

Environmental Impact Assessment Report

Beinneun 2 Wind Farm

Volume 1

Chapter 6: Ecology

Document prepared by Gavia Environmental Ltd and Envams Ltd for
Beinneun 2 Ltd.

July 2025



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6 ECOLOGY

6.1 INTRODUCTION

This Chapter of the Environmental Impact Assessment (EIA) Report evaluates the potential effects associated with the construction, operation and decommissioning of the Beinneun 2 Wind Farm (the 'Development') on Important Ecological Features (IEFs), including designated sites, terrestrial and aquatic habitats, and protected (non-avian) species.

The Site and turbine layout are shown on Figure 4.1 and the Development is described in Chapter 4, Development Description. The Development would be operated for up to 40 years and then decommissioned.

The specific objectives of the chapter are to:

- Describe the ecology baseline;
- Describe the assessment methodology and significance criteria used in completing the impact assessment;
- Identify the Important Ecological Features (IEFs) and describe the potential effects on them, including direct, indirect and cumulative effects;
- Describe the mitigation measures proposed to address likely significant effects; and
- Assess the residual effects remaining following the implementation of mitigation.

6.1.1 Assessment Scenarios

A worst-case approach has been taken to the assessment in this chapter. This includes:

- Assuming that all areas proposed for development, including the full extent of all borrow pit search areas, are developed; and
- Assessment of potential micro-siting of development infrastructure, in accordance with the description set out in Chapter 4.

The Outline Construction Environmental Management Plan (oCEMP), as provided in Technical Appendix A4.1, is assumed to be implemented effectively, in accordance with normal good practice, and this is treated as embedded mitigation (see Section 6.5.2). This accords with the approach taken in EIA Report Chapter 12, Hydrology, Hydrogeology and Peat.

6.1.2 Supporting Information

The following supporting Technical Appendices (TAs) have been prepared as listed below and provided in Volume 3 of this EIA Report:

- TA A6.1: Habitat Report;
- TA A6.2: Protected Species Report;
- TA A6.3: Bat Report;
- TA A6.4: GWDTE Report;
- TA A6.5: Fisheries; and
- TA A6.6: Outline Habitat Management Plan.

The following figures are presented in Volume 2a of this EIA Report:

- Figure 6.1: Site Overview and Ecological Designated Sites / Ancient Woodland Within 5 km.

It should be noted that no separate fisheries figure has been produced; the relevant Figures are shown in the Fisheries report, TA A6.5.

Terms used throughout this chapter are:

- Development: Refers to the whole process involved with the lifetime of the development including construction, operation and decommissioning;
- Site: The area within the application boundary as shown in Figure 1.1.
- Survey Area: The area within which any desk study or ecological survey has been undertaken. This area varies depending on the nature of the survey being undertaken, and these are detailed within the associated Technical Appendices.

6.1.3 Competence

This assessment has been carried out by Gavia Environmental Ltd. The chapter has been authored by Sam Geldard BSc, MSc. The report has been reviewed by Dr. Drew Oliver; BSc (Hons), MSc, PhD. Drew is a full member of four professional bodies including the Chartered Institute of Ecology and Environmental Management (MCIEEM) and a Chartered Environmentalist (CEnv). Drew has over 16 years' experience in ecological consultancy and worked on many renewable EIA projects.

Full quality assurance of all ecology deliverables has been undertaken by Chris Baker MSc, BSc (Hons), CEnv, MCIEEM. The author and review team have a wealth of experience in the field of ecology. Chris has led and coordinated many aspects of the survey for this project and has undertaken multiple ecological EIA Chapter assessments and has worked on a variety of large infrastructure projects across Scotland.

All other staff who have contributed to this Chapter have undergraduate or higher postgraduate degrees in relevant subjects and hold professional membership of the Chartered Institute of Ecology and Environmental Management (CIEEM).

6.1.4 Consultation

A scoping opinion was issued by the Scottish Government Energy Consents Unit (ECU) on behalf of the Scottish Ministers to Beinneun 2 Ltd. The Scoping Opinion is reproduced as Technical Appendix A2.1.

A summary of relevant consultation and the Applicant's response to it is provided in Table 6.1.

Table 6.1: Consultation

Consultees	Response	Applicant Action
Highland Council	<p>Advised baseline surveys of bird and animal interest on Site, to categorically establish species presence and locality on the site.</p> <p>Advised an account of habitats on site should be provided, identifying rare and threatened habitats protected by European or UK legislation, or identified in national and/or Local Biodiversity Action Plans (LBAPs).</p> <p>Habitat enhancement and mitigation measures should be detailed, particularly relating to blanket bog, in the context of biodiversity conservation and inherent risk of peat slide.</p> <p>Details of habitat enhancement programmes (such as native tree planting, stock exclusion, etc.) should be provided for the site.</p> <p>Advised the EIAR should address whether or not development could assist or impede delivery of elements of relevant Biodiversity Action Plans.</p> <p>Expectation of up-to-date NVC survey and commitment to undertake peatland restoration on an area of increased size to that of the application site.</p> <p>Details should be included of all direct, indirect, permanent and temporary impacts to any bog habitat present on site.</p> <p>The assessment should address likely impacts on nature conservation interests of all designated sites within the vicinity of the proposed development. Proposals for mitigation required to avoid impacts or to reduce impacts to a level where they are not significant should be included.</p> <p>The presence of wild deer on site should dictate an assessment of potential impact on deer, addressing welfare, habitats and other interests.</p> <p>Aquatic interests within local watercourses needs addressing, including downstream interests that may be affected by the development, such as 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 to spawning beds / timing of works; and other drainage issues. The EIAR should</p>	<p>A desk-based study and series of field based surveys as set out in the Technical Appendices have been undertaken to assess the potential for significant effects on IEFs.</p> <p>Habitat enhancement measures, undertaken in accordance with landowner plans, the objectives of the LBAP and NPF4 has been drafted in an Outline Habitat Management Plan (OHMP; TA A6.6).</p> <p>The assessment and OHMP consider the impacts of the Development upon bog habitat.</p> <p>The risk of peat slide is discussed in the EIA Report, Chapter 12, Hydrology, Hydrogeology and Peat and Technical Appendix A12.2, Peat Landslide Hazard and Risk Assessment.</p> <p>A Bird Protection Plan is proposed in EIA Report Chapter 7, Ornithology, which addresses all</p>

Consultees	Response	Applicant Action
	<p>evidence consultation input from the local fishery board(s) where relevant.</p> <p>The EIAR should include a map and assessment of impacts upon Groundwater Dependent Terrestrial Ecosystems (GWDTE) and buffers, these habitats are easily damaged by insensitive drainage.</p> <p>Based on NPF4 and in particular Policy 3 of NPF4, a draft or outline Habitat Management Plan (HMP) and Species Protection Plan (SPP) should be produced including proposals for mitigation and enhancement in relation to important habitats and species. Any compensatory planting plans should be carefully considered and included in the HMP. The HMP should include a comprehensive monitoring programme for all habitat improvements, and breeding birds on site. Remote sensing using radar and infra-red cameras should be considered, to help inform future development and decision making within the industry with regards to eagles.</p> <p>The HMP (or other document) should include a protocol for reporting collisions to NatureScot.</p>	<p>potential effects, mitigation and monitoring in relation to birds.</p>
<p>Scottish Environmental Protection Agency (SEPA)</p>	<p>Avoid peatland in near natural condition.</p> <p>It is deemed likely that the development will result in a large number of new watercourse crossings. If a commitment is made that all crossings will be oversized bottomless culverts pr traditional style bridges, SEPA is content that only limited baseline information is required on crossings at the EIA report stage.</p> <p>Based on NPF4 Policy 5, where proposals are on peatland or carbon rich soils the following should be submitted:</p> <ol style="list-style-type: none"> a) Layout plans showing all permanent and temporary infrastructure, with extent of excavation required, clearly demonstrating how mitigation hierarchy has been applied from NPF4. <p>Plans should be overlain on peat depth survey (peat probe locations and interpolated peat depths), peatland condition mapping and NVC survey habitat mapping.</p> <ol style="list-style-type: none"> b) An Outline Peat Management Plan (PMP) c) An Outline Habitat Management Plan <p>The outline HMP should include:</p> <ul style="list-style-type: none"> - Proposals for reuse of disturbed peat in habitat restoration, if relevant. - Details of restoration to compensate for the area of peatland habitat directly and indirectly impacted by the development. - Outline proposals for peatland enhancement in other areas of the site. - Monitoring proposals <p>To support the peat re-use principle, locations should be identified where the addition of excavated peat will enhance the wider site towards a functional peatland system. A location plan of the proposed areas, showing the size of individual and total areas should be provided. Photographs, aerial imagery or surveys to demonstrate the appropriateness of identified areas should be provided, including hydrological consideration and baseline peat condition.</p> <p>Any proposed re-use restoration areas outwith the ownership of the applicant should provide information to demonstrate an agreement in principle with landowner(s), including timescales to ensure measures can be safeguarded in perpetuity as a peatland.</p>	<p>Peatland habitats are considered in this chapter and in TA A6.6, OHMP; the OHMP considers the ecological related concerns raised by SEPA in relation to peatland. The remaining assessment and recommendations are discussed in the EIA Report Chapter 12, Hydrology Hydrogeology and Peat, and Technical Appendix A12.2, Peat Landslide Hazard and Risk Assessment, which, at section 4.2, includes measures to be included in a Peat Management Plan.</p> <p>The NVC survey identified potential GWDTE; Actual GWDTE's are discussed in Technical Appendix A6.5 and in the EIA Report Chapter 12, Hydrology, Hydrogeology and Peat.</p> <p>The use of mitigation including the implementation of PPG and the use of an ECoW during the construction phase off the Development is committed in TA A4.1, oCEMP.</p>

Consultees	Response	Applicant Action
	<p>The layout and development design must avoid impacts to groundwater follow, GWDTE and existing groundwater abstractions.</p> <p>A NVC survey should be provided to include a map demonstrating GWDTE and existing groundwater abstractions are outwith a 100 m radius of all excavations shallower than 1m and outwith 250 m of all excavations deeper than 1m and proposed groundwater abstractions. If the minimum buffers cannot be achieved, a detailed site specific qualitative and/or quantitative risk assessment will be required.</p> <p>In reference to pollution prevention: A schedule of mitigation supported by the above site-specific maps and plans must be submitted. These must include reference to best practice pollution prevention and construction techniques (for example, limiting the maximum area to be stripped of soils at any one time) and regulatory requirements. They should set out the daily responsibilities of Ecological Clerk of Works, how site inspections will be recorded and acted upon and proposals for a planning monitoring enforcement officer.</p>	
<p>NatureScot</p>	<p>NPF4 sets out a new requirement for developments to deliver positive effects for biodiversity, primarily under Policy 3. For national and major developments, or those subject to EIA, Policy 3b notes that proposals will only be supported where it can be demonstrated that they will conserve, restore and enhance biodiversity, including nature networks, so they are in a demonstrably better state than without intervention. The Policy requires that significant biodiversity enhancements are provided, in addition to any proposed mitigation. We recommend these requirements are adopted as part of any future application.</p> <p>The River Moriston SAC is located to the north of the proposed development site and is protected for salmon and freshwater pearl mussel, both of which are highly sensitive to changes in water quality. The Conservation Advice Package has recently been published for this site and may be a useful reference for the applicants.</p> <p>The north of the proposed development site is within the SAC catchment and some of the proposed infrastructure is close to watercourses which drain to the River Moriston or its tributaries, establishing connectivity. There is potential for a likely significant effect, in particular from the risk of silt, peat and pollutant release to watercourses during construction.</p> <p>We recommend that the EIA includes consideration of infrastructure design and layout, slope stability and the site-specific mitigation measures that would be in place to protect water quality within the River Moriston and its catchment from increased sediment loading and pollutants, particularly during construction.</p> <p>We advise that the proposed survey and assessment should also consider any watercourses in the north of the proposed development site if these could be affected by access upgrades or other infrastructure.</p> <p>We are pleased to note that consultation with the Ness District Salmon Fishery Board will be undertaken. We recommend that the applicants request any relevant desk study information they may hold as well as comment on the scope of survey and assessment.</p> <p>Habitats</p> <p>The Scoping Report confirms that habitat surveys are proposed. We recommend that survey results are used to inform the design and layout process, so that the development avoids, where possible, sensitive habitats such as blanket bog and montane heath.</p>	<p>The assessment considers NPF4; throughout the chapter and in the OHMP (TA A6.6).</p> <p>The Ness District Salmon Fisheries Board (NDSFB) completed fish surveys as requested through scoping; their report is included as TA A6.5.</p> <p>An HRA (TA A12.3) has also be prepared to show the consideration of the potential significant effects of the Development on Freshwater Pearl Mussel within the River Moriston SAC.</p> <p>The EIA Report Chapter 12, Hydrology Hydrogeology and Peat, assesses the potential effects on watercourses and hence downstream receptors, cognisant of the measures proposed in TA A4.1, oCEMP.</p> <p>NVC surveys were undertaken as part of the assessment; the survey followed standard industry guidance; the</p>

Consultees	Response	Applicant Action
	<p>Where this is not possible, impacts should be minimised and suitable mitigation, restoration and/or compensation measures be proposed. Assessment should consider the extent of habitat loss and damage, both direct and indirect, temporary and permanent, and suitable mitigation and/or restoration measures be presented in an Outline Habitat Management Plan and Peat Management Plan.</p> <p>It is recommended that the applicants follow this guidance which includes advice on survey and assessment and mitigation and enhancement, including peatland restoration techniques, Habitat Management Plans and the level of information recommended to be included with a future application.</p> <p>NPF4 Policy 5 (Soils) provides protection for carbon-rich soils and peatlands. NPF4 Policy 5d requires that 'where development on peatland, carbon-rich soils or priority peatland is proposed, a detailed site-specific assessment will be required'. Development proposals on peat should be supported by a site-specific and detailed peat survey and a Peat Landslide Hazard Risk Assessment. Policy 3 (Biodiversity) also applies to all development proposals, so any proposal affecting carbon rich soils and peatlands must also take into account the requirements to conserve, restore and enhance biodiversity, including priority peatland habitats.</p> <p>We advise that these site-specific assessments and surveys inform the project design and siting to ensure compliance with the mitigation hierarchy, avoiding impacts to priority peatland habitats as far as possible. Where impacts cannot be avoided, we recommend that restoration to achieve offsetting (i.e. compensation rather than biodiversity enhancement) should be in the order of 1:10 (lost: restored), i.e. 1ha loss of peatland should result in measures to restore 10ha of peatland.</p> <p>Where a proposal raises issues of national interest NatureScot may object to an application.</p> <p>Protected Species</p> <p>We recommend that all survey, assessment and mitigation follows our standing advice. We recommend the survey buffers within this guidance are followed (e.g. for wildcats surveys should include a 200m buffer around the footprint of the development to account for potential disturbance to nearby dens and resting sites). All surveys are also recommended to cover access routes.</p> <p>In addition to the species listed in the scoping report we recommend that surveys for pine marten are also likely to be required if suitable habitat could be affected or is within disturbance distance of the development. The need for freshwater pearl mussel survey and assessment is also possible (see further advice for the River Moriston SAC above) and should be considered in line with our guidance.</p> <p>Bats</p> <p>Around the lower margins of the site close to the forestry and the thin line of woodland up the burn in the east-central portion, there are areas likely to be used by bats, especially on warm, still summer nights. We would therefore not support scoping bats out of the EIA process, but it is possible that we could agree to a reduced level of survey coverage that focuses on the areas and times that we might expect some level of bat activity. We therefore recommend that the applicants contact us directly to agree the scope of survey and assessment for bats.</p> <p>Deer Management</p> <p>If wild deer are present on or use the development site, the EIAR should include an assessment of the potential impacts of the</p>	<p>results feeding into the chapter and Development design. Peat related work, although inherently discussed as part of the habitats, is considered in the EIA Report Chapter 12, Hydrology Hydrogeology and Peat, and Technical Appendix A12.2, Peat Landslide Hazard and Risk Assessment.</p> <p>Protected species surveys (undertaken in accordance with guidance) were completed as part of the assessment as summarised in TA A6.2 and assessed in this chapter.</p> <p>Bat surveys (undertaken in accordance with guidance) were completed as part of the assessment. As requested, bats have been scoped into the assessment. The field work summarised in TA A6.3) and assessed in this chapter.</p> <p>Deer are considered at Section 6.4.4.8.</p>

Consultees	Response	Applicant Action
	<p>development on deer welfare, habitats, road safety, neighbouring and other interests such as nearby protected areas. Where significant impacts may result, a deer management statement should be provided to address the impacts, either as part of a Habitat Management Plan, a stand-alone document or modification of an existing Deer Management Plan.</p> <p>Woodland removal</p> <p>If tree felling will be required as part of the proposed development, we recommend that the applicants contact Scottish Forestry at an early stage to discuss the Control of Woodland Removal Policy and any implications it may have on the development.</p>	<p>No tree felling is proposed as part of the Development.</p>

6.2 LEGISLATION POLICY AND GUIDANCE

The ecology assessment has been written with cognisance to relevant legislation, policy and guidance, notably the following:

6.2.1 Legislation

- Council Directive 92/43/EEC on the Conservation of Natural Habitats and Wild Flora and Fauna (i.e. the “Habitats Directive”)¹; The Wildlife and Countryside Act 1981 (as amended) (WCA)²;
- The Conservation (Natural Habitats &c.) Regulations 1994 (as amended in Scotland) (i.e. the “Habitats Regulations”)³;
- The Wildlife and Natural Environment (Scotland) Act 2011 (as amended) (WANE Act)⁴;
- Nature Conservation (Scotland) Act 2004 (as amended) (NCA)⁵;
- Schedule 9 of the Electricity Act 1989 (as amended by the Utilities Act 2000)⁶; and
- The Protection of Badgers Act 1992 (as amended)⁷.

6.2.2 Planning Policy

- National Planning Framework 4 (NPF4) (Scottish Government, 2023)⁸; and
- Scottish Planning Policy (Scottish Government, 2014b)⁹.

¹ EC (1992). The Habitats Directive. https://environment.ec.europa.eu/topics/nature-and-biodiversity/habitats-directive_en [accessed on 31/7/2025].

² Wildlife and Countryside Act 1981. <https://www.legislation.gov.uk/ukpga/1981/69> [accessed on 31/7/2025].

³ Conservation (Natural Habitats &c.) Regulations 1994. <https://www.legislation.gov.uk/uksi/1994/2716/contents> [accessed on 31/7/2025].

⁴ Wildlife and Natural Environment (Scotland) Act 2011. <https://www.legislation.gov.uk/asp/2011/6/contents> [accessed on 31/7/2025].

⁵ Nature Conservation (Scotland) Act 2004. <https://www.legislation.gov.uk/asp/2004/6/contents> [accessed on 31/7/2025].

⁶ Schedule 9 of the Electricity Act 1989. <https://www.legislation.gov.uk/ukpga/1989/29/schedule/9> [accessed on 31/7/2025].

⁷ Protection of Badgers Act 1992. <https://www.legislation.gov.uk/ukpga/1992/51/contents> [accessed on 31/7/2025].

⁸ National Planning Framework 4 (NPF4). <https://www.gov.scot/publications/national-planning-framework-4/> [accessed on 31/7/2025].

⁹ Scottish Planning Policy. <https://www.gov.scot/publications/scottish-planning-policy/pages/2/> [accessed on 31/7/2025].

6.2.3 Guidance

- Planning Advice Note (PAN) 60: Planning for Natural Heritage provides guidance relevant to this assessment and the Development¹⁰.

Further key guidance documents relating to the assessment of effects of windfarms and solar developments on terrestrial (non-avian) ecological receptors that have been referenced in this assessment include the following:

- The Scottish Biodiversity List (SBL; Scottish Government, 2020)¹¹;
- Highland Nature Biodiversity Plan (covering Inverness and Nairn)¹²;
- Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine (CIEEM, 2024 V1.3)¹³;
- Good Practice During Wind Farm Construction (NatureScot, 2024)¹⁴;
- Planning for development: What to consider and include in Habitat Management Plans (SNH, 2016)¹⁵; and
- Guidance on Assessing the Impacts of Development Proposals on Groundwater Abstractions and Groundwater Dependent Terrestrial Ecosystems (SEPA, 2017)¹⁶.

Where appropriate, more detail relating to specific legislation, guidance or policy is provided in the corresponding Technical Appendix for each specialist input supporting this chapter (i.e. TAs A6.1 to A6.5).

6.3 METHODOLOGY

6.3.1 Impact Assessment Methods

The approach to the Ecological Impact Assessment (EclA) follows the Chartered Institute of Ecology and Environmental Management guidelines (CIEEM, 2024)¹³, which prescribe an industry-standard method to define, predict and assess potential ecological effects to a given proposed development. Starting with establishing the baseline through a mix of desk study and field survey, key ecological features (the IEFs) are identified and those requiring assessment established through a reasoned process of valuation and consideration of factors, such as statutory requirements, policy objectives for biodiversity, conservation status of the IEF (habitat or species), habitat connectivity and spatial separation from the proposed development. From this stage, these features are assessed for impacts with the assumption of this being in the presence of construction industry-standard mitigations to ameliorate impacts as far as practicably possible. Additional mitigation strategies can then be determined to minimise any residual impacts that would otherwise be experienced by the IEF and any opportunities for enhancement identified.

¹⁰ Scottish Government (2000). Planning Advice Note 60: natural heritage. <https://www.gov.scot/publications/pan-60-natural-heritage/> [accessed on 31/7/2025].

¹¹ Scottish Government, 2020). The Scottish Biodiversity List. <https://web.archive.org/web/20240422023328/https://www.nature.scot/doc/scottish-biodiversity-list> [accessed on 31/7/2025].

¹² Highland Nature Biodiversity Plan (2021-2026). https://www.highlandenvironmentforum.info/wp-content/uploads/2021/07/Highland-Nature-Biodiversity-Action-Plan-2021-2026-_compressed-.pdf [accessed on 31/7/2025].

¹³ CIEEM (2024). Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine. <https://cieem.net/wp-content/uploads/2018/08/EClA-Guidelines-2018-Terrestrial-Freshwater-Coastal-and-Marine-V1.2-April-22-Compressed.pdf> [accessed on 31/7/2025].

¹⁴ NatureScot (2024). Good Practice During Wind Farm Construction. <https://www.nature.scot/doc/good-practice-during-wind-farm-construction> [accessed on 31/7/2025].

¹⁵ SNH (2016). Planning for development: What to consider and include in Habitat Management Plans. <https://web.archive.org/web/20240518045813/https://www.nature.scot/sites/default/files/2023-12/160324%20-%20HMP%20guidance.pdf> [accessed on 31/7/2025].

¹⁶ SEPA (2017). Guidance on Assessing the Impacts of Development Proposals on Groundwater Abstractions and Groundwater Dependent Terrestrial Ecosystems. <https://www.sepa.org.uk/media/a1yh0blg/guidance-on-assessing-the-impacts-of-developments-on-groundwater-dependent-terrestrial-ecosystems.docx> [accessed on 31/7/2025].

In summary, the impact assessment process (CIEEM, 2024¹³) involves:

- Identifying and characterising impacts and their effects;
- Incorporating measures to avoid and mitigate negative impacts and effects;
- Assessing the significance of any residual effects after mitigation;
- Identifying appropriate compensation measures to offset significant residual effects; and
- Identifying opportunities for ecological enhancement.

6.3.2 Evaluation Methods for Ecological Features

The approach taken to assess ecological effects follows the guidance document produced by the Chartered Institute of Ecology and Environmental Management (CIEEM)¹³. These guidelines set out the process for assessment through the following stages:

- Describing the ecological baseline in the zone of influence through survey and desk study;
- Assigning a value to Important Ecological Features (IEF) – these are the designated sites, habitats and species of highest ecological value;
- Identifying and characterising the potential effects on these IEF based on the nature of construction, operation and decommissioning activities associated with the Development; and
- Describing mitigation, compensation and/or enhancement measures associated with the Development and assessing residual significance. Further details are provided about key steps in the above process, particularly those in which terminology is defined.

Table 6.2 lists the criteria used to determine the value of ecological features in a geographical context.

Table 6.2: Geographical Evaluation Criteria

Value	Criteria	Examples
International	Nature conservation resource, i.e. designated nature conservation area, habitat or populations of species, of international importance. N.B. For designations, such as a Special Area of Conservation (SAC), this may also include off-site features on which the qualifying population(s) or habitat(s) are considered, from the best available evidence, to depend.	International nature conservation areas: - Any SAC; - Any candidate SAC (cSAC); and - Any Ramsar wetland. Significant numbers of a designated population outside the designated area. A site supporting more than 1% of the EU population of a species
National (i.e. Scotland)	Nature conservation resource, i.e. designated nature conservation area, habitat or populations of species, of national importance. N.B. For designations, such as a Site of Special Scientific Interest (SSSI) or a National Nature Reserve (NNR), this may also include off-site features on which the qualifying population(s) or habitat(s) are considered, from the best available evidence, to depend.	National nature conservation areas: - Any SSSI or NNR designated for biological feature(s). A site supporting more than 1% of the UK population of a species. Nationally important population/assemblage of a European Protected Species (EPS) or species listed on Schedule 5 of the WCA.
Council area (Highland)	Nature conservation resource, i.e. nature conservation designation, habitat or species, of importance on a county scale.	Statutory and non-statutory nature conservation designations: - Any Local Nature Reserve (LNR); - Any Scottish Wildlife Trust (SWT) reserve; - Any Local Biodiversity Site (LBS); and - Ancient Woodland listed on the SNH Ancient Woodland Inventory (SNH, 2010) ¹⁷ .

¹⁷ [http://A guide to understanding the Scottish Ancient Woodland Inventory \(AWI\) | NatureScot](http://A guide to understanding the Scottish Ancient Woodland Inventory (AWI) | NatureScot)

Value	Criteria	Examples
		A council-scale important population / area of a species or habitat listed on the Scottish Biodiversity List (SBL) (Scottish Government, 2013) ¹¹ as requiring conservation action. A county-scale important population/area of a species or habitat listed on the local Biodiversity Action Plan (local BAP). A county-scale important population/assemblage of an EPS or species listed on Schedule 5 of the WCA.
Local (i.e. within 2km of the site)	Nature conservation resource, e.g. a habitat or species of importance in the context of the local district.	A breeding population of a species or a viable area of a habitat that is listed in a Local BAP because of its rarity in the locality. An area supporting 0.05-0.5% of the UK population of a species. A breeding population of a species on the SBL. All breeding populations of EPS, Schedule 5 species.
Less than local	Unremarkable, common and widespread habitats and species of little/no intrinsic nature conservation value.	Common, widespread, modified and/or impoverished habitats. Common, widespread, agricultural and/or exotic species.

Where a feature qualifies under two or more criteria, the higher value is applied to the feature.

Within this chapter any ecological feature of local or higher value is considered an Important Ecological Feature (IEF). These are defined in Sections 6.4.4 and 6.4.5.

6.3.3 Ecological Zone of Influence

The Ecological Zone of Influence (EZoI) is defined as the area within which there may be ecological features subject to effects from the Development. Such effects could be direct, e.g. habitat loss resulting from land-take or removal of a building occupied by bats, or indirect, e.g. noise or visual disturbance causing a species to move out of the EZoI. The EZoI was determined through:

- Review of the existing baseline conditions based on desk study results, field surveys and information supplied by consultees;
- Identification of sensitivities of ecological features, where known;
- The outline design of the Development and approach to construction; and
- Through liaison with other technical specialists involved in the assessment, e.g. hydrologists, ornithologists and landscape specialists.

6.3.4 Characterising Ecological Impacts and Effects

In accordance with the CIEEM guidelines, the following definitions are used for the terms 'impact' and 'effect':

- Impact – Actions resulting in changes to an ecological feature. For example, the construction activities of a development removing a hedgerow; and
- Effect – Outcome to an ecological feature from an impact. For example, the effects on a species population from loss of a hedgerow.

In accordance with the CIEEM guidelines, when determining impacts on IEFs, reference is made to the following:

- Positive or negative – i.e. whether the impact has a positive or negative effect in terms of nature conservation objectives and policy;
- Magnitude – i.e. the size of an impact, in quantitative terms where possible;

- Extent – i.e. the area over which an impact occurs;
- Duration – i.e. the time for which an impact is expected to last;
- Timing and frequency – i.e. whether impacts occur during critical life stages or seasons; and
- Reversibility – i.e. a permanent impact is one that is irreversible within a reasonable timescale or for which there is no reasonable chance of action being taken to reverse it. A temporary impact is one from which a spontaneous recovery is possible.

Both direct and indirect impacts are considered. Direct ecological impacts are changes that are directly attributable to a defined action, e.g. the physical loss of habitat occupied by a species during the construction process. Indirect ecological impacts are attributable to an action but affect ecological resources through effects on an intermediary ecosystem, process or feature, e.g. fencing of a development site may cause scrub to invade marshy grassland.

For the purposes of this assessment, the predicted impacts on an ecological feature are categorised as ‘no impact’, ‘negligible’, ‘low’, ‘medium’ or ‘high’, based on the definitions in Table 6.3.

Table 6.3: Levels of Impact

Level of Impact	Definition
No Impact	No detectable impacts on the ecological resource, even in the immediate term.
Negligible	Immediately detectable impact but reversible within 12 months. Not expected to affect the conservation status of the nature conservation designation, habitat or species under consideration.
Low	Detectable impacts, and may be irreversible, but either of sufficiently small-scale or of short-term duration to have no material impact on the conservation status of the nature conservation designation, habitat or species population.
Medium	Detectable impact on the status of the nature conservation designation, habitat or species population in the medium term but is reversible / replaceable given time, and not a threat to the long-term integrity of the feature.
High	Irreversible impact on the status of the nature conservation designation, habitat or species and likely to threaten the long-term integrity of the feature. Not reversible or replaceable. Will remain detectable in the medium and long term.

The following definitions have been applied in respect to timescales:

- Immediate: Within approximately 12 months;
- Short term: Within approximately 1-5 years;
- Medium term: Within approximately 6-15 years; and
- Long term: More than 15 years.

6.3.5 Determining Ecological Significant Effects

An EclA is undertaken in relation to the baseline conditions that would be expected to occur in the absence of a proposed development and, therefore, may include possible predictions of future changes to baseline conditions, such as environmental trends and other completed or planned development. Both adverse and beneficial impacts/effects are possible.

A significant effect, in ecological terms, is defined as an effect (whether negative or positive) on the integrity of a defined site or ecosystem and/or the conservation status of habitats or species within a given geographical area, including cumulative and in-combination impacts.

In accordance with the CIEEM guidelines¹³, the approach adopted in this chapter aims to determine if the effect of an impact is significant or not based on a discussion of the factors that characterise it, i.e. the ecological significance of an effect is not dependent on the value of the feature in question. Rather, the value of a feature that will be significantly affected is used to determine the geographical scale at which the effect is significant.

In accordance with the current CIEEM guidelines, effects of impacts are assessed in the presence of standard mitigation measures. Additional mitigation may be identified where it is required to reduce a significant effect.

Any significant effect remaining post-mitigation (the residual effect), together with an assessment of the likelihood of success of the mitigation, are the factors to be considered against legislation, policy and development control in determining the application.

In addition to determining the significance of effects on valued ecological features, this chapter also identifies any legal requirements in relation to wildlife.

6.3.6 Temporal Scope

Potential impacts on ecological features have been assessed in the context of how the predicted baseline conditions within the EZoI might change between the surveys and the start of construction.

The scope of the baseline studies required to inform this assessment follows standard best practice and is in accordance with the consultee responses in Table 6.1. The aim of the studies and consultations was to determine the status and distribution of species and habitats (including those associated with designated sites) that may be affected by the Development.

Full scientific species names are provided in the Technical Appendices, whereas only common, vernacular names are used in this Chapter, except in the description of NVC communities.

6.3.7 Desk Study

Data, including desk study records, from the operational Beinneun Wind Farm and Extension applications were also considered. It should be noted that some of the surveys used to inform the desk studies were carried out in 2010 and 2014 to inform the ES for the Beinneun Wind Farm and its Extension.

Where the 2014 surveys had not covered the likely zone of influence of the Development, additional surveys were carried out in 2024. Methods for the field surveys are summarised in the following sections and full methods and results are provided in TA A6.1 to A6.5. Note that these appendices also include, where relevant, the relevant baseline data from the 2024 surveys.

Where appropriate, data was obtained from third parties and is presented in the relevant Technical Appendices. This data was used to confirm the presence of any statutory and non-statutory nature conservation sites, areas of ancient woodland and legally protected or otherwise notable species (i.e. those species of conservation concern, either nationally or within the Highland LBAP, ranging to 2 km of the Site. The search distance was increased depending upon the specific ecological feature (i.e. up to 10 km in the case of sensitive bat roosts).

Key to the assessment process is the collation of historical ecological records through a desk study. These records informed survey effort and provided a historical and regional context for the assessment. Records of notable and protected species within 2 km of the ecology survey area were sought from:

- Inverness Bat Group;
- Highland Biological Recording Group;
- Scottish Wildlife Trust; and
- Highland Council.

The species records returned by the desk study are discussed as part of the baseline description for the relevant species and are presented in the relevant Technical Appendix.

6.3.8 Field Studies

The area within which the field surveys were undertaken varied depending on the features and the industry accepted survey buffers. Details of the extent of each Study Area are further described and presented in the corresponding Technical Appendix and associated Figures.

6.3.9 Survey Limitations

Surveys undertaken are representative of the conditions present during the duration of the survey, due to this, definitive findings are not always possible. It is feasible that species may

use the site seasonally and/or be in populations too low for detection and are therefore not represented in the survey findings or presence is under/overrepresented. It is considered that any such recording is unlikely to alter the conclusions of this chapter.

Survey specific limitations are discussed in the following sections.

6.3.9.1 NVC Survey Limitations

The NVC survey was conducted outwith the flowering season for many species, which, in certain habitats, could limit the capacity to assess the species richness of flowering vascular plants. However, this limitation was unlikely to impact the quality of the results, owing to the nature of the vegetation types on Site, meaning that most species, especially bryophytes and lichens, were identifiable year-round. Furthermore, both surveyors had over 20 years of NVC survey experience in such environments. As such, this is not considered to be a material limitation.

6.3.9.2 Protected Species Survey Limitations

The protected species walkover surveys were conducted outwith the activity periods for reptile and amphibians, reducing the likelihood of reptile or amphibian signs or sightings. However, there is suitable habitat on Site for species including slow worm, common lizard and adder. The operational Beinneun Windfarm Extension was reported to contain common frog and common lizard (from its Environmental Statement, 2014). Survey effort was focused on identifying suitable habitat and features for reptiles and amphibians. This is not considered to be a material limitation.

6.3.9.3 Bat Survey Limitations

Although taken from reputable sources, the bat data obtained throughout the desk study is controlled by third parties, and as such Gavia Environmental Ltd cannot vouch for its accuracy or be held liable for any errors in the data.

A small number of the bat detectors failed during some deployments and did not record any data. However, additional detectors were deployed to ensure that the minimum number of detectors and survey nights completed in suitable conditions) (in accordance with industry guidance) was met. As such, this is not considered to be a material limitation.

At the time of bat detector deployment, the finalised design with turbine locations was not available, so detectors were deployed in representative habitats across the Survey Area. The Site boundary was updated between the autumn and spring seasons, and 2 detectors were moved to new representative positions within the Site boundary. As the detectors covered the Site, this is not considered to be a material limitation.

There are limitations associated with the analysing of the bat activity levels using the online tool Ecobat. This tool depends on third party data and the constant input and use of the service, therefore the accuracy and validity of the results produced requires a substantial number of records to be present. This is not considered to be a material limitation.

6.3.9.4 Fisheries Survey Limitations

The fisheries data was collected by the Ness District Salmon Fisheries Board; Gavia were not involved in the selection of Survey locations, so the assessment is based on the data collected. This is not considered to be a material limitation.

6.4 BASELINE CONDITIONS

This section of the chapter summarises the results of the desk study and field surveys conducted across the Site and respective Study Areas, which provides the baseline conditions from which the impact assessment is based. Detail is provided in the relevant Technical Appendices.

6.4.1 Desk Study

6.4.1.1 Designated Sites

Statutory designated sites of non-avian ecological value that are protected by EU and/or UK legislation and a summary of those within 5 km of the Site boundary is provided in Table 6.4 and shown in Figure 6.1.

No statutory sites, designated for non-avian ecological features were identified within the Site boundary; two such sites were identified within 5 km of the Site boundary (Table 6.4).

No non-statutory designated sites were identified within 5 km of the Site boundary.

Sites designated for geological or ornithological interest were excluded from the study area and are not within the scope of this Chapter.

Table 6.4: Designated Sites within 5 km of the Development

Designated Sites	Relevant Qualifying Features	Location relative to Site boundary
River Moriston SAC	It contains Atlantic Salmon (<i>Salmo salar</i>) and Fresh water pearl mussel (<i>Margaritifera margaritifera</i>) features.	2 km N
Garry Falls (SSSI)	Bryophyte assemblage and upland mixed ash woodland.	3 km SE

6.4.1.2 Ancient Woodland

A total of 34 areas of woodland on the Ancient Woodland Inventory (AWI) are present within 2 km of the Site boundary. One area of ancient woodland, AWI 2944, lies partially within the Site (Figure 6.1).

6.4.1.3 Ecological Information

The results of the desk study, including the external data obtained from the local records centre, are presented in the relevant Technical Appendices.

For the purposes of brevity, all records presented here are relevant to terrestrial ecology.

Data, including desk study records, from the operational Beinneun Wind farm and Beinneun Wind farm Extension were also considered. The species records returned by the desk study are discussed as part of the baseline description for the relevant species.

6.4.2 Field Surveys

Specific details relating to field survey methodologies and results are included within each of the relevant Technical Appendices A6.1 to A6.5 inclusive.

The following section summarises the baseline conditions following these ecological surveys.

6.4.2.1 Habitats

The Habitats Study Area for the Development included the Site boundary and a 250 m survey buffer (see Figures 6.1.1-6 in TA A6.1). The large Study Area assisted with the placement of infrastructure and Site design, due to the requirement to ensure sufficient areas were surveyed to account for the presence of potential GWDTEs, i.e. as per SEPA guidance (SEPA, 2017)¹⁶, as well as informing progressive layout iterations of the Development. The Site was surveyed to the more detailed National Vegetation Classification (NVC) level and the results back-worked to cross-reference with Phase 1 habitat codes.

NVC

All NVC communities (and the non-NVC habitat types) recorded within the Study Area are provided in Table 6.5. This table includes the proportions of each community or habitat type as an area and percentage found within the infrastructure buffers, including proportions within mosaic habitats. The communities are shown on Figures 6.1.1-6 in TA A6.1. Full descriptions of each of the NVC communities, non-NVC communities and associated Phase 1 habitats found within the Study Area are provided in TA A6.1.

The NVC survey identified 26 recognised communities (three are identified only in the target notes as too small to map, and some with associated sub-communities) and three non-NVC habitats within the Study Area. The non-NVC communities present, includes stands of coniferous plantation woodland, arable cropland and river.

The 23 mapped communities are summarised in Table 6.5 below, along with conservation value, potential for supporting GWDTEs and the proportion of the total Study Area. For the purposes of clarity, communities formed from mosaics have been prioritised and allocated by dominant community.

Habitats which were too small to map are listed as target notes, including an area of species-rich *Festuca ovina*–*Agrostis capillaris*–*Thymus praecox* grassland, CG10, one of *Carex rostrata*-*Potentilla palustris* tall-herb fen, S27, and one of *Pinus sylvestris*–*Hylocomium splendens* woodland, W18.

Table 6.5: NVC Summary (Mapped Habitats Only) of the Study Area

NVC Community	Annex 1 Habitat	SBL Priority Habitat	Highland LBAP	Potential GWDTE Status	Extent in Study Area (ha)	% of Study Area
Arable (non-NVC)					1.44	0.06%
H10	Y	Y	Y	Low	65.42	3.52%
H12	Y	Y	Y	Low	48.84	2.62%
H13	Y	Y	Y	Low	8.79	0.47%
H14	Y	Y	Y	Low	16.74	0.90%
H21	Y	Y	Y	Low	85.91	4.62%
M1	Y	Y	Y	Low	34.72	1.87%
M2				Low	0.39	0.02%
M3				Low	0.43	0.02%
M4				Low	18.07	0.97%
M6	Y	Y	Y	High	66.37	3.57%
M10				High	1.78	0.10%
M15	Y	Y	Y	Moderate	642.62	34.53%
M16	Y	Y	Y	High	42.44	2.28%
M17	Y	Y	Y	Low	333.69	17.93%
M19	Y	Y	Y	Low	145.18	7.80%
M21				High	1.78	0.10%
M25	Y	Y	Y	Moderate	226.84	12.19%
PCW (Non-NVC)				Low	87.45	4.70%
U4	Y	Y	Y	Low	16.26	0.87%
U5	Y	Y	Y	Low (U5c Moderate)	4.28	0.23%
U20				Low	7.11	0.38%
W11	Y	Y	Y	Low	6.11	0.33%
Total					1,861.22	100%

Annex 1 Habitats

Some NVC communities can correlate to Annex I habitat types, designated under the Habitats Directive. However, although an NVC community may align with an Annex I habitat type, it does not necessarily mean that a specific area of an NVC community constitutes Annex I habitat. Various factors, including quality, area, geographical location and substrates, all need to be considered in this respect.

The extents and, due to historical agricultural management pressures, often relatively low quality and degraded nature of these potential Annex I habitats within the Study Area mean that none are considered of more than Local area nature conservation value.

Scottish Biodiversity List (SBL) Habitats

The Scottish Biodiversity List (SBL) (Scottish Government, 2013)¹¹ is a list of animals, plants and habitats that Scottish Ministers consider to be of principal importance for biodiversity

conservation in a Scottish context. Scientific and social criteria have been used to define the species and habitats included on the SBL. Scientific criteria include all Priority Species and Priority Habitats included in the now superseded UK Biodiversity Action Plan (BAP)¹⁸ (UK Biodiversity Partnership, 2007 et seq.), which occur in Scotland. This chapter only considers those listed using scientific criteria (the 2024 *UK Biodiversity Framework* replaces the '[UK Post-2010 Biodiversity Framework](#)', published in July 2012, which itself succeeded the UK BAP and '*Conserving Biodiversity – the UK Approach*').

Those habitats referred to in the SBL are highlighted in Table 6.5 as well as in TA A6.1, Habitats, according to their corresponding NVC classifications.

Highland Local Biodiversity Action Plan (LBAP)

The Highland Nature Biodiversity Plan (2021-2026)¹² sets out a number of aims and objectives to help support the over-arching themes of the plan, including protection and enhancement of existing biodiversity of existing habitats. The plan identifies a wide range of local priority habitats and species.

Those habitats referred to in the Biodiversity Plan are highlighted in Table 6.5 as well as in TA A6.1, according to their corresponding NVC classifications.

Groundwater Dependent Terrestrial Ecosystems (GWDTEs)

The Site is located in an area of hilly topography characterised by a mix of shallow peaty soil and numerous, localised areas of deep peat habitat. High and moderate potential GWDTE habitats (see Table 6.5) near to the Site (High: M6, M10, M16 and CG10, Mod: M15, M25, S27 and U6) have been assessed in TA A6.4 as having low actual groundwater dependency due to the following factors which have been verified onsite:

- Thin or absent transmissive superficial layer will result in limited supply to these habitats due to lack of shallow aquifer;
- Very thin layer of peaty soil present with deeper peat nearby which can introduce telluric water;
- Metamorphic bedrock present which is expected to supply limited volumes of water and only via low rate fracture flow;
- Water chemistry readings are in line with ombrotrophic parameters with telluric influence rather than groundwater influence; and
- The significant volumes of overland flow observed from rainfall and snow melt which helps explain dilution of otherwise telluric water chemistry results.

6.4.22 Protected Species

Full details of the survey methods implemented, the field survey results and the legislation protecting each of the protected species referred to below can be found in TA A6.2 and Figure 6.2.1 in TA A6.2.

Table 6.6 below details the protected species evidence recorded during the surveys and their legal protections.

Table 6.6: Protected Species Summary

Species	Status
Badger	No setts were identified within the Site. Camera traps deployed recorded badger foraging and commuting within the Site.
Pine Marten	Deployed camera traps recorded pine marten 18 times; three different individuals recorded. Scats were also found during the surveys. From Figure 6.2.1 in TA A6.2 it can be seen that all evidence of pine marten was recorded either on the Site boundary, or outwith the Site boundary. No evidence of pine marten dens were recorded within the Site. Based on locations of scat and a camera trap which recorded evidence of pine marten, being primarily within plantation woodland to the south and west of the Site, any dens are likely present within these woodland blocks outwith the Site or along the Site boundary bordering plantation.
Otter	No evidence of otter holts was recorded within the Site; otter spraints were identified in the centre of the Site and on the Site boundary in the north west. Camera traps recorded no evidence of otter.

¹⁸

Species	Status
Red Squirrel	Red squirrel feeding signs were observed outwith the Site within the surrounding woodland.
Water Vole	Burrows suitable for water vole were identified on Site, however no definitive signs of recent water vole activity were identified (latrines).
Wildcat	No field signs of wildcat were recorded during the protected species walkover or during the wildcat camera trap surveys. On-Site habitat for the species is sub-optimal.
Reptiles & Amphibians	No sightings or signs of reptiles/amphibians were identified on Site, however suitable habitat exists on Site. Additionally, surveys of the adjacent windfarm, Beinneun Wind Farm, identified common frog, palmate newt, and common lizard. Furthermore, the study area presents good suitability for supporting basking and hibernating reptiles.

6.4.2.3 Bats

The survey methods employed to assess the bat baseline conditions were taken from the latest NatureScot guidance for assessing bats and onshore wind developments (NatureScot 2021)¹⁹ and the 'Bat Surveys for Professional Ecologists: Good Practice Guidelines (Collins, 2023)²⁰. A summary of the results is provided below, but full details can be found in TA A6.3.

Bats: Preliminary Roost Assessment and Ground Level Tree Assessment

No buildings or structures were present onsite, therefore a Preliminary Roost Assessment (PRA) was not undertaken.

A distance of over 450 m is maintained between structures and trees and the nearest turbine location; as such, no further roost surveys (summer or hibernation) were required as the features would not be impacted by the Development (this is far greater than the approved 287.5 m (200 m + turbine blade length (87.5 m)) buffer implemented for bat roosts.

Bats: Automated Bat Detector Surveys

Automated bat detectors (Tittley Anabat Swift detectors with omni-directional microphone on a 1.5 m microphone extension cable) were deployed in fourteen locations within various habitats across the Site as shown in Figure 6.3.1 in TA A6.3. Detector locations were chosen for being close to the proposed turbine locations at the time surveys commenced, although, as discussed in the Limitations Section, due to subsequent design iterations these locations have since changed but in order to maintain continuity in the results each detector was deployed in their original position. The detectors remained in locations of habitat representative of the new turbine locations and so the survey findings remain robust.

The detectors were deployed for periods of over ten days with an aim of recording at least ten days of consecutive bat data each for three seasons (spring, summer and autumn), recording in full spectrum, and a total recording time of 430 nights was achieved, averaging 13 nights per detector per season.

Assessment of Potential Risk

In order to allow an objective assessment of bat activity, a measure of relative activity was obtained using the online tool "Ecobat" (Mammal Society; Lintott et al. 2018)²¹. Using Ecobat, the data gathered at the Site were compared to a stratified reference range of data from other Sites. The data input reveals a percentile score and categorised level of bat activity and the results can be interpreted at the local scale and site scale.

In total, four species (or genera, in the case of more cryptic species) were recorded on the static detectors. These were: soprano pipistrelle (*Pipistrellus pygmaeus*), common pipistrelle (*Pipistrellus pipistrellus*), *Myotis* species and brown long-eared bat (*Plecotus auritus*). Across all detectors for the whole survey period, the total number of passes of all bat species was 2162. The most commonly recorded species was common pipistrelle (70.2% of

¹⁹ NatureScot (2021). Bats and Onshore Wind Turbines: Survey, Assessment and Mitigation.

²⁰ Collins (2023). Bat Surveys for Professional Ecologists: Good Practice Guidelines.

²¹ <https://mammal.org.uk/current-research/bat-survey-tools> [accessed on 31/07/2025].

all bat passes), followed by soprano pipistrelle (28.2% of all bat passes). 11.4% of all bat passes recorded were from Myotis species (1.5%) and brown long-eared bat (0.05%).

Summer 2024

In terms of activity levels at relative Site levels during Summer, were highest at Detector D1 (outwith the Site, within woodland) for Myotis species. For common pipistrelle, activity levels were highest at Detector D11 (southern boundary, within riparian woodland), and for soprano pipistrelle, activity was equally high at Detector D1 and Detector D11. Detector D11 was sited close to riparian birch woodland, which correlates to the higher density of bat passes in this area. Detector D1 was sited within a coniferous plantation woodland, with edge habitat suitable habitat for commuting and foraging pipistrelle and potentially Natterer's bats.

Autumn 2024

Activity levels, in terms of their relative Site levels during autumn were highest at Detector D11 for both common pipistrelle and soprano pipistrelle, with only the two species recorded during autumn. Low/Moderate activity of both species was also recorded at detectors D5 (western part of Site), D9 (southern part of Site) and D13 (south eastern part of the Site). Of the two species, both had six nights of moderate/low activity, with common pipistrelle having 57 nights of low activity and soprano pipistrelle having 38 nights of low activity, with no nights of moderate or higher activity for either species.

Spring 2025

Activity levels during spring provided activity from all four species, with the highest activity recorded at Detector D9 (southwest along woodland edge) for Myotis and at Detector D9 for Brown long-eared. For both common and soprano pipistrelles, activity levels were highest at Detector D9, followed by Detector D7. Two nights of exceptional activity were recorded for Myotis species at Detector D5 and Detector D9.

Using the SNH criteria (SNH 2021), which multiplies site risk (low, 2) against Ecobat activity category, the overall level of risk for each species across the whole site, and per detector and per month can be examined. The median levels of activity were used to calculate the typical site risk level.

Of the species recorded, common and soprano pipistrelle bats are classified as 'moderate risk' and 'widespread' in the wind turbine impact categorisation. Myotis species (Daubenton's and Natterer's) and brown long-eared bats are classified as 'low risk' and 'rarer'. Myotis (Whiskered bats) are 'low risk' and 'rarest' in the wind turbine impact categorisation (NatureScot, 2021).

The stage 1 initial site risk assessment score for the Site is 3 ('Moderate'). When considering the Site within the local landscape, there are similar areas of suitable foraging habitat to the north and south of the Site boundary, with blocks of coniferous plantations as well as broadleaf woodland, which may provide more suitable habitat for foraging, commuting and roosting bats. As well as this, the majority of bat activity recorded within the Site was at one detector location, indicating that bat activity is concentrated towards the birch woodland close to D11. Given this information and the low number of bat species recorded (<5), the Site is considered to constitute a 'low risk' to the conservation status of local bat populations.

An assessment of risk to bats in each season is summarised in Table 6.7.

Table 6.7: Seasonal Bat Risk Assessment

Species	Site Risk Level	Site Activity Levels (based on median percentile)	Status
Summer			
Common Pipistrelle	Moderate (3)	Low (1)	Low (3)
Soprano pipistrelle	Moderate (3)	Low (1)	Low (3)
Myotis sp.	Moderate (3)	Low (1)	Low (3)

Species	Site Risk Level	Site Activity Levels (based on median percentile)	Status
Autumn			
Common pipistrelle	Moderate (3)	Low (1)	Low (3)
Soprano pipistrelle	Moderate (3)	Low (1)	Low (3)
Spring			
Common pipistrelle	Moderate (3)	Low (1)	Low (3)
Soprano pipistrelle	Moderate (3)	Low (1)	Low (3)
Myotis sp.	Moderate (3)	Low (1)	Low (3)
Brown long-eared bat	Moderate (3)	Low (1)	Low (3)

As detailed in TA A6.3, the minimum distance between a turbine base and suitable habitat features for bats is 101.7 m in order to minimise bat collision risk. In this instance habitat features comprise coniferous plantation woodland and pockets of native broadleaf woodland around the edges of Site and within the wider study area including larger plantation to the south of the Site and broadleaf and mixed woodland in the southeast along the Alt Daingean Cleugh. Other burns offer suitable foraging and commuting identified by the bat activity surveys including Allt Achaidh Luachraich in the east of the Site where detectors D14 and D15 were located. All proposed turbine locations are located over 101.7 m from suitable habitat features. The overall risk for all bat species identified within the Site was found to be 'Low'.

Foraging and Commuting

The habitat risk is considered to be 'moderate' according to the NatureScot (2021) guidance. Although the Site and buffer are comprised mainly of heath and blanket bog mosaics, young coniferous plantation and birch scrub woodland, which do not generally provide many roosting opportunities, these habitats provide a vast range of foraging opportunities, across small bog pools and along forest edges. Occasional individual or small stands of mature birch trees on Site can form suitable roosting habitat for small numbers of bats. Streams and bog pools on Site provide high quality foraging opportunities for bats, especially some of the rarer species such as Myotis, as well as wider connectivity to other environments off Site.

The Alt Daingean and associated riparian habitat offers suitability for foraging and commuting alongside several smaller, less wooded cleughs and steep sided burns and is associated with approximately 88% of bat passes recorded in autumn and 70% of passes recorded in summer. This is evidenced by detectors D14 and D15, located between 400 m and 500 m above sea level recording bat passes on several occasions along the Allt Achaidh Luachraich burn and tributaries.

6.4.24 Fish and Fresh Water Pearl Mussel

Fish population surveys, along with habitat and Freshwater Pearl Mussel (*Margaritifera margaritifera*) surveys, were undertaken by Ness District Salmon Fishery Board (NDSFB) in summer 2024 on the Allt Garbh-Dhoire, a tributary of the River Loyne and connected to the Site along the boundary of Site in the northwest. It should be noted that all other survey points lay outwith the Site, to the north toward and including the river Moriston, as a result of the Site boundary at the time of the survey extending further north.

Habitat within all watercourses surveyed provided suitable habitat for salmonids, however there were a number of limiting factors that may prevent viability of fish populations found therein. Gradients were high in all tributaries with waterfalls present, some of which were clearly impassable. One unnamed tributary, and Allt Garbh Doire, were inaccessible to fish

due to a waterfall and manmade structure respectively and this was reflected in the absence of any fish populations. It is likely that these tributaries dry in the summer months with the exception of Allt Bealach Odhar (outwith the Site to the north) and Allt Garbh Doire (on the northwest boundary of the Site).

Salmon and trout were recorded at four of the six sites surveyed (all outwith the Site). Two of these sites were on the main river Moriston (at a location where it is part of the SAC) which included both fry and parr. Salmon parr were recorded on Allt Bealach Odhar (outwith the Site) in moderate densities with fry absent, suggesting that the tributary is utilised intermittently, or by juveniles migrating into the river from the mainstem. A solitary parr was found in an unnamed tributary again suggesting the same however, the nature of the tributary suggests it may dry.

Freshwater pearl mussels are present throughout the River Moriston (the River Moriston is designated as an SAC for the species); however, none were observed during the surveys.

6.4.3 “Do Nothing” Baseline

In the event that the Study Area remained undeveloped, aside from slight variations in populations and their distribution of more mobile species, it is considered unlikely that there would be any significant change to the baseline conditions within the Study Area. There would continue to be cyclical changes to the woodland structure associated with the commercial forestry felling/stocking in the wider survey area. Also any changes in deer management within the Site may give rise to changes to the ground conditions over extended periods of time.

In the absence of the Development, including the potential effects on the weather of climate change (which are summarised in EIA Report Chapter 10, Climate Change), it is likely that the IEFs would generally remain as they are at present, although numbers and distribution of species may fluctuate naturally.

The riparian woodland will continue to mature which may create temporary localised habitat as the canopy naturally closes (as trees mature) and opens (as trees die and fall). Vegetation and habitat composition and extents across the Site may fluctuate marginally in the long-term in line with fluctuations in deer browsing.

6.4.4 Scoped-Out IEFs

Following the collation of the baseline data and the desk study external data collected and following the design mitigation and those measures described in the design layout considerations (see Section 6.5) and project assumptions sections (see Section 6.1), several potential effects on IEFs can be scoped out of further assessment. This is based on the baseline data, the Development proposals and the professional judgement and experience of the authors from other relevant projects in this region.

6.4.4.1 Designated Sites

There will be no direct impact upon any designated site with qualifying ecological features.

Based on the notified reason for designation of Garry Falls (SSSI) and the distance from the Site, it is considered unlikely that the Development would have a significant and adverse impact upon the designation.

The River Moriston SAC is hydrologically linked to the Site, but the risk is scoped out of detailed assessment on the basis of embedded good practice measures, to be implemented during the construction, operation and decommissioning of the Development through a CEMP which will include information of pollution prevention which is the main indirect risk to the SAC. The CEMP will accord with the Outline CEMP provided as TA A4.1.

A Habitats Regulations Appraisal (HRA) of the Development in relation to the River Moriston SAC is provided as TA A12.3 and shows that there is no risk to the integrity of the SAC.

6.4.4.2 Ancient Woodland

There is a single area of ancient woodland partially within the Site. Within 2 km of the Site there are a further 33 areas of ancient woodland stands, see Figure 6.1.

No woodland removal or fragmentation will occur to any AWI site as a result of the Development. With standard mitigation in place, no pollution effects are anticipated. Effects

on ancient woodland and therefore considered to be negligible and as such, have been scoped out of further assessment.

6.4.4.3 **Potential GWDTEs**

Areas of potential GWDTEs were initially defined in terms of their NVC community and cross-referenced with SEPA criteria (SEPA, 2024)²², although an NVC community being described as a potential GWDTE does not necessarily relate to ecological value, and as such GWDTE status has not been used to determine conservation importance in this assessment.

Following SEPA guidance, an assessment (see TA A6.4) determined that although high and moderate potential GWDTE were identified, they have been assessed as having low actual groundwater dependency due to the following factors:

- Thin or absent transmissive superficial layer will result in limited supply to these habitats due to lack of shallow aquifer;
- Very thin layer of peaty soil present with deeper peat nearby which can introduce telluric water;
- Metamorphic bedrock present which is expected to supply limited volumes of water and only via low rate fracture flow;
- Water chemistry readings are in line with ombrotrophic parameters with telluric influence rather than groundwater influence; and
- The significant volumes of overland flow observed from rainfall and snow melt which helps explain dilution of otherwise telluric water chemistry results.

As such, GWDTE have been scoped out of the assessment due to their assessed low dependency.

6.4.4.4 **Habitats**

The habitats present and their respective areas within the site, plus the buffer of 250 m, are presented in Table 6.5. Areas of estimated direct and indirect loss anticipated to occur for all new infrastructure are presented in Tables 6.9a and 6.9b. An estimated total of 31.95 ha of habitat will be directly lost and a further 3.19 ha will be indirectly affected due to the Development.

Coniferous plantation woodland constitutes 4.70% of the study area and U20 Pteridium aquilinum – Galium saxatile community comprises 0.38% of the wider study area. Both coniferous plantation and NVC community U20 are of low conservation value supporting limited biodiversity and potentially preventing more diverse habitat establishment within the study area. Therefore, both habitats would not be subject to significant ecological effects by the Development, particularly considering no coniferous plantation and minimal (0.02 ha) bracken-dominated swards (U20) are to be lost under the proposed infrastructure footprint. As such, both the above habitats are scoped out of the assessment.

Within the study area, native broadleaf woodland comprises approximately 6.11 ha of NVC community W11 Quercus petraea – Betula pubescens – Oxalis acetosella woodland. This native broadleaf community is present along the Cleugh traversing north to south into the Site from more extensive coniferous plantation woodland to the south of the study area. The nearest broadleaf woodland resides over 100 m south of the Development access track and as such is likely outwith the EZol in terms of potential direct impacts from the Development.

In summary, there will be:

- No loss of U5, H13, W11, PCW;
- Less than 1% of direct and indirect habitat loss within the study area:
 - H14 (0.07% / 0.01 ha); and
 - U20 (0.31% / 0.02 ha);
- Less than 0.1 ha of direct and indirect loss within the study area:
 - M10 (0.07 ha / 3.72%);
 - M2 (0.02 ha / 5.6%);

²² Scotland's Environment (2024). Groundwater Classifications. Available online at: <https://map.environment.gov.scot/sewebmap/?layers=groundwaterClassification>

- M21 (0.07 ha / 3.72%); and
- M3 (0.02 ha / 5.17%).

6.4.4.5 Protected Species

NatureScot guidance stipulates that there are some species, which with standard mitigation measures, are unlikely to experience a significant environmental effect to their populations as a result of the construction and/or operation of onshore wind farms. These species do not require surveys to inform the design and assessment of an onshore wind farm development but may require appropriate mitigation to ensure legislative compliance.

Effects on beaver, brown/mountain hare, pine marten, red squirrel, reptile, water vole, and wildcat are scoped out of the assessment due to the absence of protected features, lack of suitable habitat, limited desk-based assessment or field evidence within the Site, and/or lack of potential effects from the Development.

Effects on badger are scoped out of the assessment. Whilst the presence of badger has been recorded within the Site (recorded on camera traps) no setts were located within the study area, the species is widespread across Scotland and is protected for welfare reasons rather than conservation concerns. There will be no woodland removal or habitat fragmentation resulting from construction of the Development and suitable foraging habitats and sett creation opportunities will remain available and extensive within the Site and wider surrounding area. In accordance with NatureScot guidance, it is considered that with the implementation of standard mitigation during construction and operation, there is no likelihood for significant impacts to badger populations as a result of the Development. Badger is therefore scoped out of further assessment.

Effects on otter are scoped out of the assessment. No couches or holts were recorded, but spraints recorded across the Site indicates a presence of otter. The number of watercourse crossings has been minimised and sensitive design of these will allow free passage of otter (a Watercourse Crossings Inventory is provided in TA A12.1). It is considered that with the application of standard mitigation during construction and operation, including pre-commencement surveys, good practice measures to prevent breaches of legislation, there is no likelihood for significant impacts to otter populations arising from disturbance, displacement or accidental mortality during the construction or operation of the Development. Otter is therefore scoped out of further assessment.

No reptiles were recorded during the surveys but the Study Area presents good suitability for supporting basking and hibernating reptiles. Reptiles are mobile species group capable of avoiding disturbance except during hibernation. Best practice mitigation will be implemented during the construction phase and the residual risk to reptile is considered to be low. As such, reptile are scoped out of the assessment.

A SPP (see Section 6.5.2; outline provided in TA A6.6) will be implemented to enforce suitable mitigation measures to ensure compliance with protected species legislation during construction.

6.4.4.6 Bats

Effects on roosting bats are scoped out of the assessment. No potential maternity roosts and/or hibernation/swarming sites have been identified within at least 200 m plus blade tip (i.e., 287.5 m) of proposed turbine locations and there is no likelihood of impacts to such features. Disturbance to and displacement of roosting bats, and damage to roosts, removal of roosts is therefore scoped out of further assessment.

Construction would mainly take place during daylight hours during the season when bats are active (April to October, inclusive), therefore any disturbance for foraging and commuting bats of any species (even high risk) is unlikely to occur or would likely be not significant. As requested by NatureScot, based on the suitable habitat in the south of the Site, foraging and commuting bat species have not been scoped out of the assessment (scoped-in IEFs are set out in Section 6.4.5).

6.4.4.7 Fish and FWPM

Effects on fisheries interests are scoped out of the assessment, on the basis of sensitive scheme design and standard mitigation. Migratory salmonids are unable to access the Site as a result of natural barriers to migration identified downstream of the Development.

Of the watercourses surveyed, only one lay on the Site boundary and fish were absent from it due to an impassable barrier downstream. The Development has the potential to impact negatively on water quality in the absence of mitigation. However, to avoid direct or indirect impacts upon fish, a minimum 50 m buffer distance between infrastructure and watercourses has been maintained, except where an access track watercourse crossing is required. The design of permanent access track water crossings would comply with SEPA good practice guidance to minimise impacts on fish and their habitat (see TA A12.1, Watercourse Crossings Inventory).

EIA Report Chapter 12, Hydrology, Hydrogeology and Peat, assesses potential effects on downstream watercourses/bodies as being negligible, following implementation of the CEMP based on the measures set out in TA A4.1, Outline CEMP. The Outline CEMP includes good practice mitigation for effective silt and pollution prevention and undertaking works in accordance with SEPA best practice guidance. With this standard mitigation in place, water pollution impacts and associated likely significant effects associated with the Development on fish populations are considered unlikely and therefore fish are scoped out of further assessment.

Freshwater Pearl Mussel and the River Moriston SAC are subject to an HRA (see TA A12.3); with the implementation of mitigation discussed above to prevent impacts upon fish populations, no impact upon freshwater pearl mussel is envisaged and the species/designation is scoped out of further assessment.

6.4.4.8 Deer

Construction effects are expected to be minimal due to the timing of works (i.e., primarily during the day, with deer more active during evening/nights), and a short-term construction period (approximately 18 months). If individuals are displaced during construction, there are suitable routes around the Site which will not force deer into areas of risk. As a result of the size and location of the Development, temporary construction period, the retention of woodland, minimal habitat loss, and the extensive suitable habitat and commuting corridors locally within the Site and beyond, no negative effects on deer are predicted. Due to minimal displacement expected outwith the Site during the construction and operation phases, no negative effects, through increased browsing/trampling on surrounding habitats are expected.

6.4.5 Scoped-In IEFs

A summary of IEFs scoped into the assessment is provided in Table 6.8. These comprise Blanket Bog and Wet Modified Bog (treated as a combined receptor) and foraging and commuting bats (as requested by NatureScot).

Table 6.8: Summary of IEF Sensitivity

IEF	Nature Conservation Value	Relevant Legislation / Guidance & Justification
Blanket Bog and Wet Modified Bog	Local	Blanket bog covers 52.2 ha (4.08%) of the Study Area whilst wet modified bog covers a further 155.56 ha (12.19%) (Table 6.5). Both habitats are also present outwith the Study Area boundary. The habitats present extensively across the Site. Blanket bog here is mainly represented by the M17 and M19 communities. The M2 community was also infrequently recorded. Modified bog/wet heath communities recorded comprised M25, M16 and M15 when on peat over 0.5 m in depth. These habitats are associated with SBL blanket bog habitat with some areas also corresponding to Annex 1 type 7130 blanket bog habitat. Despite some of these communities being associated with Annex I and SBL blanket bog classifications, the habitat within the survey area is a degraded resource in relatively poor condition that has been impacted by management practices over time. Therefore, the habitat is considered to have a nature conservation value of Local.
Bats (high-risk collision species/genus: common pipistrelle, soprano)	Site	Bats (high-risk collision species/genus: common pipistrelle, soprano pipistrelle, <i>Nyctalus</i> spp.). All UK bat species are listed on Annex II of the Habitats Directive and are protected under the Habitats Regulations, the Wildlife and Countryside Act 1981 (as amended), the Habitats Regulations. Nine species/genus (including common pipistrelle, soprano pipistrelle, <i>Nyctalus</i> spp.) are also listed on the SBL. Common and soprano pipistrelle

IEF	Nature Conservation Value	Relevant Legislation / Guidance & Justification
pipistrelle, Nyctalus spp.)		<p>are considered to have a favourable conservation status in the UK and Scotland under Article 17 of the Habitats Directive and are listed as Least Concern (LC) under the IUCN Red List criteria. Nyctalus spp. comprise Leisler's bat (<i>Nyctalus leisleri</i>) and noctule bat (<i>Nyctalus noctule</i>). <i>Nyctalus</i> spp. are considered to have a favourable conservation status in the UK (no Scotland specific categorisation), with noctule also listed as LC, and Leisler's as Near Threatened (NT), on the IUCN Red List.</p> <p>Based on the activity recorded, bat is considered to have a nature conservation value at the Site level.</p>

6.5 DESIGN AND EMBEDDED MITIGATION

6.5.1 Design

The ecological baseline has been considered throughout the design process for the Development, and discussed at design meetings where discipline-specific advice has been provided to inform subsequent design iterations. The approach was undertaken with the aim to either eliminate or reduce the potential for any significant effects upon receptors (including IEFs as discussed in this chapter). Ecological factors taken into account included the following:

- Using existing infrastructure as far as practicable;
- A minimum 50 m buffer for any infrastructure or construction activity around all watercourses, except where watercourse crossings/upgrading works are required. The design process has actively minimised the number of watercourse crossings required for associated infrastructure;
- Designing track length and alignment to reduce the extent of new track and number of watercourse crossings required, where feasible considering the topography of the Site;
- Designing track length and alignment to reduce the extent of new track crossing blanket bog and wet heath, where feasible considering the topography of the Site;
- Avoiding peat over 1 m in depth, blanket bog and wet modified bog, and potential high GWDTs for the location of wind turbines and other infrastructure as far as practicable;
- Positioning of turbines to ensure potential bat roosts lie outwith the 287.5 m protection buffer;
- Establishing a 101.7 m buffer from turbine blade tips to edge habitats (where present), across the Site to safeguard bats; and
- The use of floating roads in areas of deeper peat is proposed in order to mitigate for potential hydrological impacts on peaty substrates and wider, connected vegetation.

6.5.2 Good Practice Measures

General good practice measures are set out in the Outline Construction Environmental Management Plan (oCEMP) in TA A4.1. These include the appointment of a suitably qualified Ecological Clerk of Works (ECoW) prior to the commencement of any construction activities. The ECoW will be present and oversee all construction activities where ecological consideration is required, provide toolbox talks to all site personnel with regards to priority species and habitats, as well as undertake monitoring works, oversee the relocation of any stands of nationally important species of plants (i.e., *Juniperus communis* and *Juniperus communis* subsp. *nana*) and briefings to relevant staff and contractors as appropriate. The oCEMP also includes standard measures to protect water quality on Site and downstream, sets out working hours and controls on lighting, dust and noise.

Species Protection Plans (SPP) will be produced in order to safeguard protected species with known presence within the area including pre-construction surveys, sensitive lighting, ramps exiting open excavations and consideration of key foraging areas. These will include standard measures that are not specific to the Development. The SPP will be developed prior to commencement of construction and submitted for the approval of The Highland Council.

6.6 ASSESSMENT OF EFFECTS

Effects on habitats are assessed for the construction phase only, as this is when habitats will be lost. Although most habitat loss is associated with infrastructure required for the operation of the Development, the physical loss of habitat would occur during the construction stage. Any indirect effects on wetland habitats would largely occur during the operational phase as potential drying effects become established. However, these are considered together with construction phase effects.

Effects on bats are assessed for the operation phase only, representing the main phase when any lost habitat will not be available for foraging and commuting bats, although it is acknowledged that the loss of habitat occurs across all phases of the Development.

6.6.1 Potential Construction Phase Effects on Habitats

The following section assesses the effect of these losses for each IEF scoped into the assessment (Blanket Bog and Wet Modified Bog (Local Nature Conservation Value)).

Negative impacts on habitats may include direct losses, e.g. permanent land-take for turbine foundations and other infrastructure, temporary land-take for construction site compounds, as well as temporary disturbance of habitats within and adjacent to work areas. Negative impacts on habitats can also be indirect, e.g. through changed hydrological conditions, and habitat fragmentation.

The main negative effect during the construction stage of the Development will be direct habitat loss (31.95 ha) due to the construction of the turbines and associated tracks, hard-standings, laydown areas, compounds, substation and borrow pits. Much of this infrastructure will be permanent, although the temporary construction compound (0.78 ha) and borrow pits (4.16 ha) will be restored at the end of the construction period. Despite the restoration, and taking a precautionary approach, it is assumed for the assessment that the areas of land-take for infrastructure also represent permanent losses of habitat due to the complexities in re-creating habitat types such as blanket bog and wet heath which rely on a constant water table being achieved.

It is expected that any indirect drainage effects would only impact wetland habitats such as blanket bog and wet modified bog. No indirect drainage effects are expected to impact or alter the quality or composition of non-wetland habitats such as woodland, grassland etc. As such, only direct habitat loss applies to those habitats. Effects on hydrology and hydrogeology are assessed in EIA Report Chapter 12, with all potential effects on receptors assessed as being negligible.

It is expected that any indirect drainage effects would only impact wetland habitats at the Site, including wet modified bog, blanket bog, wet heath, flushes and marshy grassland. Although there may be some construction disturbance experienced by the surrounding drier habitats, such habitats are expected to recover in the short terms and, as such, no indirect drainage effects are expected to impact or alter the quality or composition of dry habitats.

Table 6.9a: Development Infrastructure Areas

Infrastructure Type	Area (ha)
Access Track	18.76
BESS Compound	1.00
Met Mast	0.13
Substation Compound	1.00
Temporary Construction Compound	0.78
Turbine Laydown Areas	10.13
Turbine 5 m Buffer	0.15
Borrow Pits (x4) – Temporary Loss	(4.16)
Total	31.95

Table 6.9b: Estimated Loss of Habitat from Development Infrastructure

NVC Community	Habitat Extent Site (ha)	Direct Habitat Loss (ha)	Direct Habitat Loss %	Area of Direct Loss + 10 % Indirect Loss (ha)	Direct and Indirect Loss %
H10	37.61	0.6	1.59%	0.66	1.75%
H12	32.31	0.54	1.67%	0.59	1.84%
H13	3.37	n/a	n/a	n/a	n/a
H14	4.17	0.01	0.24%	0.01	0.24%
H21	41.68	0.43	1.03%	0.47	1.13%
M1	29.41	0.37	1.26%	0.41	1.39%
M2	0.79	0.04	5.06%	0.04	5.06%
M3	0.79	n/a	n/a	n/a	n/a
M4	16.61	0.19	1.14%	0.21	1.26%
M6	56.20	1.33	2.37%	1.46	2.59%
M10	1.78	n/a	n/a	n/a	n/a
M15	359.48	11.82	3.29%	13.00	3.62%
M16	32.23	1.45	4.49%	1.59	4.93%
M17	275.31	8.95	3.25%	9.84	3.57%
M19	126.52	2.05	1.62%	2.25	1.77%
M21	1.78	n/a	n/a	n/a	n/a
M25	109.62	3.41	3.11%	3.75	3.42%
PCW (Non-NVC)	5.60	n/a	n/a	n/a	n/a
U4	13.89	0.75	5.39%	0.82	5.90%
U5	0.49	n/a	n/a	n/a	n/a
U20	0.97	0.02	2.06%	0.02	2.06%
W11	3.38	n/a	n/a	n/a	n/a
Total	1,153.98	31.95	2.76%	35.15	3.04%

These have been considered separately to permanent infrastructure as it is possible that not all borrow pit areas will be required or fully utilised, and although these areas would be restored at the end of the construction period (and therefore would not show a loss in habitat extent), the resulting habitat following restoration may not be the same as the original due to changes in topographical or hydrological conditions.

6.6.1.1 Effect

Effects upon blanket bog and wet modified bog habitats during construction would be direct (through habitat loss occurring during construction) and indirect (through potential drying effects upon neighbouring blanket bog and wet modified bog habitats). Direct loss would occur in areas where permanent infrastructure such as access tracks, turbines, hardstandings and substation are sited on these habitat types.

The excavation of blanket bog and wet modified bog for temporary infrastructure may also lead to losses due to the long-term effect on the ecological and hydrological structure and function of the habitat type.

6.6.1.2 Magnitude of Effect

The UK has an estimated 2,182,200 ha of blanket bog (JNCC, 2019) of which around 1,759,000 to 1,800,000 ha is in Scotland (JNCC, 2019) (approximately 23% of the land area).

Blanket bog covers 509.19 ha (44.12%) of the site and is indicated by NVC communities M17a, M19a, M17b, M19, M21, M17, M1, M3, M4, M6, M10 and M2. The direct habitat loss of blanket bog is predicted to be 12.93 ha (2.54%) due to permanent infrastructure, with up to an additional 1.29 ha (0.11%) due to indirect habitat loss. This results in a potential total direct and indirect habitat loss of 14.22 ha, equivalent to 2.79% of the blanket bog within the Site.

Wet modified bog covers 501.33 ha (43.44%) of the site and is indicated by NVC communities M15, M16 and M25. The direct habitat loss for wet modified bog/heath is predicted to be 16.68 ha (3.33 %) due to permanent and temporary infrastructure. With a 10% additional loss for indirect impacts, an additional 1.67 ha (0.33 %). This results in a potential total direct and indirect loss of 18.35 ha, equivalent to 3.33% of the wet modified bog within the Site.

Furthermore, there may be some indirect losses because of the zone of drainage around infrastructure. The distance of the effects of drainage on a peatland is highly variable and depends on various factors such as the type of peatland and its characteristics and properties of the peat; the type, size distribution and frequency of drainage feature; and whether the drainage affects the acrotelm, penetrates the catotelm, or both. Consequently, drainage effects can be restricted to just a few metres around the feature or extend out to a greater distance (as per Table 6.9b 10% has been added to account for indirect losses).

It is considered that indirect drainage effects would not have a significant effect on the blanket bog / wet modified bog present in the Site or result in large-scale vegetation shifts to a lower conservation value habitat type. It is most likely that if some drainage effects materialise locally around infrastructure due to the Development, the most likely effect will be a potential change in species cover, or abundance that may result in a subtle NVC community, which may only be apparent in the long term. If severe indirect drying effects are observed long-term then blanket bog communities may transition towards modified bog, or modified bog may transition towards wet heath vegetation on deeper peat.

When considering the scale of the above habitat losses, and accounting for the abundance, distribution, and quality of the habitat within the Site, as well as at the national level, an effect magnitude of Low Spatial and Long-term Temporal is appropriate.

6.6.1.3 **Significance of Effect**

Given the above consideration of nature conservation value, Conservation Status and Magnitude of Effect, the effect significance is considered to be Minor Adverse and **Not Significant** under the EIA Regulations.

6.6.2 **Potential Operation Phase Effects on Bats**

As detailed in TA A6.3, the minimum distance between turbine bases and suitable habitat features for bats is 101.7 m in order to minimise bat collision risk. In this instance habitat features comprise coniferous plantation woodland and pockets of native broadleaf woodland around the edges of Site and within the wider study area including larger plantation to the south of the Site and broadleaf and mixed woodland in the southeast along the Allt Daingean Cleugh. The shortest distance between a proposed turbine and any of these habitats is c. 400 m (which could reduce to 350 m with micrositing). Other burns offer suitable foraging and commuting identified by the bat activity surveys including Allt Achaidh Luachraich in the east of the Site.

Based on the risk assessment undertaken and as discussed in TA A6.3, the overall risk for all foraging and commuting bat species identified within the Site was found to be 'Low'.

Due to the levels of activity on site, and analysis of site risk, an effect magnitude of Low Spatial and Long-Term temporal is considered appropriate for all species.

Given the above consideration of nature conservation value and Magnitude of Effect, the effect significance of collision risk on bat species recorded at the Site is considered Minor Adverse and **Not Significant** under the EIA Regulations.

6.6.3 Potential Decommissioning Phase Effects

During the decommissioning phase, the removal of all above ground infrastructure, except potentially the access tracks, and restoration of these areas will reduce the adverse impact on habitats relative to the operation phase, and no new habitat loss is anticipated.

Effects at/after decommissioning are relative to the baseline, not relative to the operation phase, so effects will remain adverse but will be less than in construction/operation in Section 6.6.1, and **Not Significant** under the EIA Regulations.

6.7 MITIGATION MEASURES AND RESIDUAL EFFECTS

6.7.1 Mitigation Measures

6.7.1.1 Construction Phase Mitigation

General and standard mitigation measures for habitats and species, such as complying with best practice, micro siting and presence of an ECoW will be set out in a detailed CEMP and SPP as described in Section 6.5.2.

No significant construction effects have been identified, and no non-standard mitigation is proposed for the construction phase. However, a number of additional mitigation, compensation and significant enhancement measures are proposed as part of the Outline Habitat Management Plan (OHMP), TA A6.6 and its Figure 6.6.1, and outlined below.

Enhancement and restoration of habitats through the delivery of an HMP would reduce adverse effects on habitats further. Overall, the HMP would aim to achieve significant biodiversity enhancement at the Development, in line with objectives outlined in NPF4 Policy 3. The HMP will include provisions for the protection, maintenance, restoration and/or enhancement of bog habitats locally. Furthermore, the HMP would deliver peatland restoration of an area over approximately 131 ha; this equates to approximately 9 times larger than the area of potential direct and indirect loss (14.4 ha).

The OHMP is based on a number of identified habitat management areas for each respective habitat management and biodiversity enhancement proposal. These habitat management areas will likely be refined following further specialist surveys and feedback from relevant consultees, and all search areas may not be taken forward for the final HMP, and other search areas and/or proposals may also be considered; however, the Applicant remains committed to delivering significant biodiversity enhancement at the Site.

The detailed HMP will be submitted to and approved by Highland Council and NatureScot in advance of construction and would ensure the Development secures significant biodiversity enhancements through restoring degraded habitats and strengthening nature networks.

6.7.1.2 Operation and Decommissioning Phase Mitigation

Although no species-specific mitigation is required, the implementation of the HMP will increase foraging opportunities for bats as well as improving connectivity within the Site.

6.7.2 Residual Effects

6.7.2.1 Construction Phase Residual Effects

Based on implementation of the proposed mitigation, the creation of a detailed CEMP and HMP, no residual effects associated with the construction phase are anticipated.

6.7.2.2 Operation and Decommissioning Phase Residual Effects

Based on implementation of the and HMP, no residual effects associated with construction and decommissioning phases are anticipated.

6.8 CUMULATIVE EFFECTS

The consideration of cumulative effects is to identify situations where effects on habitats or species populations that may be non-significant from individual developments, are judged to be significant when combined with nearby existing or proposed projects.

In the interests of focusing on the potential for similar significant effects, this assessment considers the potential for cumulative effects with other wind farm developments at

application stage (as those sites that are operational or under construction are considered part of the baseline) within 5 km of the Site.

Two windfarms have been identified: Bunloinn Wind Farm and Millenium East Wind Farm. Bunloinn Wind Farm is located at >2.9 km from the Proposed Development and is located on the other side of Loch Loyne from the Proposed Development with no ecological connectivity. Millenium East Wind Farm is located approximately 2.2 km to the north east of the Proposed Development. Millenium East Wind Farm does have an Outline Construction Environmental Management Plan designed to minimise impacts of the development during the construction phase. As Millenium East Wind Farm lies within the jurisdiction of Highland Council, it is anticipated that an OHMP will be required to support the planning application. Given that an OHMP has been submitted to support Beinneun 2 Wind Farm, and it is anticipated that one will be required to support Millenium East Wind Farm, the cumulative effect will be Minor Beneficial and Not Significant under the EIA Regulations.

6.9 SUMMARY AND STATEMENT OF SIGNIFICANCE

Table 6.10 summarises the predicted residual effects of the Development on ecological interests.

Table 6.10: Summary of Effects

IEF	Potential Effect	Significance	Mitigation Proposed	Outcome / Residual Effect
Blanket Bog & Wet Modified Bog – all phases, with the worst-case being construction	Direct and indirect habitat loss	Minor adverse	In addition to standard mitigation (implemented through CEMP), the implementation of an HMP (OHMP provided in TA A6.6 which includes bog and upland habitat restoration.	Not significant
Bats (high-risk collision species/genus: common pipistrelle, soprano pipistrelle, Nyctalus spp.) – operation phase	Injury / mortality	Minor adverse		Not significant
Cumulative effects – none identified				

Through the sensitive design of the Development, and commitment to best practice measures during construction (SPPs, the OHMP, TA A6.6, and the Outline CEMP, TA A4.1), all potential effects on the conservation status of ecological receptors were assessed to be not significant.