5 Ecology and Nature Conservation

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5 Ecology and Nature Conservation

5.1 Executive Summary

5.1.1 This chapter considers the potential impacts and their resulting effects on ecological features, such as designated nature conservation sites, habitats and protected species, in line with best practice guidance from the Chartered Institute of Ecology and Environmental Management (CIEEM).

5.1.2 The field study area, which included the full area within the Site boundary and a buffer area of up to 250m beyond the Site boundary, was surveyed in 2019 and 2020 to provide baseline information on habitats and faunal species. Habitat surveys included an extended Phase 1 habitat survey, a National Vegetation Classification (NVC) survey and a peatland condition survey. The dominant habitats are wet heath, blanket bog and wet modified bog. Seven potential areas of Groundwater Dependent Terrestrial Ecosystems (GWDTEs) were recorded. Protected species surveys identified two terrestrial mammal species: otter (*Lutra lutra*) and water vole (*Arvicola amphibius*) as well as five bat species: common pipistrelle (*Pipistrellus pipistrellus*), soprano pipistrelle (*Pipistrellus pygmaeus*), brown long-eared bat (*Plecotus auritus*), Daubenton's bat (*Myotis daubentonii*) and Natterer's bat (*Myotis nattereri*). Brown trout (*Salmo trutta*) and three-spined stickleback (*Gasterosteus aculeatus*) are likely to be the only native fish species present in the field study area, with common minnow (*Phoxinus phoxinus*) likely introduced by anglers. Brown trout population density was variable across the field study area and ranged from very poor to excellent by regional standards.

5.1.3 Without the application of mitigation, significant effects are predicted on Levishie Wood Site of Special Scientific Interest (SSSI), blanket bog, otter, water vole and brown trout. No likely significant effects are predicted on the River Moriston Special Area of Conservation (SAC). Following the application of mitigation, such as the implementation of a deer management plan, habitat management plan, fish monitoring and remediation, and standard working methods, such as a Construction Environmental Management Plan (CEMP) and pollution prevention measures, no significant residual effects are predicted.

5.2 Introduction

5.2.1 This chapter considers the potential effects on ecology and nature conservation resulting from impacts associated with the construction, operation and decommissioning of the Proposed Development. The specific objectives of the chapter are to:

- Describe the assessment methodology and significance criteria used in completing the impact assessment.
- Describe the ecological baseline of the Proposed Development and its zone of influence (ZOI)[1], including designated nature conservation sites, habitats and protected species, and, thereby, identify the ecological features that will be the focus of this assessment.
- Evaluate the sensitivity of each ecological feature.
- Describe the potential impacts from the Proposed Development, both direct and indirect, on ecological features and assess whether they result in likely significant adverse effects for the ecological features.
- Describe the mitigation measures proposed to avoid, reduce and offset likely significant adverse effects.

[1] *The area over which ecological features may be subject to significant effects as a result of the Proposed Development and its associated activities. In this case, the ZOI is considered to be up to 10km beyond the Site boundary.*

- Assess the significance of residual effects remaining following the implementation of mitigation.
- Assess the significance of cumulative effects between the Proposed Development and cumulative developments.

5.2.2 Potential impacts and effects on ornithological features are addressed separately in Chapter 6 (Ornithology).

5.2.3 This chapter is based on the Proposed Development as described in Chapter 2 (Design Iteration and Proposed Development) and has been completed in accordance with the CIEEM Ecological Impact Assessment (EcIA) guidelines (CIEEM, 2018). The chapter has been written by Nadine Little of Ramboll UK Limited (Ramboll). Nadine is a senior ecological consultant and Associate member of CIEEM with a Masters in Wildlife Biology and Conservation and over seven years' experience of undertaking ecology surveys and EcIAs. Field survey work was completed by Ramboll with support from Stagfire Ecological Surveys Ltd. All field surveys were led by surveyors with Associate or Member level status of CIEEM.

5.2.4 The assessment presented in this chapter is supported by additional information provided in various appendices, as follows:

- Appendix 5.1 – Methodology and Results for Baseline Data Collection;
- Appendix 5.2 – Photolog;
- Appendix 5.3 – Bat Survey Methodology and Results;
- Appendix 5.4 – Fish Survey Report;
- Appendix 5.5 – Peatland Condition Assessment;
- Appendix 5.6 – Deer Management Plan;
- Appendix 5.7 – Outline Habitat Management Plan; and
- Appendix 5.8 – Operational Development Deer Management Plan.

5.2.5 The following figures are also referred to in this chapter:

- Figure 5.1 – Designated Sites;
- Figure 5.2 – Phase 1 Habitats;
- Figure 5.3 – Target Notes;
- Figure 5.4 – NVC Habitats;
- Figure 5.5 – Potential GWDTEs;
- Figure 5.6 – Assessed GWDTEs;
- Figure 5.7 – Bat Detector Locations;
- Figure 5.8 – Peatland Condition Assessment;
- Figure 5.9 – Peatland Compartments and NVC Habitats;
- Figure 5.10 – Peatland Compartments and Phase 1 Habitats; and
- Figure 5.11 – Outline Habitat Management Plan Areas.

5.3 Legislation, Policy and Guidelines

5.3.1 The scope of the assessment has been informed by the following policy and legal framework:

Legislation

5.3.2 Relevant legislation has been reviewed and taken into account as part of this ecology assessment. Of particular relevance are:

- EC Directive on the Conservation of Natural Habitats and Wild Flora and Fauna, 92/43/EEC (European Commission, 1992);
- Conservation of Habitats and Species (Amendment) (EU Exit) Regulations (UK Government, 2019);
- The Conservation of Habitats and Species Regulations (UK Government, 2017a);
- Conservation (Natural Habitats Etc.) Regulations (UK Government, 1994);
- Wildlife and Countryside Act (UK Government, 1981);
- Nature Conservation (Scotland) Act (UK Government, 2004);
- Wildlife and Natural Environment (Scotland) Act (UK Government, 2011);
- UK Post-2010 Biodiversity Framework (UK Government, 2012);
- Town and Country Planning (Scotland) Act 1997 (UK Government, 1997);
- The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations (UK Government, 2017b); and
- the Ramsar Convention on Wetlands (Ramsar Convention, 1971).

Planning Policy

5.3.3 Relevant planning policies reviewed for this ecology assessment are:

- Scottish Planning Policy (SPP) (Scottish Government, 2014);
- UK Biodiversity Action Plan (BAP) (Joint Nature Conservation Committee (JNCC), 2010a);
- Scottish Biodiversity List (Scott Wilson, 2005);
- 2020 Challenge (Scottish Government, 2013);
- Highland-wide Local Development Plan (The Highland Council (THC), 2012);
- Inner Moray Firth Local Development Plan (THC, 2015a); and
- the Highland BAP (THC, 2015b).

Guidance

5.3.4 Best practice guidance has been recognised when undertaking the following field surveys:

- Phase 1 habitat survey (JNCC, 2010b);
- NVC (Rodwell, 2006);
- Peatland Condition Assessment (The Heather Trust *et al.*, 2017 and JNCC, 1994);
- Protected terrestrial mammal species: otter (Chanin, 2003), water vole (Capreolus Wildlife Consultancy, 2005 and Dean *et al*., 2016), wildcat (*Felis silvestris grampia*) (Scottish Natural Heritage (SNH), 2018a) and pine marten (*Martes martes*) (SNH, 2019);

- Bat surveys (SNH *et al*., 2019a); and
- Fish surveys (Hendry & Cragg-Hine, 1997, Summers *et al*., 1996, Scottish Fishery Co-ordination Centre (SFCC), 2007 and Scottish Environment Protection Agency (SEPA), 2010).

5.4 Consultation

5.4.1 Table 5.1 details the consultation responses relevant to ecology and nature conservation and provides information on where and/or how they have been addressed in this assessment.

Table 5.1 – Consultation Responses

Consultee and Date	Scoping/Other Consultation	Information Provided to Consultee	Response	Action Taken
NatureScot (NS) (previously SNH) 29 May 2019	Pre-Application Meeting (PAM)	N/A	With respect to ecology and nature conservation, NS identified the following areas of importance: ▪ Impacts on designated sites, in particular the River Moriston SAC. ▪ Not envisaging impacts on a wider scale. ▪ Information provided in the previous application for the Operational Development and for the Druim Ba scheme (15/03998/FUL). ▪ Deer Management Plan to determine where they are going if they are pushed off the Site during construction. ▪ NVC surveys for the development area.	Impacts on designated nature conservation sites and other ecological features are detailed in section 5.9. Cumulative impacts on a wider scale (e.g. within 10km of the Proposed Development) are discussed in section 5.13. Information from the Operational Development and the Druim Ba scheme have been considered as part of the baseline in section 5.6. Ornithological features for the Druim Ba scheme are considered in Chapter 6 (Ornithology). A deer management plan is provided as Appendix 5.6 in conjunction with the Operational Development

Consultee and Date	Scoping/Other Consultation	Information Provided to Consultee	Response	Action Taken
				deer management plan provided as Appendix 5.8. NVC surveys were undertaken and the results detailed in section 5.6 and Appendix 5.1.
NS 23 August 2019	EIA Scoping Opinion	EIA Scoping Report	Bat surveys should follow the latest guidance as published in 2019. Please note the number of detectors required to survey a site of this size and scale.	Bat survey methodology is provided in Appendix 5.3, which also details the issues encountered that led to slight deviations from the guidance.
			NS's Carbon & Peatland Map 2016 identifies that much of this proposal is located within 'Class 1 or 2 Nationally important carbon-rich soils, deep peat and priority peatland habitat'. The EIA Report should demonstrate that any significant effects have been substantially overcome by siting, design or other mitigation. We advise that this may be difficult to achieve and could result in an objection from NS. Details of all mitigation, including a peatland management plan and a habitat management plan should be included in the EIA Report.	The layout of the Proposed Development has, as far as possible, been designed to avoid habitats of highest ecological importance and highest sensitivity to impacts (discussed further in section 5.8). This was considered by this assessment to include high-quality, near-natural and active peatlands, where possible. A peatland condition assessment was undertaken in order to inform the layout of the Proposed Development (discussed

Consultee and Date	Scoping/Other Consultation	Information Provided to Consultee	Response	Action Taken
				further in Chapter 2 (Design Iteration and Proposed Development)). The full results of the peatland condition assessment are provided in Appendix 5.5 and summarised in section 5.6. Mitigation measures are discussed in section 5.8 and section 5.10. Peatland habitat management issues are dealt with in the outline habitat management plan provided in Appendix 5.7.
NS 22 April 2020	Consultation	Bat survey methodology, results and conclusions.	Agreed that no further bat surveys were required to inform the EIA Report given the nature of the Site although the minimum requirements of the bat survey guidance were not met in terms of the duration of surveys and the number of detectors deployed.	No further action required. Information on bat survey methodology is provided in Appendix 5.3. Details on the bat species recorded on the Site are provided in section 5.6.
NS 22 January 2021	Consultation	Peatland condition assessment methodology and results.	NS is content with the overall approach, which has the potential to reduce impacts on areas of valued peatland, particularly in habitat mosaics such as occur at the Site. We would recommend that care is taken when assessing habitat value. Assessing condition using your assessment tool (The Heather Trust *et al.*, 2017) and assessing habitat quality against the SSSI Guidelines (JNCC, 1994) are two quite	As detailed in Appendix 5.5, the JNCC guidance (JNCC, 1994) has been used to classify peatland quality, which is based on factors such as species diversity and peat-forming ability i.e. whether the

Consultee and Date	Scoping/Other Consultation	Information Provided to Consultee	Response	Action Taken
			different things. Keeping them separate gives a clearer picture of their current value and their management requirements, with the SSSI Guidelines doing the former and the Condition Assessment tool doing the latter. Many SSSIs are in 'unfavourable condition', but this does not mean that they are of low, or no, value. In most cases it simply means that the management of certain areas needs to be adjusted to restore the habitat quality.	peatland is active or inactive. The Heather Trust guidance (The Heather Trust *et al*., 2017) has been used to categorise the condition of the peatland and inform any management measures required to improve the condition of the peatland i.e. whether the peatland has restoration potential.
			Another area of possible confusion relates to the term 'active' in the context of peat formation. A bog does not need to have a more or less continuous carpet of papillose bog-moss (*Sphagnum papillosum*), magellanic bog-moss (*S. magellanicum*) etc. to be 'active'. It requires 'a significant area of vegetation that is normally peat forming'. Red bog moss, is a perfectly respectable peat former as indeed is hare's tail cotton grass (*Eriophorum vaginatum*) and other typical bog species.	As detailed in Appendix 5.5, an active peatland was defined as a habitat that supported a significant area of peat-forming vegetation. As there is no guidance on what constitutes a significant area of peat-forming vegetation, significance of cover was based on surveyor experience and the JNCC Phase 1 habitat survey guidance (JNCC, 2010b) with respect to the classification of blanket and modified bog.

Consultee and Date	Scoping/Other Consultation	Information Provided to Consultee	Response	Action Taken
			Noting the mosaic nature of the Site, the Proposed Development should be designed to avoid damaging peatlands.	The layout of the Proposed Development has, as far as possible, been designed to avoid habitats of highest ecological importance and highest sensitivity to impacts. This was considered by this assessment to include high-quality, near-natural and active peatlands, where possible. Potential impacts and the required mitigation for peatland habitats are discussed in section 5.8, section 5.9 and section 5.10.
			We also make the following observations: ▪ The 'compartments' appear to be based solely on peat depths (peat predominantly >50cm). It might be helpful if they were defined by both peat depth and habitat. ▪ The condition of the compartments is assessed using the Peatland Condition Assessment (The Heather Trust *et al.*, 2017) and the SSSI Selection Guidelines for bogs (JNCC, 1994). It is not, however, clear how the criteria in these two very different documents are brought	The methodology of the peatland condition assessment is detailed in Appendix 5.5, including the use of compartments and the different guidance criteria. The JNCC guidance (JNCC, 1994) has been used to classify peatland quality, which is based on factors such as species diversity and peat-forming ability i.e. whether the

Consultee and Date	Scoping/Other Consultation	Information Provided to Consultee	Response	Action Taken
			together and interpreted in a consistent manner. ▪ In relation to determining whether an area is 'near-natural' in assessing peatland condition, it is not clear what effort goes into searching for different species of bog-moss (*Sphagnum sp*.), or what cover is required. Or indeed how the data is recorded. It may also be that 'supporting peat forming vegetation' is actually a more valuable and more easily determined attribute than 'near-natural'. ▪ The 'Summary' on page 12 acknowledges that comments relating to drainage, burning and past grazing are essentially speculative and could probably be removed without affecting the conclusions.	peatland is active or inactive. The Heather Trust guidance (The Heather Trust *et al*., 2017) has been used to categorise the condition of the peatland and inform any management measures required to improve the condition of the peatland i.e. whether the peatland has restoration potential. Figure 5.9 provides the compartments used in relation to the NVC habitats present on the Site. The information already gathered on the habitats and species present on the Site during Phase 1 habitat and NVC surveys was also taken into account, as detailed in Appendix 5.5. The comments on drainage, burning and past grazing have been left in Appendix 5.5 as they provide a useful overview of the Site.

Consultee and Date	Scoping/Other Consultation	Information Provided to Consultee	Response	Action Taken
THC 25 June 2019	Pre-Application Advice Pack	N/A	The key issues are: ▪ Designated sites – impacts on designated sites in particular the River Moriston SAC, which has connectivity to this proposal. ▪ Peat, priority peatland habitats and carbon rich soils - The Proposed Development includes these areas, the importance of which has been identified in SPP. An assessment of the impact of this proposal on this resource should be made and the EIA Report should contain details of any mitigation measures that have been incorporated to ensure the protection of the carbon rich soils, deep peat and priority peatland habitats. The assessment should consider and, if necessary, quantify any loss of this resource and any impacts on the functioning of the habitats associated with it.	Impacts on designated nature conservation sites and priority peatland are detailed in section 5.9. Mitigation measures are described in section 5.8 and section 5.10.
THC 23 August 2019	EIA Scoping Opinion	EIA Scoping Report	The EIA Report should provide a baseline survey of the bird and animal (mammals, reptiles, amphibians, etc) interests on the Site. It needs to be categorically established which species are present on the Site, and where, before a future application is submitted. Further the EIA Report should provide an account of the habitats present on the Site. It should identify rare and threatened habitats, and those protected by European or UK legislation, or identified in national or local BAPs. Habitat enhancement and mitigation measures should	Baseline surveys were undertaken in June 2019. The methodology of the baseline surveys undertaken on the Site are provided in Appendix 5.1, Appendix 5.3, Appendix 5.4 and Appendix 5.5. The results of these surveys are provided

Consultee and Date	Scoping/Other Consultation	Information Provided to Consultee	Response	Action Taken
			be detailed, particularly in respect to blanket bog, in the contexts of both biodiversity conservation and the inherent risk of peat slide. Details of any habitat enhancement programme (such as native- tree planting, stock exclusion, etc) for the Site should be provided. It is expected that the EIA Report will address whether or not the Proposed Development could assist or impede delivery of elements of relevant BAPs.	in section 5.6 and Appendix 5.1. Mitigation measures are provided in section 5.8 and section 5.10. Habitat enhancement opportunities are detailed in Appendix 5.7, including riparian woodland and montane scrub planting. Ornithology surveys are detailed in Chapter 6 (Ornithology). Peat slide risk is detailed in Chapter 10 (Geology and Soils).
			The EIA Report should provide a baseline survey of the plants (and fungi) and trees present on the Site to determine the presence of any rare or threatened species albeit it is accepted that the likelihood is low given the present land use of the Site.	Baseline surveys were undertaken in June 2019. The methodology of the baseline surveys undertaken on the Site are provided in Appendix 5.1, Appendix 5.3, Appendix 5.4 and Appendix 5.5. The results of these surveys are provided in section 5.6 and Appendix 5.1.

Consultee and Date	Scoping/Other Consultation	Information Provided to Consultee	Response	Action Taken
			The EIA Report should address the likely impacts on the nature conservation interests of all the designated sites in the vicinity of the Proposed Development. It should provide proposals for any mitigation that is required to avoid these impacts or to reduce them to a level where they are not significant. NS can also provide specific advice in respect of the designated site boundaries for SACs and on protected species and habitats within those sites. The potential impact of the development proposals on other designated areas such as SSSIs should be carefully and thoroughly considered and, where possible, appropriate mitigation measures outlined in the EIA Report.	Impacts on designated nature conservation sites are detailed in section 5.9. Mitigation measures are described in section 5.8 and section 5.10.
			If wild deer are present or will use the Site an assessment of the potential impact on deer will be required. This should address deer welfare, habitats and other interests.	Deer are present on the Site, therefore, impacts on deer welfare and the impacts of deer on habitats are discussed in section 5.9.
			The EIA Report needs to address the aquatic interests within local watercourses, including downstream interests that may be affected by the Proposed Development, for example increases in silt and sediment loads resulting from construction works; pollution risk/incidents during construction; obstruction to upstream and downstream migration both during and after construction; disturbance of spawning beds/timing of works; and other drainage issues.	The impacts on aquatic interests are discussed in section 5.9. Appendix 5.4 details the results of fish surveys undertaken on the Site. Consultation with the Ness District Salmon Fishery Board and the Ness and Beauly

Consultee and Date	Scoping/Other Consultation	Information Provided to Consultee	Response	Action Taken
			The EIA Report should evidence consultation input from the local fishery board(s) where relevant.	Fishery Trust has been undertaken and is described below.
			The EIA Report should include an assessment of the effects on GWDTEs.	The potential impacts on GWDTE are detailed in section 5.9.
THC 27 April 2021	Proposal of Application Notice (PAN) Response	PAN	Individual positioning of the turbines will be extremely important to avoid deep peat.	The avoidance of good quality habitats that are actively sequestering peat has been considered throughout the design process. A peatland condition assessment was undertaken in order to inform the layout of the Proposed Development and avoid these areas, where possible. The full results of the peatland condition assessment are provided in Appendix 5.5 and summarised in section 5.6.
			Can we ask the Applicant to replant trees on the estate? It would be good to look for compensation planting.	No trees would be felled as part of the Proposed Development, therefore, no compensatory tree planting is required. However, montane scrub and riparian planting

Consultee and Date	Scoping/Other Consultation	Information Provided to Consultee	Response	Action Taken
				have been included as enhancement proposals in the Outline Habitat Management Plan (OHMP) provided in Appendix 5.7.
SEPA 29 May 2019	PAM	N/A	We welcome the fact that the indicated layout includes 50m buffers to watercourses and water features. However, a further buffer may be required (1) above lochs, as impacts on lochs from sedimentation, should it reach them, are likely to be significant, and (2) where there are steep slopes adjacent to the watercourse.	Watercourse buffers are detailed in Chapter 9 (Hydrology and Hydrogeology).
			GWDTEs will inevitably be present and the layout and design of the Proposed Development must avoid impact on such areas.	The presence of GWDTEs is discussed in section 5.6 and an assessment of GWDTEs is provided in Chapter 9 (Hydrology and Hydrogeology). Potential impacts and mitigation are discussed in section 5.9 and section 5.10, respectively. The majority of the potential GWDTEs present on the Site are unlikely to be groundwater dependent due to the nature of the hydrological conditions on the Site.

Consultee and Date	Scoping/Other Consultation	Information Provided to Consultee	Response	Action Taken
SEPA 6 August 2019	EIA Scoping Opinion	EIA Scoping Report	The information outlined below must be submitted in support of the application: ▪ Map and assessment of impacts upon GWDTEs and buffers. ▪ Schedule of mitigation including pollution prevention measures. ▪ Decommissioning statement.	Two GWDTE figures are included to show the potential GWDTE and assessed GWDTE, as Figure 5.5 and Figure 5.6. Impacts on GWDTE are assessed in section 5.9 and in Chapter 9 (Hydrology and Hydrogeology). Mitigation measures are provided in section 5.8 and section 5.10. Decommissioning effects are considered in section 5.9 and section 5.11.
			We welcome the inclusion of the Phase 1 habitat plan within the scoping report and note that an NVC survey has also already been undertaken. The information currently provided suggests that there will be GWDTEs on the Site so we ask that the Applicant sends us a copy of the NVC results so that we can provide early advice on further assessment and proposed layout. At this stage, we are unable to provide a view on whether the potentially groundwater dependant habitats are actually groundwater dependant at this Site.	Updated NVC results were sent during the consultation process. SEPA provided a view that the potential GWDTEs recorded on the Site are unlikely to be groundwater dependent.
			GWDTEs are protected under the Water Framework Directive and therefore the layout and design of the Proposed Development must avoid impact on such areas. The following information must be included in the submission:	Two GWDTE figures are included to show the potential GWDTE and assessed GWDTE

Consultee and Date	Scoping/Other Consultation	Information Provided to Consultee	Response	Action Taken
			▪ A map demonstrating that all GWDTEs are outwith a 100m radius of all excavations shallower than 1m and outwith 250m of all excavations deeper than 1m and proposed groundwater abstractions. If micrositing is to be considered as a mitigation measure, the distance of survey needs to be extended by the proposed maximum extent of micrositing. The survey needs to extend beyond the Site boundary where the distances require it. ▪ If the minimum buffers above cannot be achieved, a detailed site-specific qualitative and/or quantitative risk assessment will be required. We are likely to seek conditions securing appropriate mitigation for all GWDTEs affected.	present on the Site, as Figure 5.5 and Figure 5.6.
SEPA 12 November 2020	Gatecheck Report Response	Gatecheck Report	The Applicant shared the phase 1 peat probing and NVC survey results with us back in June and we had a useful meeting then as well. However, a number of the issues we highlighted in our response then have not been addressed and we have not had an opportunity to provide pre-application advice to the current layout and the potential impacts it will have on the aspects of the environment in which we have an interest. Prior to the formal submission of the application, we would therefore strongly encourage the Applicant to consult us further on the project with, as a minimum, the following	Phase 2 peat probing and further surveys on peatland habitat condition have been undertaken to fully address all matters related to carbon rich soils, deep peat and peatland habitat as part of the design evolution. Details of these surveys are provided in Chapter 10 (Geology and

Consultee and Date	Scoping/Other Consultation	Information Provided to Consultee	Response	Action Taken
			three layout plans (or sets of layout plans – they must be at a scale where the information is easy to understand) showing all permanent and temporary works: (1) 50m buffers to watercourses, (2) NVC survey results, and (3) all peat probing results (showing the location of individual peat probes, colour coded for depth).	Soils), and Appendix 5.5, respectively. Potential impacts on NVC habitats are considered in section 5.9. NVC survey results are provided on Figure 5.4.
SEPA 17 December 2020	Consultation	NVC survey results and preliminary GWDTE assessment.	We are content that the M15c *Scirpus cespitosus-Erica tetralix* wet heath on the Site is very unlikely to be groundwater dependant in this setting and need not be considered as a constraint to development. We note that areas of other M15 habitat are a significant distance from infrastructure.	Areas of M15c are not considered further as a constraint with relation to groundwater dependency. These areas are considered further as wet heath as this habitat is included in Annex 1 of the EC Habitats Directive (European Commission, 1992).
			A couple of small areas of M11 *Carex demissa-Saxifraga aizoides* mire (which is potentially highly groundwater dependant) have been identified and the further information you provided on that aspect was helpful. We accept that the M11 is also not likely to be groundwater dependant in this setting, but it is a locally unusual wetland habitat and therefore warrants some protection. Please do show the location of these habitats on the final NVC and GWDTE maps. The southern "patch" seems to be more extensive so make sure the layout plan shows a small buffer between the end of the feature and the track and include in the GWDTE/wetland	The locations of M11 are shown on Figure 5.5 and Figure 5.6. Mitigation for avoiding impacts on this ecological feature are detailed in section 5.8 and section 5.10.

Consultee and Date	Scoping/Other Consultation	Information Provided to Consultee	Response	Action Taken
			mitigation proposals for maintaining local drainage patterns. In view of the above, we are content that a detailed qualitative GWDTE assessment is not required for this application.	
			I would encourage you to include two GWDTE figures in the final EIA Report – one showing potential GWDTE (as submitted now) and one with the M15c excluded, as that would help clearly demonstrate that GWDTE are not an issue.	Two GWDTE figures are included to show the potential GWDTE and assessed GWDTE, excluding the M15c, as Figure 5.5 and Figure 5.6.
		Peat probe depth and extrapolated peat depth maps and peat probe risk rating map.	It's good to see that the peat on this Site is generally shallow and avoiding deep peat is not a significant issue for this Site. Any good quality habitats that are thought to be actively sequestrating carbon should be protected from development.	The avoidance of high quality habitats that are actively sequestering peat has been considered throughout the design process. A peatland condition assessment was undertaken in order to inform the layout of the Proposed Development and avoid these areas, where possible. The full results of the peatland condition assessment are provided in Appendix 5.5 and summarised in section 5.6. Details of peat-probing surveys are provided in

Consultee and Date	Scoping/Other Consultation	Information Provided to Consultee	Response	Action Taken
				Chapter 10 (Geology and Soils).
Royal Society for the Protection of Birds (RSPB) 9 August 2019	EIA Scoping Opinion	EIA Scoping Report	Wind farms on sensitive peatlands and deep peat can significantly undermine the climate benefits of renewable energy and as such we welcome the commitment by the Applicant that turbines will be sited to avoid the areas of deeper peat as far as possible, and measures should be taken to minimise peat disturbance.	The Proposed Development has been designed to avoid impacts to sensitive peatlands and deep peat, as detailed in Chapter 2 (Design Iteration and Proposed Development) and in Appendix 5.5. Mitigation measure to minimise peat disturbance are discussed in section 5.8 and section 5.10.
			A suitable area of modified blanket bog should be identified and restored as compensation for the loss of any functioning blanket bog that cannot be avoided. Our experience of working on bog restoration shows that it is not possible to recreate this habitat from excavated, stored peat. The compensatory area should be assessed for suitability and agreed with the planning authority in consultation with NS. This should be discussed in the EIA Report.	Suitable areas for the damming an infilling of natural drainage channels in order to raise the water table and restore poorer-quality areas of peatland have been identified as compensation for the loss of functioning blanket bog. Peatland restoration requirements are detailed in section 5.10 and Appendix 5.7.
		EIA Scoping Report	The Proposed Development is within the catchments of the Allt Saigh and River Moriston. The latter is an SAC for which	Atlantic salmon were not recorded on the Site. Potential

Consultee and Date	Scoping/Other Consultation	Information Provided to Consultee	Response	Action Taken
Marine Scotland Science (MSS) 6 August 2019	EIA Scoping Opinion		Atlantic salmon (*Salmo salar*) is a qualifying feature. Salmon and trout are also listed as priority species for conservation in the Scottish Biodiversity List and, therefore, MSS advises that the potential impacts on both salmonid species are considered throughout the EIA Report.	impact on fish species are considered in section 5.9.
			Site characterisation surveys (including electrofishing surveys) should be undertaken to assess the water quality and the presence and abundance of fish species in watercourses within and downstream of the Proposed Development to enable an assessment of the potential impact on the water quality and fish populations. The results from these site characterisation surveys should be presented in the EIA Report along with a detailed description of proposed mitigation measures and monitoring programmes.	Habitat suitability and population baseline surveys were undertaken in August 2020 and are described in Appendix 5.4. Mitigation and monitoring measures are discussed in section 5.8 and section 5.10.
			Consider the potential cumulative impact of adjacent developments (operational and consented) on the water quality and fish populations, including the selection of control sites in the proposed monitoring programmes.	Cumulative impacts are considered in section 5.13. Monitoring requirements are detailed in section 5.10.
			Contact the Ness District Salmon Fishery Board and the Ness and Beauly Fisheries Trust, if not already done so, for further information and/or advice on local fish populations.	Contacted in May 2020, with their response included below.
Fisheries Management Scotland 18 July 2019	EIA Scoping Opinion	EIA Scoping Report	The Proposed Development falls within the district of the Ness District Salmon Fishery Board, and the catchments relating to the Ness and Beauly Fishery Trust. It is important that the	Contacted in May 2020, with their response included below.

Consultee and Date	Scoping/Other Consultation	Information Provided to Consultee	Response	Action Taken
			proposals are conducted in full consultation with these organisations.	
Ness District Salmon Fishery Board/Ness and Beauly Fisheries Trust 20 May 2020	Consultation	Fish survey specification.	We are happy with the comprehensive fish survey specification for the EIA Report.	Fish survey specifications are provided in Appendix 5.4.
			Looking ahead to post consent monitoring, it would be advisable to include an additional survey site further down the Allt Saigh at its confluence with Loch Ness. We suspect that the accessible reaches in this area may be utilised by spawning salmon and ferox trout (*Salmo ferox*). Likewise, an additional site on the River Moriston would be advisable given its importance for salmon and freshwater pearl mussel (*Margaritifera margaritifera*).	Monitoring requirements are detailed in section 5.10.

5.5 Assessment Methodology and Significance Criteria

5.5.1 With the exception of the impact assessment methodology set out from section 5.5.2 onwards, the methodologies for the desk study and field surveys are described in appendices to this chapter: Appendix 5.1 (habitats and protected species), Appendix 5.3 (bat surveys), Appendix 5.4 (fish surveys) and Appendix 5.5 (peatland condition assessment).

Impact Assessment Methodology

Criteria for Evaluating the Importance of Ecological Features

5.5.2 Habitats and species (i.e. ecological features) identified within the field study area have been assigned ecological values using the standard CIEEM scale that classifies ecological features within a defined geographic context (CIEEM, 2018). The classification uses recognised and published criteria (Ratcliffe, 1977 and Wray et al., 2010), where the ecological features are assessed in relation to their size, diversity, naturalness, rarity, fragility, typicalness, connectivity with surroundings, intrinsic value, recorded history and potential value. Table 5.2 describes the geographic frame of reference that has been used.

Table 5.2 – Geographic Conservation Importance

Importance	Examples
International	Internationally designated nature conservation sites including SACs, Ramsar sites, Biogenetic Reserves, World Heritage sites, Biosphere Reserves, candidate SACs and potential Ramsar sites; discrete areas which meet the published selection criteria for international designation but which are not themselves designated as such; or a viable area of a habitat type listed in Annex I of the Habitats Directive (European Commission, 1992), or smaller areas which are essential to maintain the viability of a larger whole. Resident or regularly occurring populations of species that may be considered at an international level, such as European Protected Species (EPS), the loss of which would adversely affect the conservation status or distribution of the species at an international level; or where the population forms a critical part of a wider population; or the species is at a critical phase of its life cycle.
National	Nationally designated nature conservation sites including SSSIs, National Nature Reserves (NNR), Marine Nature Reserves; discrete areas which meet the published selection criteria for national designation, but which are not designated as such; or areas of a habitat type identified in the UK Post-2010 Biodiversity Framework (UK Government, 2012). Resident or regularly occurring populations of species that may be considered at the national level, such as nationally important populations of an EPS or species listed in Schedules 5 and 8 of the Wildlife and Countryside Act (UK Government, 1981), the loss of which would adversely affect the conservation status or distribution of the species across Britain or Scotland; or where the population forms a critical part of a wider population; or the species is at a critical phase of its life cycle.

Importance	Examples
Regional	Given its size, the total area covered by THC is considered to represent the region within which the project is situated. High quality areas of a habitat type identified in the Highland BAP (THC, 2015b) or smaller areas of such habitat which are essential to maintain the viability of a larger whole. Resident or regularly occurring populations of species that may be considered at an international or national level, the loss of which would adversely affect the conservation status or distribution of the species across the region; or where the population forms a critical part of a wider population; or the species is at a critical phase of its life cycle.
County	The county level importance for this assessment relates to Inverness-shire. Of similar size and with a largely overlapping footprint is the Northern Highlands Natural Heritage Zone. Either is an appropriate delineation of county level with the key being that both include the surrounding uplands, particularly the wider Monadhliath mountains area. Designated nature conservation sites at the local authority level in Scotland including statutory Local Nature Reserves (LNR) and non-statutory Local Nature Conservation Sites; or discrete areas which meet the published selection criteria for designation, but which are not designated as such. Resident or regularly occurring populations of species that may be considered at the international, national or county level, the loss of which would adversely affect the conservation status or distribution of the species across the county area.
Local	The local area for this assessment is considered to be the sparsely wooded uplands of Balmacaan, Levishie and Dundreggan Forests between Glen Urquhart, Glen Moriston and Guisachan Forest. Features of local value include areas of habitat or populations/communities of species considered to appreciably enrich the habitat resource within the immediate surrounding area, for example, species-rich hedgerows. Resident or regularly occurring populations of species that may be considered at an international, national, county or local level, the loss of which would adversely affect the conservation status or distribution of the species across the local area; or where the population forms a critical part of a wider population; or the species is at a critical phase of its life cycle.

5.5.3 A wide range of sources can be used to assign importance to ecological features, including legislation and policy. In the case of designated nature conservation sites, their importance reflects the geographic context of the designation. For example, sites designated as SACs are recognised as being of importance at an international level. Ecological features not included in legislation and policy may also be assigned importance due to, for example, local rarity or decline, or provision of

a functional role for other ecological features. Professional judgement is used to assign such importance.

Characterising Impacts

5.5.4 The potential impacts upon ecological features have been considered in relation to the Proposed Development. The impacts have been assessed without consideration of any specific mitigation measures that will be employed. The assessment of likely ecological impacts has been made in relation to the baseline conditions of the field study area. The likely impacts of development activities upon ecological features have been characterised according to several variables detailed in Table 5.3.

Table 5.3 – Impact Characterisation

Parameter	Description
Direction	Impacts are either adverse (negative) or beneficial (positive).
Magnitude	This is defined as high, moderate, low or negligible, with these being classified using the following criteria: High: Total/near total loss of a population due to mortality or displacement or major reduction in the status or productivity[2] of a population due to mortality or displacement or disturbance. Total/near total loss of a habitat. Moderate: Partial reduction in the status or productivity of a population due to mortality or displacement or disturbance. Partial loss of a habitat. Low: Small but discernible reduction in the status or productivity of a population due to mortality or displacement or disturbance. Small proportion of habitat lost. Negligible: Very slight reduction in the status or productivity of a population due to mortality or displacement or disturbance. Reduction barely discernible, approximating to the 'no change' situation. Slight loss of habitat that is barely discernible from the habitat resource as a whole.
Extent	The area over which the impact occurs.
Duration	The time for which the impact is expected to last prior to recovery of the ecological feature or replacement of the feature by a similar resource (in terms of quality and/or quantity). This is expressed as a short-term, medium-term, or long-term effect relative to the ecological feature that is impacted.
Reversibility	Irreversible impacts: permanent changes from which recovery is not possible within a reasonable time scale or for which there is no reasonable chance of action being taken to reverse it. Reversible impact: temporary changes in which spontaneous recovery is possible or for which effective mitigation.

[2] *Status is defined as the conservation status of the species and indicates whether the species is likely to become extinct in the near future. Productivity is defined as the rate of population growth.*

Parameter	Description
	(avoidance/cancellation/reduction of effect) or compensation (offset/recompense/offer benefit) is possible.
Frequency and Timing	The number of times an activity occurs will influence the resulting effect (if appropriate, described as low to high and quantified, where possible). The timing of an activity or change may result in an impact if it coincides with critical life-stages or seasons e.g. the breeding season.

5.5.5 The assessment only describes those characteristics relevant to understanding the ecological impact and determining the significance of the effect.

Assessment of Potential Effect Significance

5.5.6 An effect is either significant or not significant. For the purpose of EcIA, a significant effect is an effect that either supports or undermines biodiversity conservation objectives for important ecological features or for biodiversity in general. In broad terms, significant effects encompass impacts on the structure and function of defined sites, habitats or ecosystems and the conservation status of habitats and species (including extent, abundance and distribution) (CIEEM, 2018). Significant effects are assessed with reference to the geographical importance of the ecological feature. However, the scale of significance of an effect may not be the same as the geographic context in which the feature is considered important. For example, a significant effect on a species protected by national legislation does not necessarily equate to a significant effect on its national population.

5.5.7 For the purposes of EcIA, apart from in exceptional circumstances, a significant effect, as defined by The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations (UK Government, 2017b) is only considered to be possible where the feature in question is considered to be of regional, national or international importance. That is not to say that impacts from the Proposed Development could not result in significant effects on features of county or local importance, simply that those effects are not likely to be significant under EIA Regulations, unless the effect is likely to undermine biodiversity conservation objectives (such as local policies for no net loss) or biodiversity in general. Whether an effect at local or county importance is considered to be significant or not significant under the EIA Regulations is made clear in the impact assessment of each ecological feature.

Requirements for Mitigation

5.5.8 Mitigation and/or compensation is proposed for all effects considered significant under the EIA Regulations. Where appropriate, as part of additional good practice, mitigation and/or compensation may be proposed for significant effects on features of county or local importance, or where required in relation to protected species where legislation may require actions to protect populations or individuals. Where there are no significant effects on features, and where no mitigation and/or compensation is required under the EIA Regulations, further measures may still be proposed as part of additional good practice for the purpose of enhancing the biodiversity in the field study area.

Assessment of Cumulative Effect Significance

5.5.9 Cumulative effects can result from individually insignificant but collectively significant actions taking place over a period of time or concentrated in a location. Cumulative effects are particularly important in EcIAs as many ecological features are already exposed to background levels of threat or pressure and may be close to critical thresholds, where further impacts could cause irreversible decline and significant cumulative effects. Further impacts can also make habitats and species more vulnerable or sensitive to change.

5.5.10 Developments included in the cumulative effects assessment are the following types of future development within the same ZOI:

- Proposals for which consent has been applied;
- Projects that have been granted consent but have not yet been started or have been started but are not yet completed (i.e. under construction);
- Proposals that have been refused permission but are subject to appeal; and
- Proposed projects that will be implemented by a public body but for which no consent is needed from a competent authority.

5.5.11 It may also be necessary to consider developments that are operational but whose full environmental effects are not yet known and cannot be accounted for in the baseline.

5.5.12 The ZOI for cumulative effects is considered to be 10km for ecological features, primarily bat species, due to the distance they are able to travel.

Consultation

5.5.13 Section 5.4 provides full details of the consultation undertaken.

Study Areas

5.5.14 The field study area for this assessment includes the area within the Site boundary and a buffer distance of up to 250m beyond the Site boundary, as shown on Figure 5.2. There is a separate desk study area, within which desk study information was gathered. The desk study area includes the area within the Site boundary and a 10km buffer around the Site boundary, as shown on Figure 5.1.

Limitations to Assessment

5.5.15 It should be noted that the availability and quality of the data obtained during desk studies is reliant on third party responses and recorders. This varies from region to region and for different species groups. Furthermore, the comprehensiveness of data often depends on the level of coverage, the expertise and experience of the recorder and the submission of records to the local recorder.

5.5.16 The habitat and faunal surveys provide a snapshot of ecological conditions and do not record plants or animals that may be present in the field study area at different times of the year. The absence of a particular species cannot definitely be confirmed by a lack of field signs and only concludes that an indication of its presence was not located during the survey effort. However, surveys for faunal species were undertaken during optimal periods for locating field signs.

5.5.17 Although the bat surveys were not able to fully follow the guidance with regards to duration of survey and number of detectors deployed, there are not considered to be any limitations on the bat data collected due to the nature of the Site making the habitat less suitable for use by large numbers of bat species. This was agreed in consultation with NS, as detailed in Table 5.1. The deviation from the guidance is described in Appendix 5.3.

5.5.18 Due to the remote nature of the field study area, surveys were not impacted by coronavirus restrictions as local surveyors were able to travel separately to the field study area and maintain social distancing.

5.6 Baseline Conditions

Current Baseline

Desk Study

Land Use and Management Practices

5.6.1 Current land use and management practices in the field study area involve sheep grazing in summer and deer stalking in autumn and winter. Deer are generally present on the Operational Development and on the area of the Proposed Development during daylight hours, with movement to the south of the Allt Saigh towards their preferred grazing fields at night. Deer are fed during the winter in the field study area, including locations along the main access track to the Site and close to the boundary of Levishie Wood. Deer stalking is undertaken on foot and does not take place from vehicles. Further information on deer numbers is provided in Appendix 5.6.

Statutory Designated Nature Conservation Sites

5.6.2 No statutory designated nature conservation sites for ecological features occur within the Site boundary of the Proposed Development. Designated nature conservation sites related to ornithology are considered in Chapter 6 (Ornithology). SSSIs notified for geological features are discussed in Chapter 10 (Geology and Soils). Designated nature conservation sites of ecological importance located within 10km of the Proposed Development are shown on Figure 5.1. Table 5.4 details the relevant designated nature conservation sites that have potential connectivity with the Proposed Development. All other designated nature conservation sites are detailed in Appendix 5.1.

Table 5.4 – Designated Nature Conservation Sites

Site Name	Qualifying Feature(s)	Distance from Proposed Development at Closest Point	Connectivity with Proposed Development
Levishie Wood SSSI	Upland birch-juniper woodland	1.40km to the south	Separated from the Proposed Development by a range of hills and open moorland, therefore no direct impacts on the qualifying feature are considered to be possible. Indirect impacts may be possible from the displacement of deer.
River Moriston SAC	Freshwater pearl mussel Atlantic salmon	2.51km to the south	Separated from the Proposed Development to the north by the main A887 road, hills, open moorland and forestry, therefore no direct impacts on the qualifying features are considered to be possible. The existing Livishie Hydro access track in the south-west of the Site occurs 167m from a small, unnamed

Site Name	Qualifying Feature(s)	Distance from Proposed Development at Closest Point	Connectivity with Proposed Development
			lochan within the Operational Development. However, the lochan is separated from the Proposed Development by a small ridge and level, open moorland, with the small ridge acting as a barrier to surface water movement. This lochan also drains into the Allt Loch a Chrathaich, which was found to carry almost no water due to abstraction, as discussed in Appendix 5.4. As a result, indirect impacts are not considered possible via this watercourse. Some connectivity exists from construction of the temporary construction compound within the River Moriston catchment, therefore indirect impacts may be possible.

Non-statutory Designated Nature Conservation Sites

5.6.3 No areas of ancient woodland or woodland on the semi-natural woodland inventory (SNH, 2018b) occur where works are proposed, as shown on Figure 5.1, therefore direct impacts are not considered possible. Areas of ancient woodland and semi-natural woodland occur within the field study area along the existing access track to the Operational Development, therefore, indirect impacts are possible on these ecological features. Other areas of ancient woodland or woodland on the semi-natural woodland inventory are separated from the field study area by hills, forestry and open moorland, therefore direct and indirect impacts are not considered possible on these features. No other non-statutory designated nature conservation sites occur in the desk study area.

Highlands BAP

5.6.4 The Proposed Development and study areas are located in the Highlands BAP area (THC, 2015b). The BAP covers the period of 2015-2020. The priority habitats and species that are present in the Highlands and included in the BAP and are considered to be relevant to the Proposed Development based on the habitats and species recorded in the field study area are detailed in Table 5.5.

Table 5.5 – Relevant Habitats and Species Included in the Highlands BAP (THC, 2015b)

Habitat	Species
Peatland, particularly blanket bog and wet heath	Common toad (*Bufo bufo*)
	European eel (*Anguilla anguilla*)
	Brown trout
	Water vole
	Wildcat
	Mountain hare (*Lepus timidus*)
	Brown hare (*L. europaeus*)
	Otter
	Pine marten
	Common lizard (*Zootoca vivipara*)
	Small pearl-bordered fritillary (*Boloria selene*)
	Small heath (*Coenonympha pamphilus*)

Operational Development EIA Report 2012

5.6.5 The Operational Development is located immediately to the west of the Proposed Development. The majority of the study area was comprised of wet heath and blanket bog, with dry heath, marshy grassland, semi-natural broadleaved woodland, semi-improved acid grassland and semi-improved neutral grassland in smaller proportions. Three UK BAP (JNCC, 2010a) plant species were recorded, and these were common juniper (*Juniperus communis*), field gentian (*Gentianella campestris*) and lesser butterfly orchid (*Platanthera bifolia*).

5.6.6 The study area was assessed as having low habitat suitability for bat species, with small numbers of common pipistrelle, soprano pipistrelle, Daubenton's bat and Natterer's bat recorded using a small proportion of the study area. Pine marten and red squirrel (*Sciurus vulgaris*) were recorded in woodland to the south of the Operational Development. Water vole burrows were concentrated in narrow riparian grassland habitat around the southern end of Loch a Chrathaich and an unnamed burn into Loch Carn Taruinn Beag. There were few signs of otter, with no protected dwellings recorded. Red deer (*Cervus elaphus*), roe deer (*Capreolus capreolus*) and mountain hare were common.

5.6.7 Common frog (*Rana temporaria*), palmate newt (*Lissotriton helveticus*) and common lizard were common and widespread, with rare records of common toad and adder (*Vipera berus*).

5.6.8 The majority of the watercourses provided poor quality fish habitat, with only brown trout recorded in low densities. No freshwater pearl mussels were recorded.

5.6.9 The Operational Development was rich in dragonflies and damselflies, such as azure hawker (*Aeshna caerulea*) and large red damselfly (*Pyrrhosoma nymphula*). Few butterfly species were recorded but included large heath (*Coenonympha tullia*) and small heath.

Refused Druim Ba Scheme EIA Report 2015

5.6.10 Druim Ba wind farm was rejected in 2011 and 2018. The wind farm would have been located 14.7km to the north-east of the Proposed Development. The majority of the study area was comprised of coniferous woodland plantation, with small areas of moorland.

5.6.11 Water vole activity was recorded throughout the study area. Small populations of pine marten, otter, badger (*Meles meles*), adder and common lizard utilised the study area. No wildcats were recorded.

5.6.12 Bat surveys recorded the presence of common pipistrelle, soprano pipistrelle, Daubenton's bat and brown long-eared bat in low numbers, with few opportunities present for roosting.

5.6.13 Small numbers of brown trout and three-spined stickleback were recorded in watercourses draining the study area.

Field Surveys

5.6.14 Full details of the results of the field surveys undertaken for the Proposed Development are provided in Appendix 5.1. Photographs taken during surveys are provided in Appendix 5.2. Summarised results are provided in this chapter.

Phase 1 Habitats

5.6.15 The dominant habitats present in the field study area are wet heath, blanket bog and wet modified bog, as shown on Figure 5.2. Target notes are shown on Figure 5.3 and described in Appendix 5.1. All potentially sensitive habitats recorded in the field study area are detailed in Table 5.6.

Table 5.6 – Habitat Types

Habitat Type	Area (ha)
Blanket bog	418.99
Wet modified bog	79.88
Wet heath	875.84
Dry heath	0.22
Unimproved acid grassland	2.07
Marshy grassland	1.12
Standing water	135.20
Total	**1513.32**

5.6.16 Running water habitat is also present in the field study area, including the Allt Saigh, as shown by Photo 1 in Appendix 5.2, and watercourses flowing into and out of the lochs and lochans. The Allt Saigh is also a component of the Livishie hydro scheme, which is part of the larger Great Glen hydro scheme (Scottish and Southern Energy (SSE), 2021). A number of watercourse crossings occur as part of the Proposed Development and further details are provided in Chapter 9 (Hydrology and Hydrogeology) and Appendix 9.1.

5.6.17 Common juniper was recorded in several locations across the field study area, as shown by Target Notes 19 and 61 on Figure 5.3.1, Target Notes 37, 43 and 51 on Figure 5.3.2, Target Notes 35, 45, 68-70 and 98 on Figure 5.3.3 and Target Note 2 on Figure 5.3.4. Dwarf juniper (*Juniperus communis nana*) was also recorded, as shown by Target Notes 89 and 90 on Figure 5.3.4.

5.6.18 A single violet coral fungus (*Clavaria zollingeri*) was recorded close to the Allt Saigh between Loch an Dubhair and Loch na Feannaig, as shown by Target Note 92 on Figure 5.3.3 and Photo 9 in Appendix 5.2.

5.6.19 No trees are present in the field study area where works would occur. Trees present outwith the area where works would occur are detailed in Appendix 5.1 and in paragraph 5.6.2.

5.6.20 No invasive non-native plant species were recorded during field surveys.

GWDTE

5.6.21 The habitats classified during NVC surveys are shown on Figure 5.4. The NVC results were used to determine the potential groundwater dependency of the habitats present in the field study area. Six potential moderate GWDTEs were recorded, as shown on Figure 5.5, with their NVC types shown on Figure 5.4. A further two small areas of potential high groundwater dependency were also recorded as Target Notes 1, 2a and 2b on Figure 5.5. Table 5.7 provides further information on the potential GWDTEs recorded in the field study area. Appendix 5.1 provides full details on the GWDTE target notes.

Table 5.7 – Potential GWDTEs

NVC Community	Groundwater Dependency
M11 *Carex demissa-Saxifraga aizoides* mire	High
M15 *Scirpus cespitosus-Erica tetralix* wet heath	Moderate
M15a *Scirpus cespitosus-Erica tetralix* wet heath, *Carex panicea* sub-community	
M15b *Scirpus cespitosus-Erica tetralix* wet heath, *Cladonia sp.* sub-community	
M15c *Scirpus cespitosus-Erica tetralix* wet heath, typical sub-community	
M15d *Scirpus cespitosus-Erica tetralix* wet heath, *Vaccinium myrtillus* sub-community	
M25a *Molinia caerulea-Potentilla erecta* mire, *Erica tetralix* sub-community	

5.6.22 Further information on the hydrological and hydrogeological sensitivity and an assessment of the groundwater dependency of the potential GWDTEs is provided in Chapter 9 (Hydrology and Hydrogeology). In consultation with SEPA, the M15c areas were assessed as unlikely to be groundwater dependent due to the nature of the hydrological conditions on the Site. As a result, areas of M15c are not considered further in relation to groundwater dependency. The assessed GWDTEs are shown on Figure 5.6 and detailed in Table 5.8, which discusses the likely connectivity of the assessed GWDTEs with the Proposed Development.

Table 5.8 – Assessed GWDTEs

NVC Community	Groundwater Dependency	Connectivity with Proposed Development	Area (ha)
M11 *Carex demissa-Saxifraga aizoides* mire	High	Although the M11 is also not likely to be groundwater dependant in this setting, it is a locally unusual wetland habitat. The first M11 area (Target Note 1) occurs on the proposed access track and borrow pit search area to the north of Turbine 11, therefore direct and indirect impacts are possible. The second M11 area (between Target Note 2a and Target Note 2b) occurs 21.4m uphill to the west of the proposed access track south of Turbine 11, therefore	Too small to map.

NVC Community	Groundwater Dependency	Connectivity with Proposed Development	Area (ha)
		direct and indirect impacts are not considered to be possible.	
M15 *Scirpus cespitosus-Erica tetralix* wet heath	Moderate	No areas of M15 occur within the 100m or 250m GWDTE buffers around the Proposed Development, therefore direct and indirect impacts are not considered to be possible.	164.59
M15a *Scirpus cespitosus-Erica tetralix* wet heath, *Carex panicea* sub-community		A single area of M15a occurs within the 250m GWDTE buffer around the existing Livishie Hydro access track and a Hydro borrow pit search area in the south of the Site. The area is located 63.79m uphill from the Proposed Development at its closest point, therefore direct and indirect impacts are not considered to be possible.	8.43
M15b *Scirpus cespitosus-Erica tetralix* wet heath, *Cladonia sp.* sub-community		Two areas of M15b occur within the 100m and 250m GWDTE buffers around the Proposed Development. The area in the west occurs 48.32m from the proposed access track and the area in the centre of the Site occurs 175.03m from a proposed turbine hardstanding at Turbine 9. Both areas are located downhill from the Proposed Development, therefore indirect impacts may be possible.	68.30
M15d *Scirpus cespitosus-Erica tetralix* wet heath, *Vaccinium myrtillus* sub-community		A single area of M15d occurs within the 100m and 250m GWDTE buffers around the existing Livishie Hydro access track and two Hydro borrow pit search areas to the south of Turbine 16 in the south of the Site. The area is located 53.1m uphill from the Proposed Development at its closest point, therefore direct and indirect impacts are not considered to be possible.	17.76
M25a *Molinia caerulea-Potentilla erecta* mire, *Erica tetralix* sub-community		No areas of M25a occur within the 100m or 250m GWDTE buffers around the Proposed Development, therefore direct and indirect impacts are not considered to be possible.	1.12

Peatland Condition

5.6.23 The full results of the peatland condition assessment are provided in Appendix 5.5. The majority of the peatland surveyed fell into the moderate quality (modified condition) category, with only nine compartments out of 36 containing high quality (near-natural condition) peatland. The shallower peat present in the field study area is dominated by wet heath, with occasional minor patches of other communities such as marshy grassland and acid grassland. The only species recorded in abundance in bog areas was red bog-moss (*Sphagnum capillifolium*), a species that is also common in wet heath. The main exception was where bog pools were recorded, with flat-topped bog-moss (*Sphagnum fallax*) and, more rarely, feathery bog-moss (*Sphagnum cuspidatum*). The presence of papillose bog-moss within areas was found to be a good indicator that uncommon species were present. As such, the bog areas where it was recorded are considered to be close to near-natural condition and are considered to be of higher quality than the bog areas without this species.

5.6.24 None of the peatland present in the field study area are considered to be of a similar high quality to those peatlands in the surrounding area that are notified as SSSIs and of natural condition.

Protected Terrestrial Mammals

5.6.25 Target notes for protected and notable terrestrial mammals are shown on Figure 5.3 and described in Appendix 5.1. The following protected or notable terrestrial mammals were recorded during field surveys:

- A single otter spraint was recorded at the dam on the Allt Saigh, as shown by Target Note 29 on Figure 5.3.3. Otter feeding signs were also recorded further west on the Allt Saigh, as shown by Target Note 32 on Figure 5.3.3. No protected dwellings were recorded in the field study area.
- Water vole burrows were recorded on the majority of the watercourses in the field study area, including the Allt Saigh and watercourses flowing to or from lochs and lochans, such as Loch nam Brathain, Loch Liath and Loch Carn Tarsuinn, as shown by Target Notes 16, 60, 62 and 96 on Figure 5.3.1, Target Notes 36, 38-42 and 93-95 on Figure 5.3.2, Target Notes 27-28, 30-34 and 97 on Figure 5.3.3, and Target Notes 5, 7 and 83-87 on Figure 5.3.4.
- No signs of wildcat or pine marten were recorded during surveys. The habitats present in the field study area are not suitable for supporting badger or red squirrel as they consist primarily of wet, open moorland and a single area of young, planted trees. More suitable habitat, such as mature coniferous woodland, occurs outwith the field study area.
- A single mountain hare was recorded near an access track of the Operational Development, as shown by Target Note 88 on Figure 5.3.4.
- Three red deer were recorded on Carn an Tuairneir, as shown by Target Note 82 on Figure 5.3.3.

Bat Species

5.6.26 Full details of the results of the bat surveys are provided in Appendix 5.3. The main findings of the surveys are summarised below.

5.6.27 Five bat species comprising common pipistrelle, soprano pipistrelle, brown long-eared bat, Daubenton's bat and Natterer's bat were recorded in the field study area. Table 5.9 provides a summary of the bat activity recorded at each detector per month. The detector locations are shown on Figure 5.7. No roosting locations were recorded in the field study area. The most common bat species in the field study area were soprano pipistrelle and common pipistrelle.

Table 5.9 – Summary of Bat Activity in 2019 from Static Detectors Within Field Study Area

Detector Location	Number of Bat Passes[3]			Total Number of Passes per Detector
	Early Survey Period	Middle Survey Period	Late Survey Period	
BE_6	0	0	1 CP 1 DB	**2**
BE_7	0	0	4 CP 8 SP 1 BLE	**13**
BE_10	7 PS	41 PS 29 CP 54 SP 3 DB	2 SP 4 DB	**140**
BE_11	1 CP	0	0	**1**
BE_16	0	0	14 CP 2 SP 1 DB 1 BLE 1 NB	**19**
BE_19	0	0	1 CP 3 SP 3 DB	**7**
BE_24	0	0	1 DB	**1**
BE_25	0	0	1 BLE	**1**
Total Number of Passes per Survey Period	**8**	**127**	**49**	

5.6.28 Overall bat activity in the field study area was low to low/moderate, except for pipistrelle species at detector BE_10. Bat activity at detector BE_10 had 19 nights (36.54%) of low activity, 11 nights (21.15%) of low/moderate activity, 15 nights (28.85%) of moderate activity and 7 nights (13.46%) of moderate/high activity for pipistrelle species across the survey season.

Protected Aquatic Species

5.6.29 Full details of the fish habitat and population survey results are provided in Appendix 5.4. The main findings of the surveys are summarised below.

[3] Note on species abbreviations in table: CP = Common pipistrelle, SP = Soprano pipistrelle, PS = Pipistrelle species, BLE = Brown long-eared bat, NB = Natterer's bat and DB = Daubenton's bat.

5.6.30 The fish habitat survey identified the largest expanse of good quality habitat in the Allt Saigh, with good quality habitat also present in the outflow from Lochan an Ruighe Dhuibh. Variable habitat quality is present in the outflow from Loch Liath, with poor habitat quality present in the other watercourses surveyed.

5.6.31 The electric fishing survey recorded the following three species in the field study area:

- brown trout;
- three-spined stickleback; and
- common minnow.

5.6.32 Brown trout population density was generally good across the field study area. A single three-spined stickleback was recorded. Brown trout and three-spined stickleback are likely to be the only native fish species present in the field study area, with common minnow likely introduced by anglers.

Reptiles and Amphibians

5.6.33 Common lizards were recorded throughout the field study area, as shown by Target Notes 1, 8-9, 13-14 and 65 on Figure 5.3.4, Target Notes 47-50, 53 and 56-57 on Figure 5.3.2, and Target Note 58 on Figure 5.3.1.

5.6.34 Common frog tadpoles were recorded in the outflow of an unnamed lochan, a small burn draining into Loch a Chrathaich and near the outflow of Loch nam Brathain, as shown by Target Note 6 on Figure 5.3.4, Target Note 26 on Figure 5.3.1, and Target Note 54 on Figure 5.3.2, respectively.

5.6.35 A single palmate newt was recorded in a small burn draining into Loch a Chrathaich, as shown by Target Note 23 on Figure 5.3.1.

Other Notable Species

5.6.36 Small pearl-bordered fritillary butterflies were recorded throughout the field study area, as shown by Target Note 3 on Figure 5.3.4 and Target Note 44 on Figure 5.3.3.

5.6.37 Unidentified dragonfly species were recorded around a small, unmapped pond, as shown by Target Note 10 on Figure 5.3.4.

Future Baseline

5.6.38 The future baseline of the field study area under the "do nothing" scenario is unlikely to change significantly in the absence of the Proposed Development.

5.6.39 The peatland habitats would continue to be impacted and shaped by weather and animal erosion. It is considered possible that the areas of blanket bog could continue to degrade, depending on the fluctuating water table, increasing the area of wet modified bog and wet heath.

5.6.40 The main factor dictating the species present is the land use of the habitats in the field study area. The main land uses are upland grazing for sheep, and moorland managed for deer stalking, and the Operational Development. Climate change may also have an effect on species distribution. The land use practices are expected to continue unchanged under the "do nothing" scenario. As such, grazing pressure on the habitats from sheep and deer will likely remain the same. Therefore, the distribution of species present within the field study area is unlikely to change significantly in the future.

5.7 Features Brought Forward for Assessment

Summary of Important Ecological Features

5.7.1 A summary of the ecological features identified as being sensitive to the potential impacts of construction, operation or decommissioning of the Proposed Development and that have been 'scoped-in' to the assessment is given in Table 5.10, together with the rationale for their inclusion.

Table 5.10 – Summary of Important Ecological Features

Feature	Importance	Rationale
River Moriston SAC	International	SACs are designated as internationally important sites for nature conservation for habitats and non-avian species. Potential connectivity with the Proposed Development exists through one watercourse in the west of the field study area.
Levishie Wood SSSI	National	The SSSI contains one of the largest examples of birch-juniper woodland in Inverness-shire. Juniper has experienced significant decline in the UK and is also a UK BAP (JNCC, 2010a) species. As a result, the SSSI is considered to be of national importance.
Ancient and semi-natural woodland	Regional	Ancient woodland contains remnants of Scotland's original forests, preserving the integrity of ecological processes in the soil and its associated biodiversity. Once destroyed, ancient woodland cannot be recreated. Although no legislation specifically protects ancient woodland, there is a strong presumption against removing ancient semi-natural woodland or plantations on ancient woodland sites (Scottish Government, 2014). Ancient woodland is present in large, scattered areas in the Highlands and is considered to be of regional importance.
Peatlands (blanket bog, wet modified bog and wet heath)	Regional (blanket bog) County (wet modified bog and wet heath)	These habitat types are included in Annex 1 of the EC Habitats Directive (European Commission, 1992) and the Highlands BAP (THC, 2015b) and are sensitive to environmental change, such as changes to hydrology, carbon function, species composition and nutrient status. Much of the peatland habitat in the UK is in poor condition due to drainage, grazing pressure and damage from peat extraction. The examples of blanket bog within the field study area are of varying condition and subject to modification but do include areas of increased diversity. The blanket bog present in the field study area is not of the highest quality and there are peatlands within the Highlands in better condition. Although the blanket bog in the field study area has continuous units that are greater than 25ha, supports peat-forming vegetation, has a low frequency of drains/peat cutting, a natural surface pattern and an absence of woodland/scrub invasion, it does not support indicators of national importance (NS, 2021), such as an abundance of bog-moss (*Sphagnum sp*.) rich ridges and hummocks or hollows with brown beak-sedge (*Rhynchospora fusca*). As such, this feature is considered to be of regional importance.

Feature	Importance	Rationale
		The wet modified bog within the field study area lacks significant peat-forming vegetation and is generally poorer quality, with low species diversity and rare or absent bog-moss (*Sphagnum sp.*). However, this habitat has the potential to return to active blanket bog, therefore this feature is considered to be of county importance. The wet heath within the field study area is also of varying condition, with some areas supporting peat-forming vegetation and other areas dominated by common heather (*Calluna vulgaris*) and deer grass (*Trichophorum cespitosum*). As such, this feature is also considered to be of county importance.
GWDTEs (M11 and M15b)	County	GWDTEs are sensitive to changes in hydrology and hydrogeology and are a priority under the Water Environment and Water Services (Scotland) Act (UK Government, 2003). The examples of these habitat types in the field study area are generally in good condition, with increased diversity and naturalness, particularly the M11 areas, which are a locally unusual wetland habitat. Due to the small areas present in the field study area, with larger expanses present in the wider area, particularly of M15b, this feature is considered to be of county importance.
Standing and running water	Local	Several watercourses, lochs and lochans occur in the field study area, including the Allt Saigh, Loch nam Brathain and Loch Liath. Standing and running water provides habitat for otter, water vole, amphibians, fish and invertebrates, which are all common and widespread in the area. As a result, this feature is considered to be of local importance.
Juniper	County	Juniper is not considered to be threatened at an international level but has experienced significant decline in the UK (Trees for Life, 2021). Juniper is also a UK BAP (JNCC, 2010a) species. The individual plants recorded are small but frequent in the field study area, with the potential to increase. As a result, this feature is considered to be of county importance.
Violet coral fungus	County	This species is usually solitary and is typically widespread but rare in the UK (The Wildlife Trusts, 2021). It receives no protection under conservation legislation but is considered to be a notable record. As a result, this feature is considered to be of county importance.

Feature	Importance	Rationale
Otter	Local	Otter is listed as an EPS under the EC Habitats Directive (European Commission, 1992) and are included in the Highlands BAP (THC, 2015b). Given the low level of activity recorded in the field study area, with no protected dwellings, the population of otter is considered to be of local importance.
Water vole	County	Water vole are protected under Schedule 5 of the Wildlife and Countryside Act (as amended) (UK Government, 1981) and are included in the Highlands BAP (THC, 2015b). Scotland supports 40% of the UK population, mostly in the Highlands (Capreolus Wildlife Consultancy, 2005). Water vole burrows were recorded on the majority of watercourses in the field study area. Given the high level of activity recorded, the water vole population in the field study area is considered to be of county importance.
Mountain hare	Local	Mountain hare are protected under the Animals and Wildlife (Penalties, Protections and Powers) (Scotland) Act (UK Government, 2020) included in the Highlands BAP (THC, 2015b) and are widespread in the field study area and in the surrounding area. As a result, they are considered to be of local importance.
Red deer	Local	Red deer are widespread throughout the field study area and in the surrounding area. As a result, they are considered to be of local importance.
Bat species	County	Bats are an EPS under the EC Habitats Directive (European Commission, 1992). Bat activity is generally low across the field study area except in the south were there was moderate to low activity by common pipistrelle and soprano pipistrelle. Common and soprano pipistrelle are two common species that are at a high risk of adverse effects on their populations. Brown long-eared bat, Natterer's bat and Daubenton's bat were also present in lower numbers and these species are at a low risk of adverse effects on their populations. As a result, bat species are considered to be of county importance.
Fish species (brown trout and three-spined stickleback)	Local	Brown trout are a priority species in the UK BAP (JNCC, 2010a) but receive little protection within conservation legislation. Three-spined stickleback is common and has no conservation status. Brown trout are common in the field study area and three-spined stickleback are present at low levels in the field study area, therefore, fish species are considered to be of local importance.
Reptiles and amphibians	Local	Common lizard is protected from intentional or reckless killing or injury under the Wildlife and Countryside Act

Feature	Importance	Rationale
		(UK Government, 1981). Common frog and palmate newt receive limited protection under this Act and only against trade. These species are also widespread in the field study area and the surrounding area; therefore, they are considered to be of local importance.

Features Scoped Out of Assessment

Druim Ba Scheme

5.7.2 As the Druim Ba scheme occurs 14.7km from the Proposed Development, no impacts are considered likely to occur and the scheme is not considered further in this assessment.

Habitats

5.7.3 There are habitats that occur in the field study area that are unlikely to be impacted due to their distance from the Proposed Development. These are coniferous woodland plantation, mixed woodland plantation, dry heath, marshy grassland and bare/disturbed ground. These habitats are not considered further in this assessment.

Violet Coral Fungus

5.7.4 The single record of violet coral fungus occurs outwith the areas of proposed infrastructure, therefore, no impacts are predicted. Should this species be found elsewhere on the Site, it will be avoided by micrositing.

Protected Species (Badger, Wildcat, Pine Marten and Red Squirrel)

5.7.5 As the field study area does not contain habitats suitable to support badger or red squirrel and no records of these species were made during field surveys, these species are not considered further in this assessment.

5.7.6 No records of wildcat or pine marten were recorded and the habitats in the field study area are considered to be of low suitability for these species, therefore, they are not considered further in this assessment.

Freshwater Invertebrates (Including Freshwater Pearl Mussel)

5.7.7 No significant effects are considered to be possible on watercourses following the application of standard mitigation measures, such as pollution prevention measures, therefore freshwater invertebrates are scoped out of this assessment. However, potential impacts on the River Moriston SAC are considered in section 5.9. Freshwater pearl mussels are a qualifying feature of the SAC.

Invertebrates

5.7.8 Surveys of this species group were considered unnecessary as the EcIA adopts a precautionary approach and includes appropriate mitigation, where required, to avoid significant effects.

5.8 Standard Mitigation

5.8.1 The layout of the Proposed Development has, as far as possible, been designed to avoid the habitats of highest ecological importance and with the highest sensitivity to impacts, as detailed in Chapter 2 (Design Iteration and Proposed Development) and in the peatland condition assessment in Appendix 5.5. This was considered by this assessment to include high-quality, near natural and active peatlands, where possible. The majority of turbines have been positioned in areas of poorer quality, inactive peatland. Where it has not been possible to entirely avoid blanket bog or wet heath habitats, turbines have been positioned as close to the edge of areas of those habitat types and on

the shallowest peat, to reduce impacts on the natural functions of those habitats. Furthermore, where the Proposed Development occurs in areas of blanket bog, as far as possible, the locations have been selected to avoid those areas of higher quality, active and deep peat, as detailed in Chapters 2 (Design Iteration and Proposed Development) and 10 (Geology and Soils), and in Appendix 5.5. Where peat depth is >1m, in order to minimise the disturbance to peat, track construction will generally be of a floating design, where practicable, rather than a cut design. While this will be considered at detailed design, the EcIA has assumed that floating tracks will not be required across much of the Site as peat depths are generally <1m. Smaller, isolated areas of deeper peat are also not likely to be feasible for floating tracks as they will not generally allow sufficient distance to transition from cut to floated track design. However, any floating track that is used, for example in sensitive areas detailed in section 5.9.7, the floating track design will have due regard to key principles set out in the joint SNH (now NS) and Forestry Commission Scotland (FCS) guide to floating roads on peat (SNH *et al*., 2010). Measures already taken into account during design include micrositing to avoid good quality and active peatland and, where required, features will be incorporated into access tracks, such as hydrological culverts to minimise the potential effects on the hydrological characteristics of peatland and wetland habitats. Further details of hydrological mitigation to reduce the significance of potential adverse effects on the hydrology are described in Chapter 9 (Hydrology and Hydrogeology).

5.8.2 Standard mitigation also includes the following:

- Overseeing of all work by an Ecological Clerk of Works (ECoW).
- Compliance with the requirements of the Construction Environmental Management Plan (CEMP), (outline CEMP provided in Appendix 2.1). Species protection plans will form part of the CEMP and will address the protected species known to be present in the field study area and will provide details on the actions required if other species not recorded during surveys conducted to date (such as wildcat or pine marten) are encountered during pre-construction surveys or the construction phase of the Proposed Development. The CEMP will also include an outline of the proposed approach to construction methods and environmental protection during all aspects of the construction phase, including details of ecological constraints and standard pollution prevention guidelines to ensure no water or air borne pollutants will reach ecological features, such as the Allt Saigh, Allt Bhlaraidh or River Moriston or their tributaries. The CEMP will also include the procedures for surface water management during construction.
- Appropriate pollution response spill kits and silt mitigation measures installed at watercourse crossing locations. As a minimum, these will follow SEPA Guidelines for Water Pollution Prevention from Civil Engineering Contracts (SEPA, 2006a) and Special Requirements (SEPA, 2006b). The risk of pollution from surface run-off to watercourses and aquatic habitats will be avoided by ensuring that run-off control measures, such as interceptor drains and silt traps to assist in maintaining water quality, are in place. Additionally, interceptor drains will be used to control the flow of any run-off from construction or operational activities. Pollution control measures will be included in the CEMP.
- Provision of a slope at one end of, or mammal ramps at, excavations that remain uncovered overnight, where there would be the potential for mammals to become trapped. This will prevent otter, water vole and other species from becoming trapped. These measures will be included in the species protection plans within the CEMP. Additionally, all pipes will be capped, and fuel/oils and chemicals stored securely.
- Suitable design of the watercourse crossings to allow continued mammal movement along the watercourses and minimise riparian habitat loss. The design of watercourse crossings is detailed in Chapter 9 (Hydrology and Hydrogeology).

- A pre-construction protected species survey following best practice guidance, similar to the one undertaken during this assessment, undertaken no later than eight months prior to the start of construction, particularly for otter and water vole, which are known to be present, and pine marten and wildcat, which may be present in the future. This will identify any protected species that were not present during previous surveys that have started using the habitats of the Proposed Development and/or that are present in the future as a result of changes in usage of the Proposed Development by species recorded to date. This will also involve a survey of suitable habitat where amphibians or reptiles may be found. A suitably qualified ecologist will be appointed to undertake this survey. If the work is undertaken outwith the active months for amphibians and reptiles then the ecologist will search construction areas for suitable hibernation sites for relocation. Any amphibians or reptiles discovered during construction will be moved by the ECoW to suitable areas outwith the construction area. Species protection plans will be included in the CEMP. The species protection plans will be followed during construction of the Proposed Development.

5.9 Likely Effects

5.9.1 This section considers the potential impacts and associated effect significance of the construction, operation and decommissioning of the Proposed Development in the absence of mitigation based on the typical activities described in Chapter 2 (Design Iteration and Proposed Development).

Construction

Statutory Designated Nature Conservation Sites

5.9.2 No direct impacts within statutory designated nature conservation sites have been identified. A temporary construction compound is proposed in the River Moriston catchment, as shown on Figure 5.1, therefore indirect impacts from pollution are possible. The temporary construction compound is located 18.75m to the north of the River Moriston SAC and is separated from the SAC by the main A887 road. Construction of the temporary compound would occur on previously disturbed ground that is currently bare/gravelled and used for vehicle parking, therefore, the extent of the impact would be low. As a result of the separation of the Proposed Development and the nature of the work in the vicinity of the SAC, pollution would have a low magnitude and short-term impact and the effect is considered to be **not significant**.

5.9.3 Construction may also lead to the localised, short-term and temporary displacement of red deer onto other areas of the estate that may include Levishie Wood SSSI, which would cease following the completion of construction each day. There are, however, a number of factors that, considered collectively, would suggest displacement onto Levishie Wood SSSI would be of low magnitude, including:

- Construction activities will be localised rather than comprising the entirety of the Proposed Development. Any displacement is therefore unlikely to be wide scale in nature, allowing much of the Proposed Development to still be available to deer.
- There is a distinct day versus night distribution in deer across the estate, with deer preferring the high ground and middle grazing fields around the existing access track during the day, moving south towards the lower ground and grazing fields beyond Levishie Wood SSSI at night. There is considered sufficient alternative high ground (i.e. the Operational Development and areas of the Proposed Development where construction activities are not taking place) and middle ground that will remain undisturbed (i.e. no increase in typical activities) during the period of construction to ensure that deer would not be displaced entirely from this area.
- During periods of adverse weather, deer move off the high ground to concentrate in the middle ground of the estate around the existing access track. Deer are also fed during the winter along

the existing access track and the boundary of Levishie Wood SSSI. This supplementary feeding encourages deer to concentrate in this area, away from the higher ground and any potential disturbance from the Proposed Development.

- Deer are not culled from vehicles on the estate, so are not wary of vehicular traffic. Deer are also habituated to some degree of vehicle movements from the Operational Development. It therefore cannot be assumed that all activities would be equally disturbing to deer across the Proposed Development.

5.9.4 It is considered that any displacement from the Proposed Development is most likely to occur onto the Operational Development and the other areas of high and middle ground available to deer, however, there does remain a possibility that increased deer movements could occur towards Levishie Wood SSSI. During the period of displacement, the birch-juniper woodland of the SSSI could be damaged by grazing. As the woodland is already considered to be in an unfavourable condition due to a range of factors, including grazing and, therefore, any further displacement of deer resulting in grazing pressure on the SSSI, even at a low magnitude, is considered likely to result in a **significant adverse effect**.

Non-statutory Designated Nature Conservation Sites

5.9.5 No direct impacts within non-statutory designated nature conservation sites have been identified. However, construction of the Proposed Development could result in habitat modification of ancient and semi-natural woodland along the existing access track at Coille Levishie from increased vehicle movement during construction, as shown on Figure 5.1. Dust produced from increased vehicle movement could, in the worst instance, smother small plants in the ground flora and leaves of tree species. This is considered to be a temporary, low magnitude, low frequency, short-term impact on a narrow extent of the edge of the habitat. As a result, the effect is considered to be **not significant**.

Habitats

5.9.6 Construction activities have the potential to degrade or destroy terrestrial habitats either directly through excavation, compaction, or modification (e.g. vegetation removal) or indirectly as a result of dewatering or from the accidental release of fuels, lubricants or other chemicals. The construction of 18 permanent hardstanding areas, permanent access tracks, a LiDAR unit and a substation would cause permanent habitat loss. The construction of up to eight borrow pits, a batching plant, two temporary construction compounds, and two cross country cable routes plus the laying of cables between turbines would cause temporary habitat degradation or loss in the short- to medium-term until habitats are reinstated following completion of the Proposed Development. Three borrow pit search areas and the temporary construction compounds occur on areas previously used for the construction of the Livishie hydro scheme and the Operational Development, respectively. The significance of these effects per habitat type is considered below.

5.9.7 Floating stone road or trackway panel construction may be used in sensitive areas, where possible, such as Annex 1 (European Commission, 1992) peatland. The track construction will ensure hydrological connectivity is maintained by including measures such as the inclusion of a non-alkaline porous horizon within the track sub-base to prevent the track structure acting as a barrier to natural hydrogeological processes.

5.9.8 Figure 5.2 and Figure 5.4 show the Proposed Development overlaid on the habitats as mapped during the Phase 1 and NVC surveys.

5.9.9 Table 5.11 and Table 5.12 set out the percentage of permanent and temporary habitat loss by habitat type within the field study area, respectively. Direct habitat loss during construction includes the working areas for each turbine site (turbine base and hardstanding area), the area of proposed new access track (at 5.5m width), and the working areas for the substation. Indirect habitat modification is calculated based on a 10m buffer around the areas of direct habitat loss as this is considered to represent the worst-case scenario of habitat that is likely to be indirectly impacted by the Proposed Development.

Table 5.11 – Permanent Habitat Loss or Degradation from Proposed Development During Construction

		Direct Habitat Loss		Indirect Habitat Modification/Degradation	
Habitat	**Total Habitat in Field Study Area (ha)**	**Area Lost (ha)**	**Percentage Lost (%)**	**Area Modified (ha)**	**Percentage Modified (%)**
Blanket bog	418.99	1.86	0.4	3.02	0.72
Wet modified bog	79.88	0.77	0.96	2.15	2.69
Wet heath	875.84	10.54	1.20	22.63	2.58
Totals	**1374.71**	**13.17**	**0.96**	**27.80**	**2.02**

Table 5.12 – Temporary Habitat Loss or Degradation from Proposed Development During Construction

		Direct Habitat Loss		Indirect Habitat Modification/Degradation	
Habitat	**Total Habitat in Field Study Area (ha)**	**Area Lost (ha)**	**Percentage Lost (%)**	**Area Modified (ha)**	**Percentage Modified (%)**
Blanket bog	418.99	1.38	0.33	0.67	0.16
Wet modified bog	79.88	0.52	0.65	0.24	0.30
Wet heath	875.84	23.37	2.67	5.59	0.64
Totals	**1374.71**	**25.27**	**1.84**	**6.50**	**0.47**

5.9.10 Without consideration of mitigation, the permanent loss or degradation of blanket bog would comprise 4.88ha (1.17%) of the total recorded in the field study area. The temporary loss or degradation of blanket bog would comprise 2.05ha (0.49%) of the total recorded in the field study area. As blanket bog is an Annex 1 habitat (European Commission, 1992) and much of the blanket bog in Scotland is in poor condition, further loss or degradation of this feature is considered to be an adverse effect on a feature of regional importance. Although, this would be a low magnitude adverse impact that would still leave functioning habitat, much of the blanket bog in the field study area and surrounding area is of poorer quality, therefore further loss or degradation of good quality blanket bog is considered to be **significant.**

5.9.11 Without consideration of mitigation, the permanent loss or degradation of wet modified bog would comprise 2.92ha (3.66%) of the total recorded in the field study area. The temporary loss or degradation of wet modified bog would comprise 0.76ha (0.95%) of the total recorded in the field study area. Although wet modified bog has the potential to return to blanket bog, the examples in the field study area are species-poor and would likely require active restoration measures in the

medium-term to return to blanket bog. As the wet modified bog in the field study area is of poor quality and the potential impact occurs on a feature of county importance, further loss or degradation, though an adverse effect, is considered to be **not significant**.

5.9.12 Without consideration of mitigation, the permanent loss or degradation of wet heath would comprise 33.17ha (3.79%) of the total recorded in the field study area. The temporary loss or degradation of wet heath would comprise 28.96ha (3.31%) of the total recorded in the field study area. As wet heath, particularly M15 wet heath, is an Annex 1 habitat (European Commission, 1992), loss of this feature is considered to be an adverse effect on a feature of county importance. Although this would be a moderate magnitude adverse impact, it would involve a small extent of the habitat present on the Site and, therefore, would still leave functioning habitat. As a result, the effect is considered to be **not significant**.

5.9.13 Due to the proximity of standing and running water to the Proposed Development, there is potential for pollution or surface water run-off to enter this habitat. Although the magnitude and duration of the impact would depend on the nature of the pollution event, based on a precautionary approach, it has been considered to result in an adverse effect on a feature of local importance but this effect is considered to be **not significant**, particularly as the effect would be localised to watercourse crossing areas, with most standing or running water habitat protected from construction activities by a 50m buffer.

5.9.14 Without consideration of mitigation, direct and indirect impacts, such as habitat loss and modification, are possible on the first, smaller area of M11 (Target Note 1 on Figure 5.6) and indirect impacts, such as habitat modification from hydrological disruption and pollution are possible on the two areas of M15b. The loss of the smaller area of M11, which has only a fragment of yellow saxifrage remaining, would be a long-term, permanent impact and an adverse effect at the county level. However, given the small extent of this area and the poorer quality of this habitat in comparison to the more extensive area of M11 (Target Notes 2a and 2b), this effect is considered to be **not significant**.

5.9.15 Habitat modification from hydrological disruption of the two areas of M15b would be a short-term, temporary and low magnitude impact. The first area occurs close to the existing Livishie Hydro access track that would be upgraded for the Proposed Development, therefore, the extent of the impact would be low. Dust produced from vehicle movement could also smother small plants in the ground flora and leaves of plant species in this area. This is considered to be a temporary, low magnitude, low frequency, short-term impact on a narrow extent of the edge of the habitat. The majority of the second area of M15b to the north of Turbine 9 is separated from the Proposed Development by the Allt Saigh, therefore, the impact would be on a narrow extent of the edge of the habitat. As a result, the effect of habitat modification on the areas of M15b is considered to be **not significant**. There is also potential for pollution or surface water run-off to enter these habitats. Although the magnitude and duration of the impact would depend on the nature of the pollution event, based on a precautionary approach, it has been considered to result in an adverse effect at the county level but this effect is considered to be **not significant** as it would involve a small extent of the habitat present and, therefore, would still leave functioning habitat.

Juniper

5.9.16 A single plant occurs on the edge of the existing Livishie Hydro track to be upgraded and is likely to be lost or damaged as a result of the Proposed Development. This would be a permanent and irreversible impact but would occur on a single juniper plant, with several other records present throughout the field study area. As a result, the effect is considered to be **not significant**.

Otter

5.9.17 Construction activities in the vicinity of the watercourses in the Proposed Development, such as the Allt Saigh, have the potential to disturb otter moving along the watercourses as a result of noise, vibration or light. Most construction activities would occur a minimum of 50m from watercourses, except at watercourse crossings. A small area of habitat is likely to be lost but is unlikely to extend beyond 15m at each watercourse crossing. Full details of conceptual watercourse crossing design is

provided in Appendix 9.1. Disturbance would be localised to watercourse crossings and would be a short-term, low magnitude impact on this species. As a result, and in the absence of any identified holts or other resting places within 200m of any crossings, the effect of construction of the Proposed Development would only be on otter travelling along the watercourse. Given the low level of activity of this species on the Site and that no barriers to movement along the watercourses will exist following construction, the effect is considered to be **not significant**.

5.9.18 Pollution from the accidental release of fuels, lubricants or other chemicals as well as changes in drainage patterns and silt released into aquatic habitats could directly affect otter e.g. from contact with corrosive substances or by coating fur, or indirectly by reducing fish numbers. The magnitude and duration of the impacts would depend on the nature of the pollution event but, based on a precautionary approach, this could result in a **significant adverse effect** on an ecological feature of local importance.

5.9.19 Construction activities could also result in the direct injury/accidental death of individual otter from increased vehicle traffic on existing and new tracks. However, the low vehicle speed limits (matching those currently used for the Operational Development) would reduce the magnitude and frequency of this impact. As a result, the effect is considered to be **not significant**.

Water Vole

5.9.20 A minimum 50m buffer has been used around watercourses except where watercourse crossings are required. Watercourse crossings near water vole burrows have been avoided, where possible. One water vole burrow is located 5.52m from a proposed watercourse crossing. This burrow is unlikely to be disturbed or damaged during construction, with the Applicant committing to maintain a minimum exclusion buffer of 5m around the burrow to ensure the burrow and its surrounding habitat are not damaged or disturbed during construction of the watercrossing. Construction activities may disturb water vole moving along the watercourses as a result of noise, vibration or light. A small area of habitat is likely to be lost but is unlikely to extend beyond 15m along the watercourse at each watercourse crossing. Full details of conceptual watercourse crossing design is provided in Appendix 9.1. Disturbance would be localised to watercourse crossings and would be a short-term, low magnitude impact on this species. As a result, the effect of construction of the Proposed Development on water vole is considered to be **not significant**.

5.9.21 Pollution from the accidental release of fuels, lubricants or other chemicals as well as changes in drainage patterns and silt released into aquatic habitats could directly affect water vole e.g. from contact with corrosive substances or by coating fur. However, this would typically occur at watercourse crossing areas or the two areas where access tracks for the Proposed Development are located within the 50m watercourse buffer. The magnitude and duration of the impact would depend on the nature of the pollution event but, based on a precautionary approach, it could result in a **significant adverse effect** on an ecological feature of county importance.

Mountain Hare

5.9.22 Construction activities could result in the direct disturbance or injury/accidental death of individual mountain hares e.g. from vehicle collisions. Construction activities could also have the potential to degrade or destroy mountain hare habitat either directly as a result of, for example, excavation, compaction, or modification (e.g. vegetation removal, covering) or indirectly as a result, for example, of dewatering, or from the accidental release of fuels, lubricants or other chemicals. Some activities could cause permanent degradation or destruction, for example where turbine foundations are constructed or permanent new access tracks are formed, but in most cases, impacts from construction would be on a common species and would be of a temporary and negligible magnitude due to the availability of habitat in the surrounding area and the small extent of habitat involved, therefore, the effects are considered to be **not significant**. Mountain hares are also considered extremely unlikely to be involved in vehicle collisions due to the swift movement and timid nature of this species, therefore impacts would be of a negligible magnitude and the effect is considered to be **not significant**.

Red Deer

5.9.23 Construction activities could result in the direct disturbance and displacement of red deer into habitats surrounding the Proposed Development. The effect of this on deer welfare is considered to be **not significant** as the displacement would be temporary and short-term onto habitat that is common in the surrounding area, deer are offered supplemental feeding in winter and deer would return to displaced areas following the completion of construction each day. As detailed in section 5.6.1, deer are generally present on the Operational and Proposed Developments during the day and move south towards Levishie Wood SSSI at night.

5.9.24 Construction activities could potentially increase the risk of vehicle collisions and result in the direct injury/accidental death of individual deer from increased vehicle traffic on new tracks. However, the low vehicle speed limits will reduce the magnitude and frequency of this impact. As a result, the effect is considered to be **not significant**.

Bat Species

5.9.25 No bat roosts would be disturbed, destroyed or damaged as a result of construction activities. Construction has the potential to result in a short-term, low magnitude displacement impact on bats that forage and commute across the Site and particularly along linear features, such as the Allt Saigh, with the construction of a single watercrossing in the east of the Site. However, the effect of this is considered to be **not significant** due to the small extent involved, leaving the majority of functioning habitat and linear features for foraging and commuting bats.

Fish Species

5.9.26 Construction impacts have the potential to result in the degradation or destruction of aquatic habitats inhabited by fish, either directly by excavation or compaction, or indirectly by pollution from the accidental release of fuels, lubricants or other chemicals as well as changes in drainage patterns and silt released into aquatic habitats. Direct effects are considered unlikely due to the protective 50m buffer around watercourses and the avoidance of work in the watercourse at watercourse crossings, where possible. Most culvert watercourse crossings are on minor watercourses not suitable for fish, as detailed in Appendix 9.1. Pollution or sediments from construction run-off could also enter watercourses and impact fish species. The magnitude and duration of the impact would depend on the nature of the pollution event but, based on a precautionary approach, it could result in an adverse effect on an ecological feature of local importance. Brown trout population density is good in the field study area, therefore, a high magnitude pollution event could result in a high fish kill. Three-spined stickleback are rare in the field study area but common in the surrounding area, therefore, although a low magnitude impact could affect the local population, it would not affect the county or regional populations. As a result, the effect of a potential pollution event on fish species is considered to be **significant** for brown trout but **not significant** for three-spined stickleback.

Reptiles and Amphibians

5.9.27 Construction activities could result in the direct disturbance or injury/accidental death of individual reptiles and amphibians e.g. from vehicle collisions. Construction activities could also have the potential to degrade or destroy reptile and amphibian habitat either directly as a result of, for example, excavation, compaction, or modification (e.g. vegetation removal) or indirectly as a result, for example, of dewatering, or from the accidental release of fuels, lubricants or other chemicals. Some activities could cause permanent degradation or destruction, for example where turbine foundations are constructed or permanent new access tracks are formed, but in most cases, impacts would be temporary and negligible magnitude, due to the small area of habitat involved, on common and low sensitivity species groups, and the effects are considered to be **not significant**.

Operation

5.9.28 No operational impacts that would result in significant effects following the application of standard mitigation are considered to occur on statutory designated nature conservation sites, habitats, protected terrestrial mammals, fish species or reptiles and amphibians. No further habitat suitable

for protected species would be lost during operation of the Proposed Development. No operational impacts are considered to occur on non-statutory designated nature conservation sites as all wind farm activities would occur from access tracks and infrastructure that were established during the construction stage.

Bat Species

5.9.29 The main operational impact on bat species is direct collision with turbines leading to bat fatalities. It is also possible for bat mortality to result from internal haemorrhaging due to indirect barotrauma (Baerwald *et al*., 2008), however this is considered to occur far less frequently than collision. The current low to moderate level of activity by pipistrelle species and the low level of activity by all other species in the field study area indicates that significant effects associated with indirect barotrauma are unlikely.

5.9.30 Overall, the field study area is considered to support a low number of individual foraging and commuting bats dominated by common and widespread species, such as common and soprano pipistrelle, with most activity (57.69%) at a low to low/moderate level across the survey season. The higher levels of activity (moderate to moderate/high) occurred at detector BE 10, south of the Allt Saigh, as shown on Figure 5.7. Given the results of the bat surveys, the field study area is not considered to support important bat populations, although pipistrelle species are at high risk of collision with turbines, with medium population vulnerability (SNH *et al.*, 2019a). The risk to pipistrelle species from collision is considered to be low to medium when taking into account the most frequent activity category (i.e. low activity) and the highest activity category (i.e. moderate to high activity). Whilst direct collision would be an adverse impact, this is considered to involve a low number of individuals from roosts in the wider area. A known roost location in the wider area occurs in the ruins on Loch ma Stac, which was confirmed during surveys for the Operational Development. Potential roost locations could also occur in the bothy on Loch Aslaich and in buildings south of Levishie Wood. All of the known and potential roost locations are situated more than 800m from the Site boundary. At this distance and with more suitable foraging habitat present in the wider area, much of it closer to these known and potential roosts, it is considered likely that the field study area only supports a low number of individuals from these known and potential roost locations, therefore the impact is considered to be adverse but of low magnitude for the duration of the Proposed Development operational period. The turbine located closest to the detector with the highest level of bat activity has been sited a minimum of 200m away. Good practice guidance typically requires a minimum buffer of 50m from turbine blade tip to key habitat features (SNH *et al.*, 2019a). This area is close to the Allt Saigh, which is a linear feature that bat species are likely to use for foraging and commuting. The size of the buffer is considered to be suitable in relation to lowering the level of risk of bat collision on the Site. As a result, the effect is considered to be **not significant**.

5.9.31 Indirect impacts of turbines on bats also include disturbance and displacement from foraging, commuting or migrating areas. Overall bat activity is considered to be low to low/moderate in the field study area and is very similar to the results of the surveys undertaken close by in 2011 for the Operational Development. The habitat in the field study area is also considered to have low suitability for foraging bats, with few potential roost features and low quality foraging habitat. As a result, the effects are considered to be **not significant**.

Decommissioning

5.9.32 Decommissioning impacts would involve personnel and machinery accessing locations across the Site to dismantle and remove infrastructure, including turbines, hardstanding and site buildings, as detailed in Chapter 2 (Design Iteration and Proposed Development). The turbines and substation would be removed to ground level, with the concrete turbine foundations left in-situ and broken down to approximately 1m below ground level. the substation foundation would also be removed. The access tracks and electrical cables would be left in-situ to minimise habitat disturbance. The overall impacts of decommissioning would be short-term, intermittent and temporary, lasting approximately six months. Existing access tracks would be used to access the infrastructure to be decommissioned. Construction compounds would be re-installed on the Site and these would occur

at the same locations used during construction i.e. on habitats previously disturbed by the construction of the Proposed Development. As a result, no effects on habitats are predicted, with habitats allowed to recover and regenerate following the removal of infrastructure.

5.9.33 There may be a temporary and short-term disturbance impact on protected species, such as otter and water vole, in the field study area but this would be restricted to the access tracks and other infrastructure. The effect of this is considered to be **not significant**.

5.10 Additional Mitigation and Enhancement

Mitigation During Construction

5.10.1 In the absence of mitigation, significant effects are predicted on Levishie Wood SSSI, blanket bog, otter, water vole and brown trout. Standard mitigation for pollution prevention in relation to otter and water vole is provided in section 5.8. Specific mitigation for Levishie Wood SSSI, blanket bog and brown trout is provided below. No specific mitigation is required for the other ecological features; however, the Applicant proposes to implement a suite of standard good practice working measures that will provide additional protection. These are summarised below and will be detailed in the CEMP.

Deer Management Plan

5.10.2 Appendix 5.6 details the measures that will be undertaken during construction to ensure deer numbers are kept at a low level to avoid damage to Levishie Wood SSSI from deer displacement during construction. Measures include the continuation and monitoring of the current annual deer cull plan, removal of deer fencing around established native woodland areas (where possible) to provide access to additional areas for deer in conjunction with the proposed restriction of speed limits within the construction site boundary and vegetation monitoring within Levishie Wood SSSI to guide the requirement for additional measures, such as an increase in cull numbers.

Habitat Reinstatement

5.10.3 Areas of temporary infrastructure, such as hardstanding, the construction compounds and the borrow pits, will be reinstated as soon as possible after construction has been completed to allow the recolonisation of natural habitats. Further details on the proposed approach to habitat reinstatement will be set out in the CEMP.

Fish Monitoring and Remediation

5.10.4 A pre-construction hydrochemical assessment of target watercourses that are likely to be impacted, such as the Allt Saigh, will be undertaken following MSS guidelines (MSS, 2018). Control sites will also be included, particularly the lower reaches of the Allt Saigh at its confluence with Loch Ness, which may be utilised by spawning salmon and ferox trout, and on the River Moriston SAC, given its importance for salmon and freshwater pearl mussel. As inputs of silt and peat can damage fish habitats and result in direct mortality to fish species, regular monitoring of water quality, such as turbidity and suspended solids, will also be undertaken by the ECoW in areas where active works are taking place and areas where run-off may be present during periods of high rainfall. The monitoring programme and identification of control sites will be developed post-consent and will follow MSS guidelines (MSS, 2018).

5.10.5 Fish population monitoring will also be undertaken during construction at the target watercourses and control sites and will follow MSS guidelines (MSS, 2018).

5.10.6 Should the results of these surveys exceed the threshold levels recorded during site characterisation/baseline and pre-construction surveys, an immediate investigation will be undertaken by the ECoW into the likely cause of the issue. Remedial action will then be undertaken to address the cause and will depend on the nature of the identified issue. For example, remedial actions may include further sedimentation controls if an increase in sedimentation is found to be the cause of the issue.

Good Practice Measures

5.10.7 Standard mitigation measures will be implemented during the construction work, as detailed in section 5.8. The Applicant also proposes to implement a suite of standard good practice working measures that will provide additional protection. These are detailed below.

Micrositing

5.10.8 Micrositing of infrastructure and/or the configuration of the construction working areas within the Proposed Development will seek to avoid localised ecological sensitivities wherever possible. This will include, but will not be limited to:

- Maximising the distance of infrastructure and the associated construction working areas from watercourses, and water vole burrows.
- Maximising the distance of infrastructure and the associated construction working areas from the small area of M11, where possible, and from the two areas of M15b habitat.
- Minimising the extent of construction work within blanket bog.

Maintaining Hydrological Connectivity

5.10.9 Suitable drainage and surface water measures will be used to maintain hydrological connectivity in peatland habitats, particularly blanket bog and wet heath, and in working areas near the M11 and M15b habitats. This will include measures such as diverting drainage around working areas and maintaining hydrological connectivity in track design by using small diameter pipes in the sub-base. Further details are provided in the outline CEMP in Appendix 2.1.

5.10.10 Greenfield run-off (i.e. non-silty surface water flow that has not yet passed over any disturbed construction areas) will be kept separate from potentially contaminated water from construction areas, where possible. Where appropriate, interceptor ditches and other drainage diversion measures will be installed immediately in advance of any excavation works in order to collect and divert greenfield run-off around areas disturbed by construction activities. All surface water within disturbed areas will be managed in accordance with sustainable drainage system techniques, using a multi-tiered approach to provide both flow attenuation and treatment through infiltration, where possible, and physical filtration prior to discharge.

5.10.11 In accordance with industry guidance (SNH *et al*., 2019b), ditches will follow the natural flow of the ground with a generally constant depth to ditch invert. They will have shallow longitudinal gradients, where possible. Regular check-dams will be used where necessary to control the rate of run-off. The ditches will be designed to intercept any stormwater run-off and to allow clean water flows to be transferred independently through the works without mixing with construction drainage. The regular interception and diversion of clean run-off around infrastructure will prevent significant disruption to shallow groundwater flow and peatland. This will also reduce the flow of water onto any exposed areas of rock and soil, thereby reducing the potential volume of silt-laden run-off requiring treatment.

5.10.12 Greenfield run-off will be discharged into an area of vegetation for dispersion or infiltration, mimicking natural flows, so as not to alter downstream hydrology or soil moisture characteristics.

Otter and Water Vole

5.10.13 Where possible, watercourse crossings would be suitably designed to allow continued otter and water vole movement along watercourses and would minimise riparian habitat loss. This would also reduce the risk of mammals crossing tracks and being involved in vehicle collisions.

Juniper

5.10.14 The single, small juniper plant that would be damaged or destroyed as part of the access track upgrade will be transplanted into a nearby area of habitat outwith the area where works are proposed.

Mitigation During Operation

5.10.15 In the absence of mitigation, no significant operational effects are predicted on the ecological features discussed in this chapter. However, habitat restoration and fish monitoring are discussed here as mitigation that will be undertaken during operation to compensate for impacts during construction.

Habitat Restoration and Enhancement

5.10.16 Active restoration of the peatland habitats in the field study area, both the habitats impacted by the Proposed Development and habitats that are already modified, will be carried out in line with Appendix 5.7 and will be secured by planning condition. Active restoration is defined here as the process of actively encouraging the regeneration of degraded peatland habitats. Degraded peatland habitats are those that are reduced in quality. A minimum of 6.93ha of peatland will be restored in areas of modified blanket bog that no longer contain a significant proportion of peat-forming vegetation. The overall aim will be to restore a larger area of peatland than the area lost. This will mitigate the permanent and temporary loss and modification of peatland as a result of the Proposed Development.

5.10.17 There is also the opportunity for habitat enhancement on-site, as detailed in Appendix 5.7. The creation of new woodland and montane scrub habitat could benefit species by providing shelter and feeding opportunities. Habitat management with regards to ornithology is also detailed in Appendix 5.7.

Fish Monitoring and Remediation

5.10.18 Monitoring of fish populations and watercourse hydrochemistry at the target watercourses and control sites surveyed during construction will continue for at least one year after the completion of construction, depending on the monitoring results recorded during the construction phase. The design and duration of the fish monitoring programme will be finalised post consent through consultation with key stakeholders, such as MSS and the Ness District Salmon Fisheries Board, and a suitably qualified and experienced fish surveyor, and will follow MSS monitoring guidelines (MSS, 2018).

5.10.19 Should the results of these surveys exceed the threshold levels recorded during site characterisation/baseline, pre-construction and construction surveys, an immediate investigation will be undertaken by the Environmental Advisor into the likely cause of the issue. Remedial action will then be undertaken to address the cause and will depend on the nature of the identified issue. For example, remedial actions may include further sedimentation controls if an increase in sedimentation is found to be the cause of the issue.

Mitigation During Decommissioning

5.10.20 In the absence of mitigation, no significant decommissioning effects are predicted on the ecological features discussed in this chapter. As a result, no specific mitigation is required. However, the Applicant proposes to implement a suite of standard good practice working measures that will provide additional protection. It is anticipated that these measures will be similar to those detailed in the CEMP; however, the proposed measures would be refined to account for changes in good practice, amendments to existing legislation, future enactment of pertinent legislative instruments (e.g. regulation in relation to waste), policy direction and recorded, site-specific environmental data gathered during the operational phase of the Proposed Development. Decommissioning proposals will be agreed with THC prior to decommissioning works commencing.

Habitat Reinstatement

5.10.21 Many elements of the infrastructure will be removed as part of the decommissioning of the Proposed Development and the habitats reinstated as soon as possible to allow natural recolonisation. Decommissioning proposals will be agreed with THC and other key stakeholders, such as NS, prior to decommissioning works commencing and will consider site-specific habitat and

species data gathered during the operational phase of the Proposed Development and pertinent legislation and guidance available at the time of decommissioning.

5.11 Residual Effects

Construction

Designated Nature Conservation Sites

5.11.1 Implementation of the Deer Management Plan would avoid likely significant adverse effects from red deer displacement into Levishie Wood SSSI, with no residual effects predicted. Red deer are likely to return to the field study area during the operational phase of the Proposed Development from where they were displaced during construction, thereby reducing any impacts on Levishie Wood SSSI.

Habitats

5.11.2 Following completion of construction of the Proposed Development (including reinstatement work), residual adverse effects are anticipated for the medium-term (approximately ten to 15 years), until peatland habitats have re-established. Permanent habitat loss would occur in blanket bog (4.88ha) due to the excavation of turbine bases, other infrastructure and access tracks. A minimum of 6.93ha of degraded peatland will be restored towards good quality active blanket bog following the completion of construction, and in the medium- to long-term would provide a local beneficial effect, particularly as the majority of peatland is currently modified. The peatland condition assessment identified a minimum of 8ha of peatland that could be restored, as detailed in Appendix 5.7. However, this was not quantified for every potential area of restoration, so the area restored is likely to exceed this. The aim is that by restoring degraded peatland, it would become actively peat-forming blanket bog, which is able to store increased levels of water and carbon dioxide, helping with flood prevention and climate change, respectively. The aim is also to restore a larger area of blanket bog than the area lost. As a result, **no significant residual effects** are predicted.

5.11.3 Overall, with the completion of the mitigation and good practice measures detailed in this chapter, whereby the most ecologically valuable and sensitive habitats have been avoided and measures to reduce impacts on all other habitats of higher value and sensitivity have been employed, the effects on habitats are considered to be **not significant**.

Protected and Notable Species

5.11.4 Overall, with the completion of the mitigation and good practice measures detailed in this chapter, such as pre-construction protected species survey, the implementation of pollution prevention measures, fish and hydrochemical monitoring and remediation, and a deer management plan, the residual effects on protected species are considered to be **not significant**.

Operation

5.11.5 Following the application of standard mitigation and good practice measures, such as pollution prevention measures and fish monitoring and remediation, the residual effects on ecological features during operation are considered to be **not significant**.

Decommissioning

5.11.6 There would be no significant decommissioning effects pre-mitigation and, consequently, residual effects as a result of decommissioning are considered to be **not significant**.

5.12 Habitats Regulations Appraisal Screening

5.12.1 The Proposed Development is unlikely to impact the River Moriston SAC and its qualifying features, as described in section 5.9. In the absence of mitigation, including standard pollution prevention measures, the impact pathway is not considered to lead to a likely significant effect due to the distance of the Proposed Development from the nearest infrastructure and its separation by the

main A887 road, and the low magnitude of the potential impact in the form of a temporary construction compound on previously disturbed ground. All other construction works occur within the Allt Saigh catchment and have no connection with the River Moriston catchment. As the Proposed Development is not considered to lead to a likely significant effect on the SAC and its qualifying features, a Habitats Regulations Appraisal and Appropriate Assessment are not considered to be required.

5.13 Cumulative Assessment

5.13.1 This section considers the potential for cumulative effects on ecological features from those proposed, applied, under construction and consented schemes closest to the field study area by first describing the known conditions on each of those sites and then summarising the cumulative effect with the Proposed Development. Table 5.13 shows the cumulative developments to be considered in the cumulative assessment, as agreed with NS and THC.

Table 5.13 – Developments Considered in Cumulative Assessment

Under Construction	Consented	In Planning
Glen Kyllachy	Aberarder	Cloiche
	Dell	Corriegarth 2
	Lochluichart Extension II	Glenshero
	Millennium South	Kirkan

5.13.2 However, as no developments occur within 10km of the Proposed Development, no cumulative developments are considered to occur in the same zone of influence as the Proposed Development. As a result, no cumulative effects on ecological features are predicted.

5.14 Summary

5.14.1 This chapter has considered potential impacts and their associated effects on ecological features, such as designated nature conservation sites, habitats and protected species in line with best practice guidance from CIEEM (CIEEM, 2018).

5.14.2 The field study area was surveyed in 2019 and 2020 to provide baseline information on habitats and faunal species. Surveys included an extended Phase 1 habitat survey, NVC surveys and a peatland condition assessment. The dominant habitats were wet heath and blanket bog. Potential GWDTE were recorded but these are unlikely to be groundwater dependent in the setting of the field study area and they are not a significant constraint. Protected species surveys identified the presence of water vole, otter, mountain hare, brown trout, three-spined stickleback, common frog, palmate newt, common lizard, red deer, common pipistrelle, soprano pipistrelle, brown long-eared bat, Daubenton's bat and Natterer's bat. The species recorded are common and widespread throughout the desk and field study area.

5.14.3 Without the application of mitigation, significant effects are predicted on Levishie Wood SSSI, blanket bog, otter, water vole and brown trout. Following the application of mitigation, such as a deer management plan, CEMP, pollution prevention measures, peatland restoration and fish monitoring and remediation, **no significant residual effects** are predicted.

Table 5.14 – Summary of Effects

Ecological Feature	Description of Effect	Significance of Likely Effect		Mitigation Measure	Significance of Residual Effect	
		Significance	Beneficial/ Adverse		Significance	Beneficial/ Adverse
Construction						
Levishie Wood SSSI	Disturbance of Levishie Wood SSSI by displaced red deer.	Significant	Adverse	Implementation of deer management plan in conjunction with existing deer management plan for Operational Development, as provided in Appendix 5.6 and Appendix 5.8, respectively.	Not significant	Beneficial
Habitats	Loss and degradation of habitat: blanket bog.	Significant	Adverse	Implementation of Habitat Management Plan (HMP), including habitat reinstatement, restoration and enhancement, as provided in Appendix 5.7.	Not significant	Beneficial
	Loss and degradation of habitat: wet modified bog and wet heath.	Not significant	Adverse	Habitat reinstatement.	N/A	N/A
Protected species	Disturbance of protected species: otter, water vole and bat species.	Not significant	Adverse	Pre-construction protected species survey. Micrositing around water vole burrows, with minimum exclusion buffer of 5m.	N/A	N/A

Ecological Feature	Description of Effect	Significance of Likely Effect		Mitigation Measure	Significance of Residual Effect	
		Significance	Beneficial/ Adverse		Significance	Beneficial/ Adverse
	Pollution of watercourses in relation to otter, water vole and brown trout.	Significant	Adverse	Implementation of standard pollution prevention measures. Fish monitoring programme to continue pre-construction, during construction and at least one year after construction, with remedial actions triggered should results exceed threshold levels.	Not significant	N/A
Operation						
Bat species	Collison of bats with wind turbines	Not significant	Adverse	N/A	N/A	N/A
Decommissioning						
Habitats	Disturbance of habitats from removal of infrastructure	Not significant	Adverse	Habitat reinstatement.	N/A	N/A
Protected species	Disturbance of protected species	Not significant	Adverse	N/A	N/A	N/A

Table 5.15 – Summary of Cumulative Effects

Ecological Feature	Effect	Cumulative Developments	Significance of Cumulative Effect	
			Significance	Beneficial/ Adverse
N/A	N/A	N/A	N/A	N/A

5.15 References

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