
<i>Myrica gale</i>	5	4	6	5	5	6	5	4	4	4	5	4	4	4	-		5
<i>Erica tetralix</i>	4	3	4	3	4	-	3	3	-	3	-	3	4	3	3		4
<i>Sphagnum capillifolium</i>	6	7	-	-	4	-	-	-	5	-	5	-	-	3	5		2
<i>Sphagnum papillosum</i>	7	-	-	-	5	-	-	-	-	-	4	-	7	-	4		2
<i>Pleurozium schreberi</i>	5	4	4	5	4	5	6	6	5	4	6	6	4	5	6		5
<i>Narthecium ossifragum</i>	3	3	3	3	1	-	1	-	-	-	-	-	3	-	-		2
<i>Eriophorum angustifolium</i>	3	3	3	3	3	3	3	-	3	4	-	-	3	3	3		4
<i>Schoenus nigricans</i>	-	5	-	-	-	-	-	-	-	-	-	-	-	-	-		1
<i>Menyanthes trifoliata</i>	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-		1
<i>Carex rostrata</i>	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-		1
<i>Pedicularis palustris</i>	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-		1
<i>Succisa pratensis</i>	-	4	-	-	3	-	3	4	-	-	3	-	-	3	-		2
<i>Hypnum jutlandicum</i>	-	4	4	-	-	-	-	-	4	4	-	-	-	-	-		1
<i>Carex nigra</i>	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-		1
<i>Potentilla erecta</i>	-	-	3	1	3	3	2	3	3	3	3	3	3	3	4		4
<i>Sphagnum fallax</i>	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-		1
<i>Hylocomium splendens</i>	-	-	-	-	-	-	5	4	-	5	7	5	-	5	-		2
<i>Carex echinata</i>	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-		1
<i>Eriophorum vaginatum</i>	-	-	-	-	-	-	-	-	5	-	-	-	-	-	-		1

<i>Empetrum nigrum</i>	-	-	-	-	-	-	-	-	-	-	3	4	-	1
<i>Sphagnum palustre</i>	-	-	-	-	-	-	-	-	-	-	-	-	3	1
Phase 1 Habitats	Offsite Area: Modified Bog													
Grid Reference	ND 30757 68945	ND 30695 69195	ND 30948 68617	ND 30850 68511	ND 30411 68609	ND 30459 68460	ND 30603 68374	ND 30352 68097	ND 30284 67960	ND 30406 67844				
Approximate Peat depth (cm)	200+	200+	200+	200+	200+	200+	200+	200+	200+	200+				
Species														Frequency
<i>Calluna vulgaris</i>	6	7	6	7	7	7	7	7	7	6				5
<i>Eriophorum vaginatum</i>	6	4	7	4	6	6	6	7	6	7				5
<i>Sphagnum capillifolium</i>	4	6	-	6	-	5	5	4	6	4				4
<i>Empetrum nigrum</i>	4	-	-	-	4	3	5	4	3	3				4
<i>Erica tetralix</i>	4	3	3	4	3	3	3	3	3	4				5
<i>Narthecium ossifragum</i>	3	3	-	-	-	3	1	-	3	-				3
<i>Cladonia portentosa</i>	5	4	-	4	5	5	-	3	4	3				4
<i>Cladonia abuscura</i>	3	3	-	3	-	-	-	-	3	-				2
<i>Cladonia rangiferina</i>	4	-	-	-	-	-	-	-	-	-				1
<i>Eriophorum angustifolium</i>	3	4	-	4	3	3	3	3	3	3				5
<i>Hypnum jutlandicum</i>	5	4	-	4	5	5	5	-	4	5				4
<i>Pleurozium schreberi</i>	5	4	-	-	-	5	6	6	5	6				4
<i>Racomitrium lanuginosum</i>	-	5	-	-	-	-	-	-	-	-				1
<i>Sphagnum fallax</i>	-	3	-	-	-	-	-	-	-	-				1
<i>Trichophorum germanicum</i>	-	-	5	3	-	-	-	3	4	3				3
<i>Potentilla erecta</i>	-	-	3	-	3	-	3	-	-	-				2
<i>Molinia caerulea</i>	-	-	3	-	3	-	3	-	-	-				2
<i>Hylocomium splendens</i>	-	-	6	-	5	4	5	-	-	-				2
<i>Sphagnum papillosum</i>	-	-	-	-	5	-	-	-	-	-				1
<i>Myrica gale</i>	-	-	-	-	-	-	-	-	-	4				1

Phase 1 Habitats	Offsite Area: Modified Bog					
Grid Reference	ND 28306 68965	ND 28451 68937	ND 28556 68951	ND 28703 69009	ND 28758 69010	
Approximate Peat depth (cm)	200+	200+	200+	200+	200+	
Species						Frequency
<i>Calluna vulgaris</i>	6	6	5	6	6	5
<i>Eriophorum vaginatum</i>	5	6	7	5	6	5
<i>Empetrum nigrum</i>	6	4	3	7	6	4
<i>Cladonia portentosa</i>	4	3	3	3	3	4
<i>Trichophorum germanicum</i>	4	4	3	3	4	5
<i>Erica tetralix</i>	5	4	4	4	5	3
<i>Sphagnum capillifolium</i>	4	6	5	4	5	4
<i>Hypnum jutlandicum</i>	4	4	5	4	4	2
<i>Cladonia abuscurea</i>	3	-	-	4	4	1
<i>Eriophorum angustifolium</i>	3	3	3	3	3	5
<i>Pleurozium schreberi</i>	-	5	5	5	5	4
<i>Narthecium ossifragum</i>	-	-	4	3	3	4

Phase 1 Habitats	Offsite Area: Marshy Grassland / Modified Bog					
Grid Reference	ND 26768 71306	ND 26893 71357	ND 27038 71376	ND 29401 72503	ND 27468 71620	
Approximate Peat depth (cm)	70	60	40	30	50	
Species						Frequency
<i>Juncus effusus</i>	8	8	8	8	8	5
<i>Ranunculus repens</i>	5	5	3	3	3	5
<i>Sphagnum fallax</i>	3	-	-	-	-	1
<i>Rumex acetosa</i>	4	4	5	4	3	5
<i>Holcus lanatus</i>	3	3	4	4	5	5
<i>Agrostis stolonifera</i>	3	4	4	4	4	5
<i>Succisa pratensis</i>	2	-	2	3	3	4
<i>Equisetum palustre</i>	3	3	3	-	-	3
<i>Hylocomium splendens</i>	4	3	4	-	5	4
<i>Pleurozium schreberi</i>	5	3	5	5	4	5
<i>Epilobium palustre</i>	-	3	2	3	-	3
<i>Stellaria graminea</i>	-	3	2	-	-	2
<i>Deschampsia cespitosa</i>	-	-	3	-	3	2
<i>Lathyrus pratensis</i>	-	-	3	3	3	3
<i>Cirsium palustre</i>	-	-	-	4	4	2
<i>Potentilla erecta</i>	-	-	-	-	3	1

Phase 1 Habitats	Offsite Area: Marshy Grassland					
Grid Reference	ND 29851 73064	ND 29876 73021	ND 30022 72898	ND 30022 72898	ND 29980 72697	
Approximate Peat depth (cm)	5	20	15	25	20	
Species	Q1	Q2	Q3	Q4	Q5	Frequency
<i>Deschampsia cespitosa</i>	9	9	9	9	9	5
<i>Cirsium palustre</i>	3	3	-	3	4	4
<i>Holcus lanatus</i>	3	-	3	3	3	4
<i>Rumex acetosa</i>	3	3	3	3	3	5
<i>Pleurozium schreberi</i>	4	4	5	6	4	5
<i>Rhytidiadelphus squarrosus</i>	5	5	3	4	4	5
<i>Potentilla erecta</i>	-	-	4	-	4	2
<i>Juncus effusus</i>	-	-	-	3	3	2
<i>Achillea ptarmica</i>	-	-	-	3	-	1
<i>Polytrichum commune</i>	-	-	-	3	-	1
<i>Plantago lanceolata</i>	-	-	-	-	4	1
<i>Festuca ovina</i>	-	-	-	-	3	1

Phase 1 Habitats	Offsite Area: Blanket Bog					
Grid Reference	ND 29104 72381	ND 29256 72454	ND 27912 71886	ND 28135 71964	ND 28240 72013	
Approximate Peat depth (cm)	100+	100+	100+	100+	100+	
Species	Q1	Q2	Q3	Q4	Q5	Frequency
<i>Calluna vulgaris</i>	5	7	7	8	7	5
<i>Eriophorum vaginatum</i>	6	6	5	5	5	5
<i>Trichophorum germanicum</i>	3	3	3	4	3	5
<i>Erica tetralix</i>	4	4	4	3	4	5
<i>Eriophorum angustifolium</i>	6	3	3	3	4	5
<i>Potentilla erecta</i>	4	3	3	3	-	4
<i>Narthecium ossifragum</i>	3	-	5	-	-	2
<i>Rhytidadelphus triquetrus</i>	3	-	-	4	4	3
<i>Hylocomium splendens</i>	5	6	4	5	4	5
<i>Sphagnum capillifolium</i>	3	-	4	3	-	3
<i>Pleurozium schreberi</i>	5	4	5	5	5	5
<i>Myrica gale</i>	-	5	-	-	-	1
<i>Hypnum jutlandicum</i>	-	5	4	4	5	4

Phase 1 Habitats	Offsite Area: Acid grassland					
Grid Reference	ND 29944 72722	ND 30031 72759	ND 29454 72556	ND 29501 72597	ND 29738 72653	
Approximate Peat depth (cm)	10	20	5	5	10	
Species	Q1	Q2	Q3	Q4	Q5	Frequency
<i>Festuca ovina</i>	5	5	4	5	4	5
<i>Agrostis capillaris</i>	7	6	7	6	6	5
<i>Anthoxanthum odoratum</i>	7	6	5	5	5	5
<i>Holcus lanatus</i>	4	4	4	4	3	5
<i>Rumex acetosa</i>	3	-	-	3	-	2
<i>Galium saxatile</i>	3	3	3	3	3	5
<i>Rhytidadelphus squarrosus</i>	5	6	5	5	5	5
<i>Potentilla erecta</i>	5	5	4	4	4	5
<i>Juncus squarrosus</i>	-	4	3	-	3	3
<i>Pleurozium schreberi</i>	-	4	3	4	5	4
<i>Viola canina</i>	-	-	-	3	3	2
<i>Trifolium repens</i>	-	-	-	3	-	1

Phase 1 Habitats	Offsite Area: Wet Heath					
Grid Reference	ND 29822 72944	ND 29867 72915	ND 27725 71655	ND 27701 71733	ND 27239 71510	
Approximate Peat depth (cm)	10	20	25	30	20	
Species	Q1	Q2	Q3	Q4	Q5	Frequency
<i>Trichophorum germanicum</i>	7	7	7	6	5	5
<i>Erica tetralix</i>	5	3	7	4	5	5
<i>Potentilla erecta</i>	4	4	3	4	4	5
<i>Sphagnum capillifolium</i>	4	-	3	3	4	4
<i>Cladonia portentosa</i>	3	3	-	3	3	4
<i>Calluna vulgaris</i>	5	5	4	7	7	5
<i>Pleurozium schreberi</i>	4	5	4	5	5	5
<i>Molina caerulea</i>	3	3	3	3	3	5
<i>Juncus squarrosus</i>	5	5	3	4	-	4
<i>Narthecium ossifragum</i>	3	3	-	3	3	4
<i>Eriophorum angustifolium</i>	3	3	3	3	3	5
<i>Racomitrium lanuginosum</i>	4	4	-	5	4	4
<i>Hylocomium splendens</i>	-	4	5	5	5	4
<i>Carex panicea</i>	-	-	4	3	-	2
<i>Carex flacca</i>	-	-	4	3	3	3

Phase 1 Habitats	Offsite Area: Modified Blanket Bog					
Grid Reference	ND 28020 71923	ND 28191 71961	ND 28535 72020	ND 28701 72101	ND 28887 72151	
Approximate Peat depth (cm)	100+	100+	100+	100+	100+	
Species	Q1	Q2	Q3	Q4	Q5	Frequency
<i>Molinia caerulea</i>	8	9	10	10	8	5
<i>Myrica gale</i>	5	3	-	-	5	3
<i>Potentilla erecta</i>	3	3	3	3	4	5
<i>Erica tetralix</i>	3	3	-	-	3	3
<i>Calluna vulgaris</i>	4	3	3	3	4	5
<i>Pleurozium schreberi</i>	4	5	4	4	3	5
<i>Hylocomium splendens</i>	3	4	-	5	5	4
<i>Hypnum jutlandicum</i>	-	3	-	-	3	2
<i>Polytrichum commune</i>	-	-	4	5	-	2
<i>Blechnum spicant</i>	-	-	-	2	-	1
<i>Trichophorum germanicum</i>	-	-	-	-	3	1

ANNEX 3: NVC SURVEY TARGET NOTES

Target Notes presented in **Table A3.1** should be read with reference to **Figure 8.3** presented in Volume 3 of the EIA Report and photographic plates presented in **Annex 5**.

Table A3.1: NVC survey target notes.

Target Note	Grid reference	Description and NVC community	Photographic Plate
H1	ND29186 71640	<i>Iris pseudacorus</i> beds in among M23 marshy grassland.	45
H2	ND28978 71643	Small area of bog within forest, suffering from grazing/poaching and from numerous drainage cuts. Calluna and Eriophorum dominated. M19.	46
H3	ND28881 71558	M28 Iris beds in stream with <i>Ranunculus flammula</i> .	47
H4	ND28603 71838	Herb rich neutral flush along wet stream.	48
H5	ND28384 71498	Blanket bog in forest ride, being affected by drainage and cattle grazing.	49
H6	ND29701 70326	Equisetum fluviatile swamp at track side (suggested NVC S10).	50
H7	ND29362 69705	<i>Iris pseudacorus</i> beds along damp water channel.	-
H8	ND29169 69642	<i>Carex rostrata</i> swamp in large ditch in forestry ride with <i>Juncus articulatus</i> (suggested NVC S9).	51
H9	ND30520 67798	Equisetum swamp, also with <i>Menyanthes trifoliata</i> and <i>Potamogeton polygonifolius</i> (suggested NVC S10).	52
H10	ND30254 70181	Mire in forestry ride (suggested NVC M14).	53
H11	ND30123 70197	Soakaway in forestry ride (suggested NVC M29).	54
H12	ND30123 70197	Equisetum swamp adjacent to soakaway (suggested NVC S10 and M29).	55
H13	ND29690 70468	Herb rich neutral flush.	56

ANNEX 4: PHOTOGRAPHIC PLATES

Phase 1 Habitat Types



Plate 1
Blanket Bog - Phillips Main Mire
SSSI



Plate 2
Wet modified bog



Plate 3
Wet modified bog



Plate 4

Dry modified bog



Plate 5

Marshy Grassland

NVC Communities



Plate 6

M18a



Plate 7

M2a



Plate 8

M15d



Plate 9

M19a



Plate 10

M23b



Plate 11

M25a



Plate 12

S4



Plate 13

M3 / S9

Examples of Habitat Disturbance / Modification



Plate 14

Excavator tracks in peat



Plate 15

Former peat cuttings



Plate 16

Peat erosion



Plate 17

Drainage ditch



Plate 18

Heavily disturbed bog, poached and grazed by cattle.

Phase 1 Habitat Survey Target Notes



Plate 19

TN1



Plate 20

TN2



Plate 21

TN3



Plate 22

TN4



Plate 23

TN5



Plate 24

TN6



Plate 25

TN7



Plate 26

TN8



Plate 27

TN9



Plate 28

TN10



Plate 29

TN11



Plate 30

TN12



Plate 31

TN13



Plate 32

TN14



Plate 33

TN15



Plate 34

TN16



Plate 35

TN17



Plate 36

TN18



Plate 37

TN19



Plate 38

TN20



Plate 39

TN21



Plate 40

TN22



Plate 41

TN23



Plate 42

TN25



Plate 43

TN27



Plate 44

TN28

NVC Survey Target Notes



Plate 45

H1



Plate 46

H2



Plate 47

H3



Plate 48

H4



Plate 48

H5



Plate 50

H6



Plate 51

H8



Plate 52

H9



Plate 53

H10



Plate 54

H11



Plate 55

H12



Plate 56

H13



Plate 57

ATN2



Plate 58

ATN7



Plate 59

ATN10