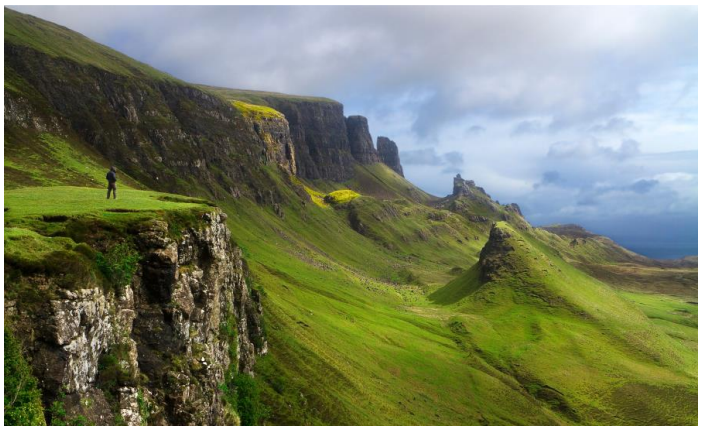
LOCHLUICHART WIND FARM EXTENSION II S37 APPLICATION

ECOLOGICAL IMPACT ASSESSMENT

BLUEBELL WIND FARM LTD



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Executive Summary

Contents	Summary
Site Location	Nevis Environmental Ltd (Nevis) was commissioned by Bluebell Wind Farm Ltd, to carry out ornithological surveys to provide baseline information for an application under Section 37 ('s37') of the Electricity Act (1989) to construct an overhead line (OHL)with two underground sections, between the consented Lochluichart Wind Farm Extension II to the existing Corriemoillie substation. The s37 Application also incorporates sections in the north and south where the cable will be undergrounded (combined total length approx. 1.3km). The OHL route, together with a 100 m wayleave corridor is hereafter referred to as 'the site'. The site is located 4.5 km north-west of Garve, in Rosshire, centred on Ordnance Survey (OS) grid reference (NH 3334 6686).
Proposals	The construction of a new 33 kV single circuit grid connection, approximately 5.82 km in length. The Overhead Line (OHL) will connect Lochluichart Wind Farm Extension II an existing substation in the south (Corriemoillie Substation).
Survey Scope	The objectives of the report are to carry out: • A desk study, to obtain existing information on statutory and non-statutory sites of nature conservation interest and relevant records of protected/notable species within the site and its zone of influence; • An NVC survey of the route and a 100 m corridor to map and record habitat types and dominant vegetation; • An assessment for evidence of protected fauna or habitats capable of supporting such species and invasive non-native species; • An assessment of the depth of peat deposits along the proposed OHL route. • An overall assessment of the potential ecological features present, any constraints they pose to development of the site and any recommendations for avoidance, mitigation, compensation or enhancement measures that are needed (as appropriate).
Results	**Habitats:** The majority of the route corridor (67%) is comprised of M15 wet heath vegetation on both shallow (<0.5m) and deep (>0.5m) peat. Small areas of blanket bog are also present in the central and northern sections of the route corridor. Coniferous, broadleaved and mixed plantation woodland account for around 15% of the route corridor and occur mainly in the south of the site. Two alkaline flushes are present, one in the northern part of the site and one in the south. Small areas of acid grassland, acid flush, bog pool and atypical 'marshy' grassland area also present. Invasive Plant Species: Two invasive plant species; rhododendron and the moss *Campylopus introflexus* were recorded within the site boundary, with rhododendron distribution being limited to the southern section (woodland). **Reptiles:** No reptiles were recorded during the survey . However, the site offers excellent potential habitat for all three species of reptile found within the region; common lizard, slow worm and adder. **Otter:** No signs of otter were recorded during the survey. The watercourses on site connect the site the wider landscape, including a number of large waterbodies, such as Loch Luichart and Loch Glascarnoch. No resting sites were identified within the survey area, so any impact on otters would likely be limited to potential disturbance during the construction works. **Water Vole:** The watercourses on site are suitable for supporting a population of water vole, although no confirmed water vole activity was recorded during the survey. No construction

	works within 30 m of any watercourse is anticiped therefore any local water vole populations are likely to be unaffected by the proposal. **Badger:** No setts were noted within 50 m of the proposed development; however signs of badger activity are present in the southern section of the site. Habitat loss (including felling) will be minimal and therefore any impacts of the development on badger are likely to be restricted to potential disturbance of foraging/commuting behaviour during construction only. **Pine Marten:** No signs of pine marten were recorded. The woodland to the south has suitability to support a population of pine marten, however any impacts from the overhead line will be limited, with minor felling of trees required. **Red Squirrel:** No signs of red squirrel were recorded, however the woodland to the south is known to support a population of red squirrel. Any impacts from the overhead line will be limited, with minor felling of trees required. **Scottish Wildcat:** The site offers suitable habitats which could support wildcat, however no potential den sites were recording within the survey area. The development is not considered likely to negatively impact any populations due to the nature of the development not posing a risk to the behaviour of any local populations. **Mountain Hare:** Mountain hare recorded during surveys and suitable habitat is widespread in the northern part of the site. Due to the small footprint of the proposed development, permanent habitat loss is expected to be minimal. It is considered unlikely that the works will have a negative effect on the local mountain hare population.
Recommendations	**Habitats:** - Construction will be completed under a Construction Environmental Management Plan (CEMP) and supervised by an experienced Environmental/Ecological Clerk of Works (ECoW). - Temporary trackway or similar will be used particularly on the wetter regions of the wet heath/blanket bog vegetation to minimise disturbance. - Excavated materials will be temporarily stored on boards/trackway and will be replaced in the order excavated to prevent changes soil or hydrological conditions. - A 50 m buffer will be demarcated around the potential GWDTE in the northern part of the site. **Invasive Plant Species** - A 7 m buffer will be demarcated around stands of rhododendron, - Good biosecurity measures including cleaning equipment, tools and PPE prior to mobilising and demobilising from site to prevent spread of invasive species. **Reptiles:** If ground clearance works are to take place during the colder months e.g October/November or March, when reptiles may be active but moving slowly, pre-construction checks immediately prior to vegetation clearance or ground-breaking should be undertaken by a suitably qualified ECoW. **Otter:** A pre-works check for otter activity should be undertaken on all watercourses within 200 m of the development at least six weeks prior to works commencing. **Water Vole:** A 30 m buffer should be maintained from all watercourses, where possible. Where this is not possible, a pre-construction check for water vole activity should be undertaken ideally between April to September to ensure water voles are active. **Badger:** A pre-construction check within 30 m of construction should be undertaken at least six weeks prior to construction commencing. **Red Squirrel/ Pine Marten:** At least six weeks prior to felling and/or construction, a pre-construction check of the suitable woodland should be undertaken, including a 50 m buffer

	for red squirrel and 250 m for pine marten. **Wildcat:** A pre-construction check of the woodland and areas of young plantation within 200 m of the proposed OHL route should be undertaken within six weeks of construction. **General Mitigation :** • Prior to any ground clearance or vegetation clearance, a preconstruction check will be conducted by a suitably experienced Ecologist. • Open ended pipes or excavations will be covered or fitted with ramps when unattended to prevent the accidental entrapment on any animals on site. Ramps can be made using wooden boards that is no less than 0.5m wide and positioned at an angle of no more than 45°. Each open trench/excavation should be checked daily. • Any temporary lighting used during the construction phase should be directional and focus on the working area. Unintentional light spill should be minimised to prevent disturbance to any crepuscular species using the site. • No construction activities should take place on should during the two hours before dawn and works should aim to finish at least one hour before dusk.

1 Introduction

1.1 Introduction

Nevis Environmental Ltd (Nevis) was commissioned by Bluebell Wind Farm Ltd (the Applicant), to carry out ornithological surveys to provide baseline information for an application under Section 37 ('s37') of the Electricity Act (1989) to install an overhead line (OHL), which also incorporates 'associated works' sections in the north and south where the cable is undergrounded, between the consented Lochluichart Wind Farm Extension II (the 'Consented Development') and the existing Corriemoillie substation. The s37 OHL route, together with a 50 m wayleave corridor, is hereafter referred to as 'the site'.

This report has been prepared by Nevis Senior Ecologist, Karen Aldridge MCIEEM.

1.2 Site Location

The site is located to the north west of Garve, Highland and is centred on Ordnance Survey (OS) grid reference (NH3334 6686). The site is shown on **Figure 1** and is contained primarily within the footprint of the Consented Development, terminating at the existing Corriemoillie Substation, to the south of the wind farm.

The site is comprised of primarily open moorland located on the boundary between Loch Luichart Estate and Corriemoillie Estate, between the operational Lochluichart Wind Farm (the 'Operational Scheme') and Corriemoillie Wind Farm. The two estates are separated by two deer fences, with the proposed route running in between these for much of its length. To the south, the route runs within an existing ride between two blocks of coniferous plantation, before terminating at Corriemoillie substation.

1.3 Development Proposals

The proposal is the construction of a new 33 kV single circuit grid connection supported on "H" wood poles to connect the consented the Consented Development to the existing electricity substation at Corriemoillie.

The overhead line would have a length of approximately 5.82 km with the approximate grid references being the start point at the Consented Development in the north (NH 33237 N68922), and the end point in the south at Corriemoillie substation (NH 34441 863890). It is anticipated that the wooden poles will be approximately 12 m-16 m in height with the average span between them approximately 90 m -110 m.

Access for construction is anticipated to utilise the existing access track for the Operational Scheme to the north, with a construction compound sited at an appropriate location as part of the final design process. Construction best practice would be adopted on site during construction, subject to consultation and agreement with statutory consultees, and would include adherence to an agreed Construction and Decommissioning Environmental Management Plan, anticipated to incorporate a Pollution Prevention Plan, Drainage Management Plan, Habitat Management Plan, Access Management Plan and Construction Site License (under Controlled Activities Regulations) as necessary. Some limited tree felling may also be required in the southern part of the route within the area of coniferous plantation.

1.4 Purpose of the Report

The objectives of the report are to carry out:

- A desk study, to obtain existing information on statutory and non-statutory sites of nature conservation interest and relevant records of protected/notable species within the site and its zone of influence;
- An NVC survey of the route and a 100 m corridor to map and record habitat types and dominant vegetation;
- An assessment for evidence of protected fauna or habitats capable of supporting such species and invasive non-native species;
- An assessment of the depth of peat deposits along the proposed OHL route.
- An overall assessment of the potential ecological features present, any constraints they pose to development of the site and any recommendations for avoidance, mitigation, compensation or enhancement measures that are needed (as appropriate).

2 Methods

2.1 Desk Study

2.1.1 Online Resources

Commercially available ecological records within a 2km buffer of the site were collected on the following;

- Non-statutory nature conservation sites i.e. Local Wildlife Sites (LWS);
- Legally protected plant and animal species;
- Notable species e.g. Species of Principal Importance (SPI); and
- Priority habitats and species as listed within the Highland Biodiversity Action Plan (BAP).

The information was collected from online sources;

- NatureScot SiteLink (2021) for information on statutory designated sites.
- NBN Atlas (2017) for commercially available records on protected or notable species within 2 km of the site boundary.
- Scottish Biodiversity List (SBL) (2020) for details of species and habitats considered to be of principal importance for biodiversity conservation.

2.2 Field Survey

The Extended Phase 1 Habitat Survey was undertaken on the site on 20th and 21st of July 2021 by Nevis Senior Ecologist, Karen Aldridge, MCIEEM. The weather conditions during both survey days, were bright and dry with temperatures in excess of 20°C, with a light wind.

The National Vegetation Classification Survey (NVC) was undertaken on 3rd August by Nevis Associate, Alistair Blackshaw, MCIEEM and Nevis Senior Ecologist, Karen Aldridge, MCIEEM. The weather was bright and dry with a temperature of around 19°C and a gentle breeze.

The following methodologies were used to inform the assessment of habitat types and protected and notable species during the Extended Phase 1 Habitat Survey and NVC Survey.

2.2.1 Habitats and Flora

The broad habitat types within the site were mapped in accordance with the categories specified in the Handbook for Phase 1 Habitat Survey (Joint Nature Conservancy Committee, 2016). Dominant plant species were recorded for each habitat present using nomenclature according to the 4th edition of New Flora of the British Isles (Stace , 2019). The site was also appraised for its potential to support notable flora.

The NVC survey area extended over the entire site boundary, which comprised the route of the proposed OHL and an approximately 100 m wide corridor to either side, and involved the classification of homogeneous stands of vegetation according to the NVC as described in the relevant volumes of British Plant Communities [BPC] (Rodwell, 1991), (Rodwell, 1991) and (Rodwell, 1992). Additional guidance was also used including the Review of coverage of the National Vegetation Classification (Rodwell, et al., 2000) and British Upland Vegetation (Averis, et al., 2004),

which provide further interpretation of the classification and describe some additional vegetation types not covered in BPC.

All vegetation was assigned to sub-community level, except where of low ecological value (e.g. U20 bracken stands) or where it did not accord with published descriptions. The spatial distribution of the vegetation sub-communities was mapped on to printed aerial imagery at 1:8,500 scale. An Apple iPad running GISpro and displaying the same aerial imagery was used to aid in positioning and to collect geo-referenced locations of sample vegetation quadrats and target notes (see **Appendix 1**). Photographs were also taken to illustrate the main vegetation types and relevant target notes.

NVC polygons were generally defined as mosaics following the guidance set out in Rodwell *et al* (2000) with the estimated proportions of the mosaic components also recorded (see **Figure 2**). This approach is taken as the vegetation usually occurs in complexes whose individual component parts would be too time consuming to map separately. The field mapping was digitised in QGIS and presented using the standard JNCC Phase 1 mapping scheme, with additional polygon labels to denote the NVC communities and their estimated proportions within each polygon.

2.2.2 Invasive Plant Species

The site was searched for invasive plant species, primarily those included on Schedule 9 Wildlife and Countryside Act 1981 (as amended) (W&CA), such as Japanese knotweed *Reynoutria japonica*, Himalayan balsam *Impatiens glandulifera*, giant hogweed *Heracleum mantegazzianum*, wall cotoneaster *Cotoneaster horizontalis* and rhododendron *Rhodendron ponticum*.

2.2.3 Protected and Notable Species

Guided by the results from the desk study and previous knowledge of the habitats on site, the following relevant species groups were focused upon:

- Reptiles;
- Otter *Lutra lutra;*
- Water vole *Arvicola amphibius;*
- Badger *Meles meles;*
- Pine marten *Martes martes;*
- Red Squirrel *Sciurus vulgaris*;
- Scottish wildcat *Felis silvestris*; and
- Mountain hare *Lepus timidus*.

The survey boundaries for each of the species described below are shown in **Figure 3**.

Reptiles

The site was appraised for its suitability to support reptiles, including common lizard *Zootoca vivipara*, slow worm *Anguis fragilis* and adder *Viper berus*. The assessment was based on Guidance outlined in the Herpetofauna Workers' Manual (Gent & Gibson, 2003).

Otter

The otter survey was undertaken in broad accordance with the approach detailed by NatureScot Species Planning Advice – Otter (2020) and Chanin (2003). The survey concentrated on watercourses and any suitable terrestrial habitat within 200 m of the proposed route of the OHL. The survey looked for any evidence of otter within the survey area including:

- spraints;
- footprints;
- couches/lay-ups;
- paths/slides;
- feeding remains; or
- holts.

Water Vole

A water vole survey was undertaken in broad accordance with The Water Vole Mitigation Handbook guidance (2016) and involved a search of watercourses within 50 m of the proposed development. The survey looked for any evidence of water vole within the survey area such as:

- Burrows
- Latrines; or
- Feeding signs

Badgers

A badger survey was undertaken in suitable and accessible habitat, within 50 m of the proposed development, with reference to the methodology described by Scottish Badgers (2018) and NatureScot (2003), which aimed to identify the following evidence;

- Setts
- Day beds;
- Dung pits (single faeces deposited in a small excavation)
- Latrines (collection of faecal deposits, used to mark boundaries)
- Foraging signs such as digging or snuffle holes
- Paths
- Breach points in fences
- Guard hairs; and
- Footprints.

Pine Marten

A search of woodland habitat was undertaken in accordance with NatureScot Species Planning Advice Pine Martens (2020) and The Mammal Society guidance (2012). Woodland within 250 m of proposed route was searched, along informal transects, looking for signs of pine marten, which included:

- Scats;

- Footprints; and
- Potential den sites (e.g. elevated tree cavities and between rocks).

Red Squirrel

A search of woodland habitat within 50 m of the proposed route was undertaken in accordance with The Mammal Society guidance (2012). The search included walking along informal transects within the woodland habitat looking for signs of red squirrels such as dreys or feeding signs.

Scottish Wildcat

An assessment of the site's suitability to support wildcat and a search for signs of wildcat was undertaken following The Mammal Society guidance (2012). The assessment and search focused on;

- Potential den sites – such as hollow trees, peat haggs, rock crevices, rabbit burrows or disused badger setts;
- Suitable habitat focusing on the marginal habitats between the open moorland and woodland edges; and
- Signs such as scats, scratch marks and urine sprays.

Mountain Hare

A search of the site was conducted for direct evidence of mountain hare, such as sightings, and the suitability of the habitat was assessed following The Mammal Society guidance (2012) e.g. a mix of young nutritious heather and older heather offering suitable cover.

Other Species

The site was also appraised for its suitability to support other protected or notable fauna including mammals, amphibians, and invertebrates with regard to CIEEM's Guidelines for Preliminary Ecological Appraisal (Chartered Institute for Ecology and Environmental Management, 2017) and BS42020:2013 Biodiversity – Code of Practice for Planning and Development. Evidence of any current or historical presence of such species was recorded.

2.3 Limitations

The optimal period to undertake an Extended Phase 1 Habitat Survey is April-September. The survey was completed in July which is inside the optimal survey window. The optimal time to undertake an NVC survey of upland habitats is June to September; the survey was undertaken in August which is inside the optimal survey window. It is therefore considered that there were no seasonal constraints to either the Extended Phase 1 Habitat Survey or the NVC survey.

The coniferous plantation around the southern section of the proposed OHL is fairly dense in places. Transects were walked through the woodland in accessible places and searched for signs of badger, pine marten and wildcat, however there is the possibility field signs were missed in thicker areas. However, as a large proportion of the habitat was surveyed without any signs of these species being encountered, the lack of access to some areas was not considered a significant limitation.

The details of this report are considered to valid for a period of **two years** from the date of the survey. After two years, the assessment should be reviewed to determine whether any further updates are necessary. The recommendations within this report should also be reviewed (and reassessed if necessary) should there be any changes to the development proposals available at the time of writing.

3 Baseline Conditions

All relevant ecological data provided by the consultees was reviewed and the results from these investigations are summarised below. The original desk study data is available upon request. A summary of planning policy and legislation relating to the species highlighted by the desk study and field survey is presented in **Appendix 2**.

3.1 Desk Study

3.1.1 Online Resources

Designated Sites

Glen Affric to Strathconon Special Protection Area (SPA), located 2 km to the south, is the only designated site within 5 km of the proposed route and is discussed further in ENVr1255 Breeding Bird Survey Report.

NBN Atlas Records

Commercially available records of notable species, recorded within 2 km of the proposed site within the last 10 years are presented in Table 1.

Table 1 NBN Atlas Records within 2km of Proposed Development[1]

Species	No. of Records	Proximity of Nearest Record	SBL Species	BAP Species	Legal/Conservation Status
Reptiles					
Common Lizard	3	Approx. 2 km west	✓		WACA-Sch5[2]
Slow worm	1	Approx. 1.8 km south west			WACA-Sch5
Mammals					
Red Squirrel	9	Approx. 0.3 km SW	✓	✓	WACA-Shc5 & WACA Sch6[3]
Badger	1	Approx. 1.8 km.			Protection of Badgers Act, 1992

[1] NBN Atlas occurrence download at https://nbnatlas.org accessed on Thu Sep 02 15:51:43 UTC 2021.
[2] WACASch5: Schedule 5 of Wildlife and Countryside Act 1981 (as amended). Protected animals (other than birds).
[3] WACASch6:Schedule 6 of Wildlife and Countryside Act 1981 (as amended). Animals which may not be killed or taken by certain methods.

3.2 Field Survey

3.2.1 Habitats

Table 2 provides a breakdown of the areas occupied by the different NVC sub-communities and their cover as a proportion of the survey area. Further description of these vegetation types is provided under the headings below and the distribution of the sub-communities within the site is shown in **Figure 2**.

Table 2 Cover of NVC communities within the survey area

Type	NVC sub-community	Area (ha)	% of site	Description
Mire	M1	0.29	0.20%	Bog pool with *Sphagnum denticulatum.*
	M2	0.31	0.22%	Bog pool with *Sphagnum cuspidatum/Sphagnum fallax.*
	M6b	0.20	0.14%	Acid flush with common sedge *Carex nigra,* mat grass *Nardus stricta* and *Sphagnum* spp.
	M10a	0.01	0.00%	Alkaline flush with dioecious sedge *Carex dioica*, tawny sedge *Carex hostiana*, butterwort *Pinguicula vulgaris, Campylium stellatum and Palustriella commutata*.
	M15a	4.06	2.82%	Wet heath subject to weak flushing from mineral substrate, with abundant round-leaved sundew *Drosera rotundifolia* and carnation sedge *Carex panicea*.
	M15b	21.90	15.22%	Typical wet heath with deer sedge *Trichophorum germanicum*, cross-leaved heath *Erica tetralix* and heather *Calluna vulgaris*.
	M15c	74.36	51.68%	Wet heath on dry peat with an abundance of the moss *Raccomitrium lanuginosum* and *Cladonia* lichens.
	M17a	0.45	0.31%	Wet oceanic bog dominated by hare's-tail cottongrass *Eriophorum vaginatum*, deergrass and *Sphagnum capillifolium* and *Sphagnum papillosum* with frequent round-leaved sundew.
	M17b	8.85	6.15%	Slightly drier oceanic bog somewhat mirroring M15c in having abundant *Raccomitrium lanuginosum* but with abundant hare's-tail cottongrass.
	M19a	0.76	0.53%	Typical upland blanket bog with hare's-tail cottongrass, heather, *Sphagnum capillifolium* and pleurocarpous mosses.
	M20	0.62	0.43%	Bog vegetation dominated by hare's-tail cottongrass with *Sphagnum fallax*.
	M25a	2.72	1.89%	Purple moor-grass *Molinia caerulea* dominated grasslands with sparse dwarf shrub cover and a limited range of associates.
Acid Grassland	U4a	0.28	0.19%	Unimproved acid grassland dominated by mixtures of sheep's fescue, sweet vernal-grass *Anthoxanthum odoratum* and common bent *Agrostis capillaris.*

Type	NVC sub-community	Area (ha)	% of site	Description
	U5b	1.33	0.93%	Damper acid grassland than U5a with frequent heath rush *Juncus squarrosus* and *Polytrichum commune.*
Woodland	Coniferous plantation	18.43	12.81%	Plantation with lodgepole pine *Pinus contorta,* Scots pine *Pinus sylvestris* and Sitka spruce *Picea sitchensis.*
	Mixed plantation	1.83	1.27%	Plantation with Scots pine *Pinus sylvestris,* lodgepole pine *Pinus contorta* and downy birch *Betula pubescens.*
	Felled plantation	1.09	0.76%	Felled Sitka spruce plantation.
Other habitats	Marshy grassland	4.26	2.96%	Grassland with purple moor-grass and soft rush *Juncus effusus* invasion.
	Standing water	0.19	0.13%	Western edge of Lochan Dubh Beag.
	Existing infrastructure	1.93	1.34%	Tracks associated with Lochluichart Wind Farm to north and Corriemoillie sub-station to south.

Wet heath, bogs, bog pool and flush

The majority of the survey area comprises mire vegetation as a result of the underlying peat deposits. These are extensive across the site and are generally 0.5 – 2.5 m deep (Full peat depth results shown in **Appendix 3**). The site lies at the southern margin of a larger area of blanket bog and wet heath and this latter habitat dominates over the majority of the unforested area of the site. The wet heath vegetation is generally very uniform across the site; M15c is the dominant habitat and M15b occurs on shallower peat and steeper slopes, for example on the south side of Beinn a' Bhric.

Occasional depressions or larger pockets of deep peat support M17 blanket bog with a scattering of M1 and M2 bog pools however large continuous areas of bog are uncommon within the site. A significant amount of the wet heath vegetation, especially that on peat exceeding 0.5 m depth, has likely been derived from blanket bog through grazing and burning.

Although much of the site lies between two deer fences, vegetation within the enclosed area is in the same condition as on the unenclosed side. This suggests that its enclosure within the outer fence (on the Loch Luichart Estate side) has been relatively recent or that one or both fences are permeable to deer.

Depressions and runnels between wet heath and bog vegetation in the north of the site are subject to some flushing, either from the slopes above or because the peat is shallow, resulting in small runnels containing M15a wet heath. Two on the Corriemoillie Estate side of the deer fence, acidic M6 mire is common in runnels and old drainage channels within the recently felled and replanted coniferous woodland. Two M10 alkaline flushes were recorded, one in the north and one in the southern part of the site, created by flushing within small and defined areas within wet heath vegetation.

Further description of the mire communities recorded within the site is provided below.

M1 *Sphagnum denticulatum* bog pool community

This type of vegetation forms in bog pools within level areas of blanket bog, comprising M17 and M15 on deep peat. The pools support a limited number of species typical of very wet conditions including *Sphagnum denticulatum* and other sphagna such as *Sphagnum cuspidatum*, *Sphagnum* papillosum and *Sphagnum* fallax. Common cottongrass is also usually present. These pools were infrequent within the survey area, due to it not having much blanket bog and were restricted to the central section of the OHL route, adjacent to Corriemoillie Wind Farm.

M2 *Sphagnum cuspidatum/fallax* bog pool community

Similarly to the M1 bog pool community, this type of vegetation forms in bog pools within level areas of blanket bog, comprising M17 and M15 on deep peat. Here, the sphagna are represented mainly by *Sphagnum cuspidatum* and *Sphagnum fallax,* usually with some common cottongrass present. Like M1, this community is restricted to the lower lying areas in the central section of the OHL route and covers a relatively small proportion of the survey area.

M6b Carex echinata-Sphagnum fallax / denticulatum mire, *Carex nigra-Nardus stricta* sub-community

This type of soligenous mire occurs sporadically in the eastern part of the site where is associated with flushes through wet heath vegetation and recently felled and replanted coniferous woodland. This habitat is typified by carpets of *Sphagnum fallax* and *S.palustre* with common sedge and a grass component including purple moor-grass, mat grass and wavy hair-grass.

M10a *Carex dioica-Pinguicula vulgaris mire*, *Carex demissa-Juncus bulbosus* sub-community

Two areas of M10 vegetation are present within the survey area; one in the north and one in the south (**Figure 2**, Target notes 2 and 10). The northern flush is located to the south-east of the Operational Scheme access track and occurs along a line of exposed mineral ground between the two deer fences. Vegetation comprises scattered sedges, including dioecious sedge *Carex dioica*, tawny sedge *Carex hostiana*, carnation sedge *Carex panicea* and common yellow-sedge *Carex viridula ssp oedocarpa* over a sparse carpet of bryophytes including *Campylium stellatum* and *Palustriella commutata*. The vegetation is dotted with occasional rosettes of common butterwort *Pinguicula vulgaris* and great sundew *Drosera anglica*.

Photograph 1 M10a flush in northern part of survey area

The southern flush comprises a very stony and sparsely vegetated scar in a small slope on the northern edge of the coniferous plantation. The sedge flora is similar to that present in the northern flush with the addition of flea sedge *Carex pulicaris*, star sedge *Carex echinata* and few-flowered spike-rush *Eleocharis quinqueflora*. Characteristic mosses of alkaline flushes include *Scorpidium scorpiodies* in addition to *Campylium stellatum* and *Palustriella commutata*. As in the northern flush, the vegetation is dotted with the rosettes of other vascular species including devli's-bit scabious *Succissa pratensis*, butterwort, great sundew and round-leaved sundew *Drosera rotundifolia.*

Photograph 2 Stony M10 flush in the southern part of the survey area

M15a *Trichophorum germanicum-Erica tetralix* wet heath, *Carex panicea* sub-community

M15a wet heath occurs sporadically in the northern part of the survey area along runnels in the peat that are subject to some degree of flushing. The typical species of M15, purple moor-grass, heather, cross-leaved heath, tormentil *Potentilla erecta* and deer sedge are joined by species of very wet or flushed conditions. These associates include bog asphodel, carnation sedge, round-leaved sundew and butterwort which indicate relatively weak nutrient enrichment. In most cases it is considered that this is the influence of the mineral substrate close to the bottom of runnels within shallow peat, rather than flushing with alkaline groundwater issuing from a specific source.

M15b *Trichophorum germanicum-Erica tetralix* wet heath, Typical sub-community

This is typical wet heath vegetation represented by mixtures of purple moor-grass, heather, cross-leaved heath, tormentil and deer sedge together with some wavy hair grass, *Sphagnum capillifoium* and bulky mosses such as *Polytrichum commune* and *Pleurozium schreberi* but little *Raccomitrium lanuginosum* or *Cladonia* lichen. This type of vegetation occurs on sloping ground in the western part of the survey area around the Operational Scheme and also occurs on Beinn a' Bhric and within the plantation in the southern part of the survey area, where purple moor-grass is dominant in some places.

Photograph 3 M15b vegetation at the western edge of the northern part of the survey area

M15c *Trichophorum germanicum-Erica tetralix* wet heath, *Cladonia* sub-community

This wet heath vegetation has abundant heather, deergrass and cross-leaved heath and occasional purple moor-grass, but differs from M15a and M15b through the abundance of the moss *Racomitrium lanuginosum* and/or Cladonia lichens (*Cladonia portentosa* and *Cladonia uncialis* being the most frequent here), suggesting the peat is drier. Other species include bog asphodel, tormentil, common cottongrass, *Sphagnum capillifolium* and *Sphagnum tenellum*. Chickweed wintergreen *Lysimachia europaea* is occasional in this vegetation in the northern part of the survey area and dwarf birch *Betula nana* is occasional to locally abundant throughout. Where the sub-community occurs on deeper peat, it is likely to have previously been M17 blanket bog which has been modified by grazing, burning and possibly some drainage, although there is little evidence of moor grips within the survey area. This community is widespread and is the most abundant vegetation type across the survey area, accounting for over 50% of all vegetation recorded.

Photograph 4 M15c vegetation on hagged peat in the northern part of the survey area

Photograph 5 M15c/M17b mosaic in the south central part of the survey area

M17a *Trichophorum germanicum – Eriophorum vaginatum* blanket mire *Drosera rotundifolia* sub-community

In relation to other forms of M17 blanket bog, this vegetation usually occurs in the most consistently wet conditions. It consists of a mixture of hare's-tail cottongrass with common cottongrass, heather, cross-leaved heath, deergrass and abundant round-leaved sundew with sheets of *Sphagnum capillifolium* and *Sphagnum papillosum*. M17 vegetation occurs occasionally on wet peat in the northern part of the survey area.

M17b *Trichophorum germanicum – Eriophorum vaginatum* blanket mire *Cladonia* sub-community

This is a slightly drier form of oceanic bog vegetation than M17a. It consists of a similar mix of dominant species including hare's-tail cottongrass, common cottongrass, bog asphodel, heather, cross-leaved heath and deergrass but with less cover of *Sphagnum papillosum* but still high cover of *Sphagnum capillifolium* and greater cover of the moss *Raccomitrium lanuginosum* and also *Cladonia portentosa*. M17b vegetation is locally frequent on relatively wet and deep peat in the central part of the survey area.

Photograph 6 M17b Bog vegetation in the central part of the survey area

M19a *Calluna vulgaris-Eriophorum vaginatum* blanket mire, *Erica tetralix* sub-community

M19 blanket mire is typical of areas with harsh winters and a relatively large annual temperature range. It is the typical blanket mire vegetation of higher altitudes across much of the Scottish Highlands and Southern Uplands. Here it occurs in one location on the edge of plantation woodland in the southern part of the survey area. Hare's-tail cottongrass, common cottongrass, heather and Sphagnum *capillifolium* more or less constant throughout and hypnaceous mosses including *Pleurozium schreberi*, *Hypnum jutlandicum* and, to a lesser extent *Rhytidiadelphus loreus*, are also conspicuous.

Photograph 7 M19a blanket bog on the northern edge of the coniferous plantation

M20 *Eriophoroum vagintum blanket and raised mire. Calluna vulgaris-Cladonia* sub-community

A small area of this vegetation occurs in combination with U5 *Nardus stricta – Galium saxatile* grassland in a wet field to the south-west of Beinn a' Bhric. The vegetation is dominated by hare's-tail cottongrass with abundant *Sphagnum fallax* and the moss *Polytrichum commune*, as in M6 *Carex echinata – Sphagnum* mire, and therefore does not conform well to either of the sub-communities recognised in (Rodwell, 1991) but similar vegetation is noted by (Averis, et al., 2004).

M25a *Molinia caerulea-Potentilla erecta* mire, *Erica tetralix* sub-community

This type of mire consists mainly of purple moor-grass, which grows in dense tussocks with few associated species. It generally has some scattered species of wet heath, e.g. deer sedge, cross-leaved heath and tormentil, and is likely derived from either this vegetation or blanket bog. M25a is scarce within the northern part of the site and is generally restricted to small patches in association with wet heath or blanket mire.

Photograph 8 M25a vegetation in the central part of the survey area

Grassland

Grasslands are of scattered occurrence, with the majority of the site being comprised of wet heath vegetation or plantation woodland. Grassland within the site is mainly indicative of acid soils and is dominated by species such as sheep's fescue and mat grass.

U4a *Festuca ovina-Agrostis capillaris-Galium saxatile* grassland, Typical sub-community

This type of grassland comprises mixtures of sheep's fescue, common bent and sweet vernal-grass together with a range of associates including mat grass, wavy hair-grass *Deschampsia flexuosa*, Yorkshire fog, green-ribbed sedge *Carex binnervis*, heath bedstraw and tormentil. It is typical of relatively freely draining acidic soils and occurs in one location in the northern part of the site.

U5b *Nardus stricta – Galium saxatile* grassland, *Agrostis canina-Polytrichum commune* sub-community

This vegetation type is similar to U5a in that it is dominated by mat grass, sheep's fescue, common bent and wavy hair-grass but with a reduced bilberry and an increase in the frequency of heath rush *Juncus squarrosus* and *Polytrichum commune*, which are reflective of moister soil conditions than found in U5a grasslands. This vegetation type is found in combination with M20 blanket bog in the southern part of the site, with some invasion by soft rush in places.

Marshy Grassland

Marshy grassland comprising, abundant purple moor grass together with the moss *Polytrichum commune*, dry acid grassland species, such as mat grass and sheep's fescue and soft rush invasion occurs along the edges of the plantation woodland and around the existing Corriemoillie sub-station. This grassland is indicative of recolonised disturbed areas on acidic soils which are unmanaged and do not conform well to the NVC.

Photograph 9 Typical vegetation along the main ride within the coniferous plantation

Woodland

Planted broadleaved woodland dominated by downy birch and planted coniferous plantation dominated by lodgepole pine, Scots pine and Sitka spruce.

Photograph 10 Small broad-leaved plantation on the southern edge of Beinn a' Bhric

Other Habitats

Standing Water

The survey area takes in the western edge of Lochan Dubh Beag, which supports no significant aquatic vegetation.

Existing Infrastructure

Tracks associated with the Operational Scheme are present in the northern part of the survey area. Corriemoillie sub-station is present in the southern part of the survey area.

3.2.2 Invasive Plant Species

Two invasive plant species were recorded on site. Rhododendron is noted within the woodland to the south of the site, with several scattered bushes recorded within the woodland clearings, although likely outwith the footprint of construction. The moss *Campylopus introflexus*, which is ubiquitous on the edges of peat hags in the uplands, was also recorded in the area of the site that crosses open moorland.

3.2.3 Protected and Notable Species

The results of the protected species survey are shown in **Figure 3**.

Reptiles

Four records of reptiles were returned by the desk study. The majority of the site offers suitable habitat for reptiles, with open moorland habitat, with varying vegetation lengths and bare areas suitable for basking reptiles. No reptiles were recorded during the survey, however the survey was undertaken during very hot weather, so sightings of any reptiles on site were likely limited by this.

Otter

No records of otter were returned during the desk study and no evidence of otter was recorded within the survey area. The majority of the watercourses on site offer potential for supporting an otter population. Although the watercourses within the survey area, are likely support limited fish populations, other prey species such as amphibians are likely present. Suitable holt habitat was limited within the survey area, with a lack of underground holes, rock piles, tree roots. However, the riparian habitats offered the opportunity for opportunistic resting of otter.

Water Vole

No signs of water vole were recorded within the survey area. Each of the watercourses recorded within the survey area were classified in terms of habitat suitability, with suitable habitat comprising the typical habitat features that water vole prefer i.e. slow-flowing deep water, easily penetrable banks, which are not too steep, and riparian vegetation providing cover and food. Sub-optimal habitat included slightly steeper banks or shallower watercourses connected to suitable habitat either downstream or upstream that had potential to support water vole. Unsuitable habitat included watercourses which had flat banks, which would easily flood or rocky substrate which would be difficult for water vole to create burrows within. The water vole habitat suitability results are shown in **Figure 3**.

Badger

The desk study returned one record of badger within a 2 km radius of the proposed route. No setts were recorded within 50 m of the proposed line, with a single dung pit being recorded approximately 40 m from the survey area. Two mammal paths were noted within the deer fence surrounding the plantation in the south, close to the existing substation, although no badger hairs were noted within the push throughs, they were of a size that would allow badger passage. The woodland habitats to the south of the site offer excellent sett building habitat and primary foraging habitats for badgers.

Pine Marten

No records of pine marten were recorded within 2 km of the proposed route and no signs of pine marten were recorded during the survey. The woodland habitat in the south of the site is considered suitable to support a population of pine marten, with a mix of ages of trees, including some veteran trees with features such as holes and disused nests which could be used as shelter.

Red Squirrel

Nine records of red squirrel were returned by the desk study, with the nearest being noted within 300 m of the proposed connection to the substation. No signs of red squirrel were recorded within 50 m of the proposed

development. The majority of the trees within 50 m of the proposed line, are not of a size that would support a squirrel drey. Deeper into the woodland blocks, taller mature trees are present, including a mix of deciduous and coniferous trees which are likely to support a population of red squirrels.

Scottish Wildcat

No records of wildcat were returned with the desk study, although the site is approximately 3.5 km from a wildcat priority area. No signs of wildcat were recorded, with limited suitable den sites recorded within the woodland and marginal areas, however the site and adjoining area provides suitable habitat to support the typical prey species of wildcat, with rabbit *Oryctolagus cuniculus* signs noted within the southern woodland areas.

Mountain Hare

No records for mountain hare were returned during the desk study, however mountain hare were observed on a number occasion during the field survey visits, in the northern and central parts of the site around Lochuichart Wind Farm.

3.3 Importance of Ecological Features

In accordance with the CIEEM Guidelines (2017) and based on the above baseline information, each ecological feature recorded within the study area is considered to have the following importance (Table 3)

Table 3 Importance of Ecological Features

Feature	Importance	Rationale
M10 flush,	County	Upland flushes, fens and swamps a priority habitat on Scottish Biodiversity List. M10 of restricted distribution, due to association with alkaline springs/seepages.
Open water	County	Oligotrophic and Dystrophic Lakes a priority habitat on Scottish Biodiversity List. Dystrophic lakes and ponds an EU Annex 1 habitat although typical vegetation not supported here.
M6 flush and M15 wet heath.	Local	M15 wet heath an Annex I habitat but ubiquitous within uplands. Upland flushes, fens and swamps a priority habitat on Scottish Biodiversity List.
M17 Blanket Bog	Local	Priority habitat on Scottish Biodiversity. List. Also, an EU Annex I priority habitat but only small proportion area is present within the site.
Other habitats	Site Value	Small areas of acid grassland and rush mixtures are considered to be of low conservation significance and are not regarded as 'important' features for the purposes of the assessment.
Reptiles	Local Value	The site and the surrounding wider landscape offer suitability to support reptiles, including adder. All reptiles listed on SBL but populations that could be affected by proposals are likely to be small.
Otter	Local Value	Otter listed on SBL and fully protected under the Habitats Regulations. Site only likely to form a small part of any otter territory.
Water vole	Site Value	Water vole listed on SBL and protected under W&CA but relatively widespread locally and occur within adjacent Corriemoillie Wind Farm. No evidence of water vole on the site but occasional use of watercourses on site can't be ruled out.

Feature	Importance	Rationale
Badger	Site Value	Badger are protected under Protection of Badgers Act, but a common and relatively widespread species. No setts were noted within 50 m of the proposed development; however site may be used by foraging badger.
Pine Marten	Local Value (if present)	Pine marten listed on SBL and protected by W&CA. No signs of pine marten recorded. The woodland to the south has suitability to support a small population of pine marten.
Red Squirrel	Local Value	Red squirrel listed on SBL and protected by W&CA. No signs of red squirrel were recorded, however the woodland to the south is known to support a population of red squirrel so occasional use of woodland within the site can't be ruled out.
Wildcat	National Value (if present)	Wildcat listed on SBL and fully protected under habitats regulations. No signs of wildcat within site and no potential den sites within 200 m but occasional use of the site for foraging can't be completely ruled out.
Mountain Hare	Local Value	Mountain hare listed on SBL and given partial protection under W&CA. Small population within the northern part of the OHL route and not likely to be completely dependent on this area alone due to good connectivity with surrounding suitable habitats.

4 Discussion

4.1 Designated Sites

Due to the distance between the proposed OHL (>5 km) and any statutory or non-statutory sites with designations for terrestrial features, the proposals are unlikely to negatively impact on any such sites. Potential effects on sites designated for ornithological features are discussed within the Ornithology Report.

4.2 Habitats and Peat

Permanent habitat loss will be limited to the area occupied by H poles only. Other impacts on habitats will be only temporary, as construction of each pole location will be carried within an approximate 24 hour period, and will be completed under a Construction Environmental Management Plan (CEMP): The CEMP will be implemented on site by a suitably experienced Environmental/Ecological Clerk of Works (ECoW) will contain the following key provisions to avoid and reduce impacts on habitats:

- Temporary trackway or similar will be used during the installation of the OHL, which will limit damage to vegetation and compaction of underlying peat and soils on all the habitats present on site, particularly on the wetter regions of the wet heath/blanket bog vegetation.
- Excavated materials will be temporarily stored on boards/trackway and will be replaced in the order excavated to prevent changes soil or hydrological conditions, which may lead to a change in habitat condition.

Two potential Groundwater Dependent Terrestrial Ecosystems (GWDTEs), comprising alkaline flushes (**Figure 2**, Target Notes 2 and 10) are located near the northern and southern ends of the proposed OHL route. As per policy 59 of the Highland Wide Local Development Plan (HwDLP), design of the proposed OHL has sought to avoid impacts on the flush at Target Note 2 habitats by siting the supporting poles at least 50 m its location. To avoid impacts on the flush at Target Note 10, the line was moved northwards to an area that is not likely to be hydrologically connected to the source of irrigation for this flush (i.e. downslope and to the north of the unnamed burn which drains the plantation area). No effects on the flush at Target Note 10 are therefore anticipated. The requirement for a minimum 50 m buffer on the flush at Target Note 2 will be included within the CEMP and will be marked out on site by the ECoW prior to any construction activities.

Excavation of peat is expected to be temporary and limited to installation of 'H' poles and buried cables. The final specifications for both these elements of the proposals were not available at the time of writing of this report, however, the relatively small scale of the poles (see section 1.3), in combination with the peat depth survey results (**Appendix 3**) suggest that significant effects on peat are unlikely. Once the final design details are available, the need for a Peat Management Plan (PMP) will be assessed and, if one is required, the details would be agreed with SEPA prior to construction of the proposed development.

4.3 Invasive Plant Species

To prevent the spread of the invasive moss *Campylopus introflexus* and rhododendron, good biosecurity measures will be included within the CEMP. A minimum 7 m buffer will be maintained from all rhododendron stands within the woodland, in which no works such take place, including the storage or materials or equipment. To prevent the

introduction and spread of invasive species within the site during the proposed development, and off-site spread of invasives, all tools and machinery will arrive to site clean and free from detritus and would be cleaned thoroughly prior to leaving site.

4.4 Protected and Notable Species

The impacts on the proposed development on the potential species on site were assessed with reference to Policies 58 and 59 of the HwLP and mitigation (if required) is detailed below.

4.4.1 Reptiles

The site offers excellent potential habitats for all three species of reptile found within the region; common lizard, slow worm and adder. Habitat loss as a result of the proposals would be limited, with permanent loss being restricted to the base of the supporting poles. Any temporary construction areas would be fully reinstated upon completion of the works. As a result, the overall impact of the proposed s37 Application for grid connection on abundance or distribution of local populations of reptiles is likely to be negligible.

However, as reptiles are protected from killing/injury under the W&CA, if ground clearance works are to take place during the colder months e.g. October/November or March, when reptiles may be active but moving slowly, pre-construction checks immediately prior to clearance or ground-breaking should be undertaken by a suitably qualified ECoW.

4.4.2 Otter

Otter are fully protected under the Habitats Regulations 1994 (as amended) and as such are afforded a greater deal of protection and consideration in terms of impacts from developments (e.g. under HwLP Policy 58).

Although no signs of otter were recorded during the survey, suitable habitat exists within the site boundary to support an otter population. The site is well connected to the wider landscape through a network of waterbodies, including Loch Luichart in the south and Loch Glascarnoch in the North, which offer excellent commuting and foraging potential for otter to move through the site. Signs of otter were recorded in the wider landscape, including within a neighbouring areas of Corriemoillie Estate during bird surveys, suggesting that the site is likely within an otter's territory and therefore there is potential for otter to use the site for foraging and commuting.

No works within 30 m of any watercourse are expected, therefore limiting the risk of a pollution incident and the risk of damage to the riparian habitats which may be used by otter. In addition, construction of the proposed development would be covered under the CEMP. This document will identify appropriate controls to prevent harm to otter during construction, on the basis of pre-construction surveys for this species. Controls would include measures to prevent otters falling into excavations (see Section 4.5), avoidance of direct lighting of watercourses and standard pollution prevention measures to avoid contamination of watercourses with sediment and chemicals. Implementation of the controls identified in the CEMP would be monitored on site by a suitably experienced ECoW who would have the power to stop works and put in place additional mitigation measures if necessary.

To prevent accidental disturbance of otter, a pre-works check for otter activity should be undertaken on all watercourses within 200 m of the development should be undertaken at least six weeks prior to works commencing.

Current evidence would suggest there is no requirement for a NatureScot Otter Licence.

4.4.3 Water Vole

Water vole are protected under W&CA, an SBL species and are a priority species within the Highland BAP. No positive signs of water vole were recorded during the survey, however water vole are known to be in the wider catchment of the site and suitable habitat was noted within the site boundary.

As no works are anticipated within 30 m of any watercourse, it is unlikely any water vole habitat will be disturbed during construction. However, to prevent accidental ingress of plant and personnel into water vole habitat, suitable areas will be identified within the CEMP and marked on site by the ECoW so that a 30 m buffer is maintained.

If a 30 m buffer between works and watercourses cannot be maintained, a pre-works check for water vole, should be undertaken between April to September when water vole are active.

Current evidence would suggest there is no requirement for a NatureScot Water Vole Licence.

4.4.4 Badger

Badger are known to be present within the woodland in the southern part of the site. The location of the sett was not recorded during the protected species survey, despite an extensive survey, and so it was concluded that badger were likely only foraging within the site. However, there is suitability for sett building within the woodland blocks to the south, within 30 m of the works area. To prevent accidental disturbance or harm to badgers and their setts, a pre-works check for badger within 30 m of the proposed construction areas (including temporary construction) should therefore be undertaken, at least six weeks prior to construction commencing.

General mitigation measures to protect badgers which may be unexpectedly encountered during construction works are detailed in Section 4.5 and will be included in the CEMP.

Current evidence would suggest there is no requirement for a NatureScot Badger Licence.

4.4.5 Pine Marten and Red Squirrel

Pine marten and red squirrel are both SBL and BAP species, therefore the proposal should seek to avoid detrimental effects on both these species.

No evidence of pine marten or red squirrel was recorded during the protected species survey, but a population of red squirrel is known to occur within 300 m of the substation. Tree felling within the woodland to the south is expected to be limited. However, to prevent accidental disturbance or harm to pine marten or red squirrel, prior to any felling or construction works within the wooded areas, a pre-construction checks for any pine marten dens within 250 m or any red squirrel dreys within 50 m will be undertaken at least six weeks prior to construction.

General mitigation measures to protect any pine marten or red squirrel which may be unexpectedly encountered during construction works are detailed in Section 4.5 and will be included in the CEMP.

Current evidence would suggest there is no requirement for a NatureScot Pine Marten or Red Squirrel Licence.

4.4.6 Wildcat

The wildcat is fully protected under the Habitats Regulations 1994 (as amended) and is included within the SBL and BAP as a priority species for conservation, as such the development should not have an adverse impact on the status of the species.

Although suitable habitat exists within the site to support wildcat (e.g. marginal habitats and fenced young plantation woodland supporting suitable prey species) no evidence of wildcat or suitable den sites were recorded during the survey. As development would be small scale in terms of overall habitat loss and because it does not pose any threat of habitat fragmentation (i.e. no new permanent roads or buildings will be constructed), it is not expected that the S37 application will negatively impact on any wildcats which may be using the site for hunting.

To prevent accidental disturbance of wildcat, a pre-construction check of the marginal habitats within 200 m of the southern part of the proposed OHL route should be undertaken within six weeks of construction and should focus on a search for any suitable den or resting sites.

Current evidence would suggest there is no requirement for a NatureScot Wildcat Licence.

4.4.7 Mountain Hare

Mountain hare are an SBL and BAP species and as such the development should seek to avoid any detrimental impacts on the status of this species.

Much of the open moorland habitat, mainly comprising wet heath, in the northern part of the site is suitable for mountain hare and similar habitat is abundant beyond the site boundary to the north and west, where the site borders open hill land. Construction of the proposed OHL therefore has the potential to disturb mountain hare, but this would be short-term and limited to the duration of the construction process.

To prevent harm to mountain hare, prior to any ground works, e.g. clearance of vegetation for pole installation or construction of temporary tracks a pre-construction check should be undertaken, especially during February to September when leverets (young hare) are potentially present. With these measures in place, it is considered that the development is unlikely to negatively impact on the population or distribution of any local mountain hare.

General mitigation measures to protect any hare which may be unexpectedly encountered during construction works are detailed in Section 4.5 and will be included in the CEMP.

4.5 General Mitigation

The following good practice measures should be adhered to avoid construction phase impacts on individual animals on site:

- Prior to any ground clearance or vegetation clearance, a preconstruction check will be conducted by a suitably experienced Ecologist.
- Open ended pipes or excavations will be covered or fitted with ramps when unattended to prevent the accidental entrapment on any animals on site. Ramps can be made using wooden boards that is no less than 0.5m wide and positioned at an angle of no more than 45°. Each open trench/excavation should be checked daily.
- Any temporary lighting used during the construction phase should be directional and focus on the working area. Unintentional light spill should be minimised to prevent disturbance to any crepuscular species using the site.
- No construction activities should take place on should during the two hours before dawn and works should aim to finish at least one hour before dusk.

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Figures

Appendix 1 – Sample Quadrats and Target Notes

Sample quadrat data are presented in Tables 1 - 2. Cover of vegetation is expressed in domin which is interpreted as follows:

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

Table A1.1 – Quadrat Data

Quadrat	**4**	**1**	**5**	**8**	**9**	**3**	**6**	**7**	**2**	**10**
Type	Wet heath					Bog			Flush	
NVC sub-community	M15b	M15c	M15c	M15c	M15c	M17a	M17b	M17b	M10a	M10a
Bare peat			4							
Bare rock/ gravel									7	8
Litter/dead sphagnum				5	4					
Betula nana			2				2	4		
Calluna vulgaris	5	5	5		4	4	6	4		
Campylium stellatum									3	3
Carex dioica									4	2
Carex echinata										2
Carex hostiana									5	1
Carex panicea	1								4	1

Quadrat	4	1	5	8	9	3	6	7	2	10
Carex pulicaris						1				2
Carex viridula oedocarpa									3	3
Cladonia portentosa	4	5	4	2	4		4	3		
Cladonia uncialis		2								
Drosera anglica									3	4
Drosera rotundifolia			1			2	1	3		3
Eleocharis quinqueflora										4
Empetrum nigrum						2	2			
Erica tetralix	5	4	5	4	4	3	4	5		3
Eriophorum angustifolium	4	3				2				
Eriophorum vaginatum				4		7	8	7		
Euphrasia officinalis agg.										2
Hypnum jutlandicum				2						
Juncus bulbosus									2	
Molinia caerulea	6			5	6					
Narthecium ossifragum	4	1	4	5	5	3	2	3	2	3
Odontoschisma sphangi					2					
Palustriella commutata									4	2
Pedicularis sylvatica	2								1	
Pinguicula vulgaris									3	2
Pleurozia purpurea	5			2						
Polygala serpylifolia	1			1						
Potentilla erecta	4			1	2					
Racomitrium lanuginosum		6	3	3	1		3			
Scorpidium scorpioides										5

Quadrat	4	1	5	8	9	3	6	7	2	10
Sphagnum capillifolium capillifolium		4	4		5	5	6	8		
Sphagnum medium								2		
Sphagnum papillosum			3			5	2			
Sphagnum tenellum		3	4							
Succissa pratensis										2
Trichophorum germanium		6	6	8	6	7	4	5		

Target Notes

Target Note	Description	Photo
1	Sparse U4a grassland on disturbed area	
2	M10 flush. Crossing mineral ground between deer fences. Abundant *Drosera anglica*. See Quadrat 2.	See Section 3.2.1

3	Wet heath vegetation extends beyond deer fence for a short distance, but then is mixed with brash and sparse wet heath vegetation with soft rush on Corriemoillie clear-fell/restock site.	
4	Small patch of M17 blanket bog with *Betula nana* and *Rubus chamaemorus*.	-
5	*Betula nana* occasional	-
6	Patches of bog restricted to flatter areas along stream. *Betula nana* frequent in flatter areas	-

7	*Arctostaphylos alpina* on peat hagg	
8	Bog vegetation extensive in this flat area	See Section 3.2.1
9	Patchwork of M15c and M17b above stream	-

10	Rougher M15b wet heath on south side of deer fence	
11	Plantation with Scots pine, birch, rowan with poor *Molinia* dominated understorey	See Section 3.2.1

12	Small diffuse area of M15a vegetation where drainage collects and soaks away	
13	This slope M15b with scattered pine and birch regeneration. M19a in foreground	

14	Small area of M19a with pine and birch regeneration invading	See Section 3.2.1
15	Stony and very sparsely vegetated M10 flush seeping from small scar in the slope. See Quadrat 10	See Section 3.2.1

Appendix 2 – Overview of Relevant Planning Policy and Legislation

This section provides an overview of the framework of legislation and policy which underpins nature conservation and is a material consideration in the planning process in Scotland.

Plans and Policy

National Planning Policy

In 2014 the Scottish government produced its third National Planning Framework (NPF3) a long-term strategy for Scotland. In its aims it states that statutory development plans must have regard for the National Planning Framework (NPF). NPF3 should be considered by local authorities as they work with community partners to take forward their Single Outcome Agreement as a building plan for the place.

The NPF3 covers sustainability, lower carbon emissions, nature and connectivity. The section entitled 'A natural, resilient place' sets out how the planning system should promote the use of land in meeting the need for homes and other uses, while safeguarding and improving the environment and ensuring safe and healthy living conditions.

The planning policy principles in paragraph 194 of the Scottish Planning Policy document uses the strategies set out in NPF3. It states the planning system should:

- facilitate positive change while maintaining and enhancing distinctive landscape character;
- conserve and enhance protected sites and species, taking account of the need to maintain healthy ecosystems and work with the natural processes which provide important services to communities;
- promote protection and improvement of the water environment, including rivers, lochs, estuaries, wetlands, coastal waters and groundwater, in a sustainable and coordinated way;
- seek to protect soils from damage such as erosion or compaction;
- protect and enhance ancient semi-natural woodland as an important and irreplaceable resource, together with other native or long-established woods, hedgerows and individual trees with high nature conservation or landscape value;
- seek benefits for biodiversity from new development where possible, including the restoration of degraded habitats and the avoidance of further fragmentation or isolation of habitats; and
- support opportunities for enjoying and learning about the natural environment.

Scottish Biodiversity Strategy

The Scottish Biodiversity Strategy is constituted by a combination of two documents: 'Scotland's Biodiversity: It's in Your Hands', which was published in 2004, and the '2020 Challenge for Scotland's Biodiversity'; published in 2013. The aims of Scotland's 2020 challenge are to:

- protect and restore biodiversity on land and in our seas, and to support healthy ecosystems;
- connect people with the natural world, for their health and well-being, and to involve them more in decision making; and
- maximise the benefits for Scotland of a diverse natural environment and the services it provides, contributing to sustainable economic growth.

Further information can be found at: https://www.nature.scot/scotlands-biodiversity/scottish-biodiversity-strategy

Local Biodiversity Action Plan

Local Biodiversity Action Plans (LBAPs) identify habitat and species conservation priorities at a local level (typically County by County) and are usually drawn up by a consortium of local Government organisations and conservation charities. Although they are no-longer managed at a national level many are still reviewed and updated at a local level.

It should be noted that the existence of a Species Action Plan (SAP) or Habitat Action Plan (HAP) does not always infer an elevated level importance for those features. These plans may be designed to encourage an increase in these habitats/species, rather than to protect a county-scarce feature.

Highland BAP

Highland Nature Biodiversity Action Plan 2021 – 2026 is currently in a draft stage and is in the process of being formally adopted. The plan is focused on actions which can be delivered at a local scale but is lead from international and national priorities. It has identified nine key actions and six priority landscapes/habitats. Both peatlands and woodland are identified as priority habitats within the BAP. it is focused on restoring peatlands and restoring native woodlands.

- Further information, and the full Highland Biodiversity Action Plan document can be accessed at: https://www.highland.gov.uk/download/meetings/id/78100/item_11_highland_biodiversity_action_plan_-_council_commitments

Local Plan

Highland-wide Local Development Plan (HwLDP)

Highland Council produced a local development plan, which was adopted in April 2012 and provides guidance on policies that will be used by Highland Council when assessing planning applications. The relevant policies include:

- Policy 55: Peat and Soils which states “Development proposals should demonstrate how the have avoided unnecessary disturbance, degradation or erosion of peat and soils”
- Policy 57: Natural Built and Cultural Heritage which states “All development proposals will be assessed taking into account the level of importance and type of features, the form and scale of the development and any impact on the feature and its setting.”
- Policy 58: Protected Species which focuses on European Protected Species and as such “Surveys should be carried out to establish the presence of protected species and if necessary, mitigation plan to avoid or minimise any impacts on the species before determining the application”
- Policy 59: Other Important Species focuses on priority species, such as SBL species or species listed within the BAP to avoid detrimental affect on these species.
- Policy 60: Other Important habitats focuses on habitats which are not protected under nature conservation designations and will seek to protect these habitats or if the development outweighs the

desirability of retaining these habitats, will seek to put in place satisfactory measures including compensatory habitat creation.

Further information, and the full local development plan, can be accessed here: https://www.highland.gov.uk/info/178/local_and_statutory_development_plans/199/highland-wide_local_development_plan

General Legislation

The following presents accounts present a summary of the legislation relevant to the site and proposals. It is recommended that the reader also refer to the original legislation for definitive interpretation.

The Conservation (Natural Habitats, &c.) Regulations 1994 (as amended)

The Conservation (Natural Habitats, &c.) Regulations 1994 (as amended), henceforth referred to as the Habitats Regulations were the principal means by which the European Union's ECC Directive 92/43 (The Habitats Directive) as amended is transposed into Scottish Law and remain in force after 'Brexit' which took place on 31st December 2020.

Under EU legislation, The Habitats Regulations placed a duty upon the relevant authority of government to identify sites which are of importance to the habitats and species listed in Annexes I and II of the Habitats Directive. Those sites which met the criteria were, in conjunction with the European Commission, designated as Sites of Community Importance, and subsequently identified as Special Areas of Conservation (SAC) by the European Union member states. The regulations also placed a duty upon the government to maintain a register of European protected sites designated as a result of EC Directive 79/409/EEC on the Conservation of Wild Birds (The Birds Directive). These sites are termed Special Protection Areas (SPA) and, in conjunction with SACs, formed the Natura 2000 network of sites.

Post Brexit, European sites are still protected in Scotland and the rest of the UK. The terms "European site", "European marine site", and "European offshore marine site", have been retained, as have "Special Area of Conservation" (SAC) and "Special Protection Area" (SPA). SAC and SPA are no longer part of the European Union's Natura 2000 network. Instead, they form a UK-wide network of protected sites, referred to in the 1994 Regulations as the UK site network, and retain the same protections. The UK site network is made up of SACs and SPAs designated at various points in time before exit day (i.e. UK sites that formed part of the EU's Natura 2000 network prior to exit day), and any sites designated under the Habitats Regulations after exit day.

The Habitats Directive is underpinned by the precautionary principle; that is that projects can only be permitted having ascertained no adverse effect on the integrity of protected areas within the UK site network. Projects may still be permitted if there are no alternatives, and there are imperative reasons of overriding public interest. These provisions, together with the requirement for competent authorities to undertake Habitats Regulations Appraisal (HRA) are unchanged after Brexit.

The Habitats Regulations also provide for the protection of individual species of fauna and flora of European conservation concern listed in Schedules 2 and 5 respectively. These are commonly referred to as European Protected Species and continue to be referred to as such below. Schedule 2 includes species such as otter, great crested newt and most recently beaver for which the Scottish population represents a significant proportion of the total European population. It is an offence to deliberately kill, injure, disturb or trade these species. Schedule 5 plant species are protected from unlawful destruction, uprooting or trade under the regulations.

It is also an offence under the Habitats Regulations for any person to have in their possession or control, to transport, to sell or exchange, or to offer for sale, any live or dead protected species, part of a protected species or anything derived from a protected species, which has been unlawfully taken from the wild.

The Wildlife and Countryside Act (WCA) 1981

The WCA, as amended, consolidates and amends pre-existing national wildlife legislation in order to implement the Bern Convention and the Birds Directive. It complements the Conservation (Natural Habitats. &c.) Amendment (Scotland) Regulations 2012, offering protection to a wider range of species. The Act also provides for the designation and protection of national conservation sites of value for their floral, faunal or geological features, termed Sites of Special Scientific Interest (SSSIs).

Schedules of the act provide lists of protected species, both flora and fauna, and detail the possible offences that apply to these species. All relevant species-specific legislation is detailed later in this Appendix.

Nature Conservation (Scotland) Act 2004

The Nature Conservation (Scotland) Act 2004 places a duty on all public authorities, including local planning authorities, to consider biodiversity in their work. The legislation also requires government departments to have regard to the Convention on Biological Diversity. As a result of the Act, Scottish ministers were required to produce a biodiversity strategy for Scotland (the Scottish Biodiversity Strategy) and a list of species and habitats of principal importance for biodiversity conservation in Scotland (the Scottish Biodiversity List) and to take or promote steps to further their conservation. This legislation also strengthens the protection given to SSSIs and amends rules on protecting certain birds, animals and plants.

Wildlife and Natural Environment (Scotland) Act 2011

The Wildlife and Natural Environment (Scotland) Act 2011 or WANE Act amends the Wildlife and Countryside Act, to create more far-reaching legislation in respect of invasive species. In relation to the spread of invasive species, The Act makes it an offence to:

- plant, or otherwise causes to grow, any plant in the wild at a place outwith its native range.

or

- release, or allow to escape from captivity, any animal
    - to a place outwith its native range; or
    - of a type the Scottish Ministers, by order, specify; or
- otherwise causes any animal outwith the control of any person to be at a place outwith its native range.

This does not apply to animals that are released or allowed to escape from captivity for the purpose of being subsequently killed by shooting, which are at present: common pheasant and red-legged partridge.

The Act also introduced new offences in relation to keeping invasive species and made it an offence for any person to:

- keep, have in their possession, or have under their control
    - any invasive animal of a type which the Scottish Ministers, by order, specify; or
    - any invasive plant of a type so specified.

The Act also makes provision for the prohibition of keeping invasive animal and plant species and for requiring notification about the presence of such species in a particular area.

In addition to the strengthening of invasive species legislation, the Act also introduced tougher powers against wildlife crimes.

Water Environment (Controlled Activities) (Scotland) Regulations 2011 (CAR Regulations)

The Water Environment (Controlled Activities) (Scotland) Regulations 2011 (CAR Regulations) provide the regulator environment covering the impacts of certain activities on water abstractions and Ground Water Dependent Terrestrial Ecosystems (GWDTE) which member states are obliged to protect from significant damage, under the EU Water Framework Directive. SEPA have developed guidance on the identification, assessment and protection of GWDTE.

Wild Mammals Protection Act 1996

This Act offers protects a form of protection to all wild species of mammals, irrespective of other legislation, and focussed on animal welfare, rather than conservation.

Unless covered by one of the exceptions, a person is guilty of an offence if he mutilates, kicks, beats, nails or otherwise impales, stabs, burns, stones, crushes, drowns, drags or asphyxiates any wild mammal with intent to inflict unnecessary suffering.

Its application is typically restricted to preventing deliberate harm to wildlife (in general) during construction works etc.

Specific Legislation

Herpetofauna (reptiles and amphibians)

All the UK's native reptiles and amphibians are protected by law, although their level of protection differs.

The following species are have additional protection under the Habitats Regulations (as amended):

- Great crested newt *Triturus cristatus.*
- Pool frog *Pelophylax lessonae.*
- Natterjack toad *Epidalea calamita.*
- Sand lizard *Lacerta agilis.*
- Smooth snake *Coronella austriaca.*
- Sea turtles (*Caretta caretta, Chelonia mydas, Dermochelys coriacea, Eretmochelys imbricata, Lepidochelys kempii*).

The legal protection for these species is outlined in Section 43 of the Habitats Regulations, and states that a person commits an offence if they:

- deliberately capture, injure or kill a protected species;

- deliberately disturb a protected species;
- deliberately take or destroy eggs of a protected species; or
- damage or destroy a protected species' breeding site or resting place.

This is a simplified description of the legislation. In particular, the offences mentioned here may be absolute, intentional, deliberate or reckless. Note that where it is predictable that reptiles are likely to be killed or injured by activities such as site clearance, this could legally constitute intentional killing or injuring.

Widespread reptile species are protected under part of Section 9(1) of the Wildlife & Countryside Act 1981 (as amended) against:

> intentional killing and injuring (note the provision in Section 9(1) of Wildlife & Countryside Act 1981 prohibiting "taking" does not apply to reptiles).

Both reptiles (adder, grass snake, common lizard and slow worm) and amphibians (common frog, common toad, smooth newt, palmate newt) are protected via part of Section 9(5) of the Wildlife & Countryside Act 1981 (as amended) against:

- selling, offering or exposing for sale, or having in possession or transporting for the purpose of sale, any live or dead wild animal or any part of, or anything derived from, such an animal; or
- publishing or causing to be published any advertisement likely to be understood as conveying buying or selling, or in or selling, or intending to buy or sell, any of those things.

Four species of reptile excluding sea turtles (slow worm, sand lizard, adder and common lizard) and three species of amphibian (common toad, natterjack toad, pool frog and great crested newt) are listed as are listed as SPI on the Scottish Biodiversity List and therefore are a material consideration for Local Planning Authorities (LPAs) during the planning process.

Badger

Badgers (are protected in Britain by the Protection of Badgers Act 1992. The purpose of this Act is to protect the animals from deliberate cruelty and from the incidental effects of lawful activities which could cause them harm. Under this legislation it is an offence to:

- wilfully kill, injure or take a badger (or attempt to do so);
- cruelly ill-treat a badger;
- dig for a badger;
- intentionally or recklessly damage or destroy a badger sett, or obstruct access to it;
- cause a dog to enter a badger sett;
- disturb a badger when it is occupying a sett;
- have in their possession, or under their control, any dead badger or any part of, or anything derived from, a dead badger;
- use, for the purpose of killing or taking a badger, badger tongs or any firearm (see legislation for exceptions);
- sell a live badger or offers one for sale or has a live badger in their possession or under their control; or

- mark, or attaches any ring, tag or other marking device to, a badger (other than one which is lawfully in their possession by virtue of such a licence).

If any of the offences listed above resulted from a person being reckless, even if they had no intention, their action would still be considered an offence.

Otter

Otters are protected under sections 9 and 11 of the Wildlife and Countryside Act 1981 and also under the Habitats Regulations. Under this legislation, it's an offence to:

- capture, kill, disturb or injure otters (on purpose or by not taking enough care);
- damage or destroy a breeding or resting place (deliberately or by not taking enough care);
- obstruct access to their resting or sheltering places (deliberately or by not taking enough care); or
- possess, sell, control or transport live or dead otters, or parts of otters.

Otter are listed as SPI in are listed as SPI on the Scottish Biodiversity List and therefore are a material consideration for Local Planning Authorities (LPAs) during the planning process.

Water Vole

The water vole is fully protected under Schedule 5 of the Wildlife and Countryside Act 1981 and is a priority conservation species. Under this legislation, it's an offence to:

- intentionally capture, kill or injure water voles;
- damage, destroy or block access to their places of shelter or protection (on purpose or by not taking enough care);
- disturb them in a place of shelter or protection (on purpose or by not taking enough care); or
- possess, sell, control or transport live or dead water voles or parts of them (not water voles bred in captivity).

Water vole are listed as SPI on the Scottish Biodiversity List and therefore are a material consideration for Local Planning Authorities (LPAs) during the planning process.

Red Squirrel

Red squirrel are protected species, listed under Schedules 5 and 6 of the Wildlife and Countryside Act 1981 (as amended). Under this legislation it is an offence to intentionally or recklessly:

- kill or injure a red squirrel;
- damage or destroy any structure or place a red squirrel uses for shelter or protection; or
- disturb a red squirrel while it is occupying a structure or place for shelter or protection.

It is also an offence to:

- possess or control, sell or offer for sale, or possess or transport for the purpose of sale any living or dead red squirrel or any derivative of such an animal.

Red squirrel are listed as SPI on the Scottish Biodiversity List and therefore are a material consideration for Local Planning Authorities (LPAs) during the planning process.

Pine Marten

Pine marten are protected species, listed under Schedules 5 and 6 of the Wildlife and Countryside Act 1981 (as amended). Under this legislation it is an offence to intentionally or recklessly:

- kill or injure a pine marten;
- damage or destroy any structure or place a pine marten uses for shelter or protection; or
- disturb a pine marten while it is occupying a structure or place for shelter or protection (except when this is inside a dwelling house).

It is also and offence to:

- possess or control, sell, offer for sale or possess or transport for the purpose of sale any living or dead pine marten or any derivative of such an animal.

Pine marten are listed as SPI on the Scottish Biodiversity List and therefore are a material consideration for Local Planning Authorities (LPAs) during the planning process.

Scottish Wildcat

Scottish wildcat receive full protection under the Habitats Regulations 1994 (as amended) making it is an offence to intentionally or recklessly:

- capture, kill, disturb or injure a wildcat;
- damage or destroy a breeding or resting place of a wildcat;
- disturb a wildcat while it is rearing or otherwise caring for its young
- obstruct access to their resting or sheltering places ; or
- possess, sell, control or transport live or dead Scottish wildcat, or any part of, or anything derived from, such an animal.

Scottish Wildcat are listed as SPI on the Scottish Biodiversity List and therefore are a material consideration for Local Planning Authorities (LPAs) during the planning process. The Scottish Wildcat Conservation Action Plan aims to restore viable populations of the species north of the Highland Boundary Fault.

Mountain Hare

The Animals and Wildlife (Penalties, Protections and Powers) (Scotland) Act 2020 achieved royal assent in July 2020. This contains a provision to make changes to Schedule 5 of the Wildlife and Countryside Act 1981, to confer protection to mountain hares from intentional or reckless killing or injury at all times.

Mountain hare are listed as SPI on the Scottish Biodiversity List and therefore are a material consideration for Local Planning Authorities (LPAs) during the planning process.

Appendix 3 Peat Depth Survey

Introduction

Overview

Nevis Environmental Ltd (Nevis) was commissioned by Bluebell Wind Farm Ltd, the Applicant, to carry out a peat depth survey for the site known as Lochluichart Extension II Grid Connection, hereafter referred to as 'the site'. It is proposed to construct a new 5.82 km 33 kV single circuit grid connection which will connect the Consented Development and the existing Corriemoillie substation. It is proposed that the majority of the grid connection will be comprised of an overhead line (OHL), supported by "H" wooden poles, although short sections at the northern and southern extents of the route will comprise buried cable.

The purpose of the peat depth survey was to evaluate the presence of peat across along the proposed route to inform the layout. The initial peat depth survey followed Scottish Government guidance for a preliminary assessment of peatland extent and conditions (Scottish Government, Scottish Natural Heritage, SEPA, 2017).

Site Summary

The site is located to the north west of Garve, Highland and is centred on Ordnance Survey (OS) grid reference (NH3334 6686). The site is shown on Figure 1 and is contained primarily within the footprint of the Operational Scheme, terminating at the existing Corriemoillie Substation, to the south of the wind farm.

The site is comprised of primarily open moorland located on the boundary between Loch Luichart Estate and Corriemoillie Estate, between the Operational Scheme and Corriemoillie Wind Farm. The two estates are separated by two deer fences, with the proposed route running in between these for much of its length. To the south, the route runs within an existing ride between two block of coniferous plantation, before terminating at Corriemoillie substation.

Legislation and Guidance

The overarching framework for national legislation is set by European Community (EC) Directives, with the relevant Directive on waste matters being 2008/98/EC on waste (the Waste Framework Directive). Article 4 of this Directive sets out the waste hierarchy and requires that it is applied 'as a priority order in waste prevention and management legislation and policy'.

The main national legislation relevant to waste management activities for disposal of peat are:

- Environmental Protection Act 1990 (as amended).
- The Landfill (Scotland) Regulations 2003.
- Waste (Scotland) Regulations 2012.
- The Waste Management Licensing (Scotland) Regulations 2016.

The following environmental legislation relating to the water environment and soils must be adhered to throughout the life cycle of the project;

- Water Environment and Water Services (Scotland) Act 2003.

- Water Environment (Oil Storage) (Scotland) Regulations 2006.
- Water Environment (Controlled Activities) (Scotland) Regulations 2011.

As the overall site area exceeds 4 ha in size, a Controlled Activities Regulations (CAR) construction site licence will be required for the management of surface water run-off from the construction site.

Methodology

Desk Study

Prior to the site survey, the development area was assessed for designated sites using the MAGIC map portal (DEFRA, 2019), and peat coverage and classification was assessed using Scotland's Soils Carbon and Peatland Map 2016 (Scotland's Soils, 2016).

Peat Depth Survey

Nevis undertook peat probing along the route on 1st September 2021. The distribution of peat depth points was based on the latest revision of the grid connection route that was available at the time of the survey. The length of the grid connection route was walked and one peat depth was recorded at each assumed pole location; the location of poles was based on the start and end point of the route and a 100 m span between the poles. Depth points were recorded a 10 m offsets either side, in line with the grid connection route and an intermediate depth point was recorded at the halfway point (50 m) between each pole location. The sampling strategy was applied to both underground sections of the line and the overhead section. A total of 260 samples were collected.

Limitations

All areas of the site were accessed and there were no significant limitations to the survey.

Results

Desk Study

The site lies approximately 2 km from the nearest statutory designated site

The majority of the site is broadly classed as peat, with peaty podzols located in the southern section of the site. Based on the Scotland's Soils Peatland and Carbon Map (Scotland's Soils, 2016), the site is a mosaic of predominantly class 1 and class 5 peat.

The site contains several unnamed tributaries of the larger watercourse of the Allt Coire Mhuilidh. The site lies between Loch Glascarnoch to the north and Loch Luichart, to the south. These lochs are well connected through a number of tributaries and lochans, both within the site and the wider landscape.

Fairhurst Ltd reported the superficial geology underlying the site range from low to high permeability. Where superficial deposits are granular (sand and gravel) groundwater may be encountered. Perched groundwater tables may be present in granular lenses within/confined by more cohesive material (clay and silts).

Peat Depth Survey

The survey found the majority of the site is overlain by peat of 0.5 m to 2.5 m depth. Continuous areas of deeper peat are present in the central region of the OHL, close to Coire Muilidh (maximum depth 250 cm). As expected shallower areas of peat are found In the southern section of the route, Beinn a Bhric, where the ground was noted as containing exposed rock.

The results of the survey are shown in Figure 3.1 and Table 3.1

Table 3.1 Peat Survey Results.

Easting	Northing	Survey date	Survey point ID	Surveyor	Peat depth (cm)	Comments
233159	868901	01/09/2021	peat depth 1	BW	75	
233163	868881	01/09/2021	peat depth 2	BW	55	Taken at side of track
233160	868861	01/09/2021	peat depth 3	BW	0	Taken on access track
233159	868821	01/09/2021	peat depth 4	BW	40	West side of track
233162	868800	01/09/2021	peat depth 5	BW	4	
233166	868781	01/09/2021	peat depth 6	BW	35	
233170	868762	01/09/2021	peat depth 7	BW	1	
233173	868742	01/09/2021	peat depth 8	BW	30	
233178	868722	01/09/2021	peat depth 9	BW	40	
233181	868702	01/09/2021	peat depth 10	BW	40	
233183	868683	01/09/2021	peat depth 11	BW	5	
233185	868663	01/09/2021	peat depth 12	BW	50	
233187	868643	01/09/2021	peat depth 13	BW	0	Side of track
233187	868624	01/09/2021	peat depth 14	BW	20	
233187	868603	01/09/2021	peat depth 15	BW	20	
233187	868583	01/09/2021	peat depth 16	BW	90	
233187	868563	01/09/2021	peat depth 17	BW	55	
233187	868543	01/09/2021	peat depth 18	BW	65	
233185	868524	01/09/2021	peat depth 19	BW	15	
233178	868504	01/09/2021	peat depth 20	BW	5	Rocky area
233131	868441	01/09/2021	peat depth 21	BW	20	
233062	868368	01/09/2021	peat depth22	BW	0	
232993	868296	01/09/2021	peat depth23	BW	0	
232953	868252	01/09/2021	peat depth24	BW	60	
232944	868244	01/09/2021	peat depth25	BW	90	
232940	868241	01/09/2021	peat depth 26	BW	75	
232941	868250	01/09/2021	peat depth 27	BW	115	

Easting	Northing	Survey date	Survey point ID	Surveyor	Peat depth (cm)	Comments
232944	868250	01/09/2021	peat depth 28	BW	120	
232949	868236	01/09/2021	peat depth 29	BW	0	
232972	868193	01/09/2021	peat depth30	BW	35	
232974	868192	01/09/2021	peat depth31	BW	20	
232978	868189	01/09/2021	peat depth32	BW	10	
232974	868194	01/09/2021	peat depth33	BW	5	
232943	868154	01/09/2021	peat depth34	BW	50	
232918	868122	01/09/2021	peat depth35	BW	55	
232904	868107	01/09/2021	peat depth36	BW	90	Two *Betula nana*
232880	868076	01/09/2021	peat depth37	BW	90	
232854	868045	01/09/2021	peat depth38	BW	150	
232847	868037	01/09/2021	peat depth39	BW	80	
232841	868030	01/09/2021	peat depth40	BW	55	
232821	868008	01/09/2021	peat depth41	BW	50	
232819	868003	01/09/2021	peat depth42	BW	45	
232825	868003	01/09/2021	peat depth43	BW	10	
232821	867997	01/09/2021	peat depth44	BW	65	
232822	867957	01/09/2021	peat depth45	BW	40	
232824	867948	01/09/2021	peat depth46	BW	0	
232824	867938	01/09/2021	peat depth47	BW	65	
232826	867897	01/09/2021	peat depth48	BW	45	
232828	867857	01/09/2021	peat depth49	BW	140	
232829	867838	01/09/2021	peat depth50	BW	35	
232829	867848	01/09/2021	peat depth51	BW	10	
232825	867827	01/09/2021	peat depth52	BW	70	
232834	867827	01/09/2021	peat depth53	BW	60	
232832	867822	01/09/2021	peat depth54	BW	70	*Betula nana* present
232869	867770	01/09/2021	peat depth55	BW	80	Outflow of healthy bog pool
232875	867762	01/09/2021	peat depth56	BW	145	
232881	867753	01/09/2021	peat depth57	BW	135	
232904	867720	01/09/2021	peat depth58	BW	240	
232927	867688	01/09/2021	peat depth59	BW	240	

Easting	Northing	Survey date	Survey point ID	Surveyor	Peat depth (cm)	Comments
232933	867680	01/09/2021	peat depth60	BW	200	
232938	867671	01/09/2021	peat depth61	BW	160	
232962	867639	01/09/2021	peat depth62	BW	250	
232985	867607	01/09/2021	peat depth63	BW	140	
233020	867557	01/09/2021	peat depth64	BW	100	
233043	867525	01/09/2021	peat depth65	BW	20	*Betula nana* present
233049	867517	01/09/2021	peat depth66	BW	110	
233055	867509	01/09/2021	peat depth67	BW	55	Bog pool
233078	867476	01/09/2021	peat depth68	BW	85	
233103	867445	01/09/2021	peat depth69	BW	180	
233110	867438	01/09/2021	peat depth70	BW	180	
233118	867431	01/09/2021	peat depth71	BW	135	
233145	867402	01/09/2021	peat depth72	BW	90	
233172	867373	01/09/2021	peat depth73	BW	130	
233179	867366	01/09/2021	peat depth74	BW	105	
233186	867358	01/09/2021	peat depth75	BW	140	
233214	867329	01/09/2021	peat depth76	BW	135	
233241	867301	01/09/2021	peat depth77	BW	170	
233248	867293	01/09/2021	peat depth78	BW	130	
233255	867286	01/09/2021	peat depth79	BW	145	
233283	867257	01/09/2021	peat depth80	BW	105	
233310	867229	01/09/2021	peat depth81	BW	5	
233317	867221	01/09/2021	peat depth82	BW	10	
233324	867214	01/09/2021	peat depth83	BW	110	*Betula nana* & juniper seedling coming through
233350	867183	01/09/2021	peat depth84	BW	45	
233376	867153	01/09/2021	peat depth85	BW	0	
233383	867146	01/09/2021	peat depth86	BW	10	
233389	867138	01/09/2021	peat depth87	BW	1	
233415	867108	01/09/2021	peat depth88	BW	10	
233441	867077	01/09/2021	peat depth89	BW	2	
233448	867069	01/09/2021	peat depth90	BW	5	
233454	867062	01/09/2021	peat depth91	BW	40	

Easting	Northing	Survey date	Survey point ID	Surveyor	Peat depth (cm)	Comments
233481	867032	01/09/2021	peat depth92	BW	20	
233506	867001	01/09/2021	peat depth93	BW	110	
233513	866994	01/09/2021	peat depth94	BW	145	
233516	866984	01/09/2021	peat depth95	BW	160	
233510	866943	01/09/2021	peat depth96	BW	190	
233511	866905	01/09/2021	peat depth97	BW	215	
233512	866894	01/09/2021	peat depth98	BW	170	
233512	866884	01/09/2021	peat depth99	BW	50	
233513	866844	01/09/2021	peat depth100	BW	35	
233513	866804	01/09/2021	peat depth101	BW	60	
233514	866794	01/09/2021	peat depth102	BW	45	
233514	866784	01/09/2021	peat depth103	BW	105	
233515	866744	01/09/2021	peat depth104	BW	10	
233516	866704	01/09/2021	peat depth105	BW	95	
233516	866695	01/09/2021	peat depth106	BW	190	betula nana near
233517	866684	01/09/2021	peat depth107	BW	220	
233516	866644	01/09/2021	peat depth108	BW	5	lots of betula
233518	866604	01/09/2021	peat depth109	BW	100	
233518	866594	01/09/2021	peat depth110	BW	160	
233518	866584	01/09/2021	peat depth111	BW	85	
233519	866544	01/09/2021	peat depth112	BW	170	
233520	866505	01/09/2021	peat depth113	BW	75	
233520	866494	01/09/2021	peat depth114	BW	185	
233521	866484	01/09/2021	peat depth115	BW	180	
233521	866445	01/09/2021	peat depth116	BW	175	
233522	866405	01/09/2021	peat depth117	BW	50	
233522	866394	01/09/2021	peat depth118	BW	30	
233522	866384	01/09/2021	peat depth119	BW	10	
233524	866345	01/09/2021	peat depth120	BW	45	
233524	866304	01/09/2021	peat depth121	BW	130	
233525	866294	01/09/2021	peat depth122	BW	95	
233524	866285	01/09/2021	peat depth123	BW	25	

Easting	Northing	Survey date	Survey point ID	Surveyor	Peat depth (cm)	Comments
233526	866245	01/09/2021	peat depth124	BW	290	
233527	866205	01/09/2021	peat depth125	BW	125	
233527	866195	01/09/2021	peat depth126	BW	75	
233527	866184	01/09/2021	peat depth127	BW	25	
233522	866159	01/09/2021	peat depth128	BW	160	
233523	866145	01/09/2021	peat depth129	BW	60	
233520	866135	01/09/2021	peat depth130	BW	180	
233558	866120	01/09/2021	peat depth131	BW	35	
233566	866115	01/09/2021	peat depth132	BW	180	
233575	866109	01/09/2021	peat depth133	BW	160	
233607	866084	01/09/2021	peat depth134	BW	220	
233640	866062	01/09/2021	peat depth135	BW	220	
233648	866057	01/09/2021	peat depth136	BW	230	
233656	866050	01/09/2021	peat depth137	BW	15	
233689	866027	01/09/2021	peat depth138	BW	55	lots of betula nana
233721	866004	01/09/2021	peat depth139	BW	20	
233730	866009	01/09/2021	peat depth140	BW	35	
233729	865998	01/09/2021	peat depth141	BW	55	
233737	865993	01/09/2021	peat depth142	BW	10	
233754	865980	01/09/2021	peat depth143	BW	60	
233762	865974	01/09/2021	peat depth144	BW	80	
233770	865968	01/09/2021	peat depth145	BW	20	
233802	865944	01/09/2021	peat depth146	BW	90	
233834	865921	01/09/2021	peat depth147	BW	95	
233842	865915	01/09/2021	peat depth148	BW	85	
233850	865909	01/09/2021	peat depth149	BW	135	lots of betula nana
233883	865886	01/09/2021	peat depth150	BW	75	
233914	865862	01/09/2021	peat depth151	BW	5	
233923	865856	01/09/2021	peat depth152	BW	5	
233931	865849	01/09/2021	peat depth153	BW	2	
233964	865826	01/09/2021	peat depth154	BW	100	
233995	865802	01/09/2021	peat depth155	BW	50	
234004	865796	01/09/2021	peat depth156	BW	10	

Easting	Northing	Survey date	Survey point ID	Surveyor	Peat depth (cm)	Comments
234012	865790	01/09/2021	peat depth157	BW	65	
234044	865767	01/09/2021	peat depth158	BW	180	
234077	865743	01/09/2021	peat depth159	BW	100	
234084	865737	01/09/2021	peat depth160	BW	50	
234092	865731	01/09/2021	peat depth161	BW	40	
234125	865708	01/09/2021	peat depth162	BW	110	
234157	865684	01/09/2021	peat depth163	BW	190	
234165	865678	01/09/2021	peat depth164	BW	135	
234173	865672	01/09/2021	peat depth165	BW	110	
234205	865648	01/09/2021	peat depth166	BW	100	
234237	865624	01/09/2021	peat depth167	BW	160	
234665	863921	01/09/2021	peat depth168	DP	200	
234644	863917	01/09/2021	peat depth169	DP	75	Stoney area
234625	863912	01/09/2021	peat depth170	DP	40	Stoney area
234606	863910	01/09/2021	peat depth171	DP	58	Stoney area
234586	863905	01/09/2021	peat depth172	DP	74	
234566	863903	01/09/2021	peat depth173	DP	50	
234491	863889	01/09/2021	peat depth174	DP	100	Flush present
234430	863872	01/09/2021	peat depth175	DP	77	
234424	863874	01/09/2021	peat depth176	DP	45	
234419	863882	01/09/2021	peat depth177	DP	45	
234411	863905	01/09/2021	peat depth178	DP	210	
234390	863943	01/09/2021	peat depth179	DP	64	
234368	863998	01/09/2021	peat depth180	DP	124	
234335	864069	01/09/2021	peat depth181	DP	67	
234296	864146	01/09/2021	peat depth182	DP	30	
234291	864154	01/09/2021	peat depth183	DP	20	Steep gradient, rocky ground
234286	864163	01/09/2021	peat depth184	DP	10	Steep, rocky, roots
234267	864205	01/09/2021	peat depth185	DP	90	
234255	864236	01/09/2021	peat depth186	DP	65	
234251	864250	01/09/2021	peat depth187	DP	155	
234250	864260	01/09/2021	peat depth188	DP	155	

Easting	Northing	Survey date	Survey point ID	Surveyor	Peat depth (cm)	Comments
234243	864298	01/09/2021	peat depth189	DP	50	
234232	864331	01/09/2021	peat depth190	DP	65	
234222	864332	01/09/2021	peat depth191	DP	68	
234212	864334	01/09/2021	peat depth192	DP	35	
234173	864342	01/09/2021	peat depth193	DP	52	
234169	864345	01/09/2021	peat depth194	DP	30	
234163	864350	01/09/2021	peat depth195	DP	50	
234150	864371	01/09/2021	peat depth196	DP	20	Shallow soil. Ground rock close to surface
234115	864420	01/09/2021	peat depth197	DP	50	
234110	864427	01/09/2021	peat depth198	DP	73	
234107	864433	01/09/2021	peat depth199	DP	97	
234079	864471	01/09/2021	peat depth200	DP	58	Water running through
234085	864461	01/09/2021	peat depth201	DP	64	
234051	864499	01/09/2021	peat depth202	DP	74	Water running through
234019	864518	01/09/2021	peat depth203	DP	145	
234011	864527	01/09/2021	peat depth204	DP	120	
234003	864533	01/09/2021	peat depth205	DP	151	
233974	864560	01/09/2021	peat depth206	DP	250	Deep peat
233941	864582	01/09/2021	peat depth207	DP	47	
233934	864589	01/09/2021	peat depth208	DP	69	
233925	864599	01/09/2021	peat depth209	DP	54	
233896	864618	01/09/2021	peat depth210	DP	77	
233864	864647	01/09/2021	peat depth211	DP	43	Wooded area, birch, alder, scots pine. Young trees
233856	864653	01/09/2021	peat depth212	DP	66	
233849	864656	01/09/2021	peat depth213	DP	36	Woodland
233817	864680	01/09/2021	peat depth214	DP	52	
233813	864723	01/09/2021	peat depth215	DP	84	
233813	864733	01/09/2021	peat depth216	DP	19	
233813	864742	01/09/2021	peat depth217	DP	25	
233835	864778	01/09/2021	peat depth218	DP	34	

Easting	Northing	Survey date	Survey point ID	Surveyor	Peat depth (cm)	Comments
233860	864806	01/09/2021	peat depth219	DP	53	
233867	864816	01/09/2021	peat depth220	DP	47	
233873	864822	01/09/2021	peat depth221	DP	25	
233898	864852	01/09/2021	peat depth222	DP	39	Rocky
233924	864884	01/09/2021	peat depth223	DP	50	
233930	864892	01/09/2021	peat depth224	DP	50	
233936	864900	01/09/2021	peat depth225	DP	44	
233961	864931	01/09/2021	peat depth226	DP	30	
233989	864961	01/09/2021	peat depth227	DP	34	
233995	864967	01/09/2021	peat depth228	DP	34	
234002	864974	01/09/2021	peat depth229	DP	34	Very dry
234029	865004	01/09/2021	peat depth230	DP	36	
234057	865034	01/09/2021	peat depth231	DP	65	
234064	865041	01/09/2021	peat depth232	DP	50	
234071	865048	01/09/2021	peat depth233	DP	42	
234098	865075	01/09/2021	peat depth234	DP	52	
234126	865106	01/09/2021	peat depth235	DP	32	
234133	865114	01/09/2021	peat depth236	DP	34	
234140	865120	01/09/2021	peat depth237	DP	42	
234167	865147	01/09/2021	peat depth238	DP	59	
234191	865181	01/09/2021	peat depth239	DP	91	
234195	865189	01/09/2021	peat depth240	DP	80	
234198	865199	01/09/2021	peat depth241	DP	52	
234213	865235	01/09/2021	peat depth242	DP	61	
234228	865273	01/09/2021	peat depth243	DP	40	
234231	865282	01/09/2021	peat depth244	DP	36	
234235	865294	01/09/2021	peat depth245	DP	58	
234250	865330	01/09/2021	peat depth246	DP	62	Partially drying
234265	865367	01/09/2021	peat depth247	DP	118	
234268	865375	01/09/2021	peat depth248	DP	89	
234272	865385	01/09/2021	peat depth249	DP	42	
234286	865422	01/09/2021	peat depth250	DP	103	
234301	865460	01/09/2021	peat depth251	DP	91	

Easting	Northing	Survey date	Survey point ID	Surveyor	Peat depth (cm)	Comments
234305	865469	01/09/2021	peat depth252	DP	91	
234308	865478	01/09/2021	peat depth253	DP	82	
234322	865514	01/09/2021	peat depth254	DP	94	
234333	865553	01/09/2021	peat depth255	DP	101	
234326	865559	01/09/2021	peat depth256	DP	111	
234318	865564	01/09/2021	peat depth257	DP	74	
234286	865588	01/09/2021	peat depth258	DP	110	
234253	865608	01/09/2021	peat depth259	DP	94	
234245	865616	01/09/2021	peat depth260	DP	168	

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Figures