Galileo 05 Limited

Lynemore Wind Farm

Environmental Impact Assessment Report (Volume 1)

Chapter 6 – Ecology and Biodiversity

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GALILEO EMPOWER

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6 ECOLOGY AND BIODIVERSITY

6.1 Introduction

6.1.1 This Chapter of the Environmental Impact Assessment (EIA) Report assesses the potential for significant effects upon important ecological features (excluding ornithological features, assessed in **Chapter 7: Ornithology**) in relation to the construction, operation and decommissioning of the Proposed Development as described in **Chapter 2: Proposed Development**.

6.1.2 The assessment is based upon comprehensive baseline data, comprising specifically targeted ecological field surveys of important and legally protected ecological features identified from a desk study and consultation feedback. It draws on pre-existing information, where appropriate, from other studies and survey data sources, and is based on the Guidelines for Ecological Impact Assessment (EcIA) in the UK and Ireland (Chartered Institute of Ecology and Environment Management[1] (CIEEM) and NatureScot's (Formerly Scottish Natural Heritage (SNH)) Environmental Impact Assessment (EIA) Handbook[2]).

6.1.3 The assessment has been carried out by Avian Ecology Ltd. The lead author was Mr Joseph Stevens (Principal Ecologist). Mr Stevens has over eight years in ecological consultancy and has contributed to, authored and reviewed numerous Ecological Impact Assessments (EcIA) and Environmental Statements in relation to transport and renewable energy infrastructure developments. The Chapter has been reviewed by Mr Thomas Goater who has 18 years of ecology consultancy experience, particularly relating to onshore wind energy projects.

6.1.4 This Chapter is supported by the following figures and various technical appendices, which provide further information, which are referenced throughout the text:

- Figure 6.1: Statutory Designated Sites for Ecological Interest
- Figure 6.2: Habitat Study Areas
- Figure 6.3a-e: Habitat Survey Results
- Figure 6.4 Protected Mammal Survey Results
- Figure 6.5: Bat Roosting Survey Results
- Figure 6.6a-c: Bat Activity Index
- Figure 6.7: Fish habitat Survey Study Area and Sample Locations
- Figure 6.8: Fish Habitat Survey Results

6.1.5 The Technical Appendices referred to in the Chapter are as follows:

- Technical Appendix 6.1: Habitats and Vegetation
- Technical Appendix 6.2: Protected Mammals
- Technical Appendix 6.3: Bats

[1] CIEEM (2018, updated 2024). Guidelines for Ecological Impact Assessment in the UK and Ireland. Terrestrial, Freshwater, Coastal and Marine. Chartered Institute of Ecology and Environmental Management, Winchester.

[2] SNH (2018). Environmental Impact Assessment Handbook. V5. April 2018. Inverness

- Technical Appendix 6.4: Fish Habitat.

6.1.6 Note that in the interest of concision, information contained in other chapters and appendices is not repeated herein unless beneficial for understanding.

6.1.7 Only common species names are referred to within the main body of this Chapter, unless it is considered there is potential for confusion, in which case the scientific name is also presented.

6.1.8 In this Chapter, the following terms of reference are used:

- Proposed Development: the physical infrastructure (a full list of components can be viewed in **Chapter 2: Proposed Development**) most often used in this Chapter in reference to the proposed turbines;
- The Site: the area within the application boundary as shown on **Figure1.1** and **Figure 1.2** (**Chapter 1: Introduction**); and
- Study Area(s): these are survey-specific and are defined in the relevant **Technical Appendices 6.1** to **6.4** and illustrated on **Figure 6.1** to **6.8**.

6.2 Statutory and Planning Context

6.2.1 General legislation and planning policy relevant to the Proposed Development are detailed in **Chapter 3: Renewable Energy and Planning Policy**.

6.2.2 Legislation, policy and guidance of specific relevance to Ecology, and taken into account as part of the assessment presented within this Chapter, is outlined below.

Legislation

- Conservation (Natural Habitats, &c.) Regulations 1994, as amended in Scotland by the Conservation (Natural Habitats, &c.) (EU Exit) (Scotland) (Amendment) Regulations 2019 (collectively 'the Habitats Regulations');
- The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017;
- The Wildlife and Countryside Act 1981 (as amended);
- The Wildlife and Natural Environment (Scotland) Act 2011; and
- The Nature Conservation (Scotland) Act 2004.

Planning Policy

- Scottish Government (2008) Scottish Government Planning Advice Note 60: Planning for Natural Heritage 2008[3];
- Scottish Government (2024) The Scottish Biodiversity Strategy to 2045[4];
- Scottish Government (2022) Onshore Wind Policy Statement[5];
- Scottish Government (2023) National Planning Framework (NPF) 4[6];

[3] Available at: https://www.gov.scot/publications/pan-60-natural-heritage/ . Accessed on 14/03/25

[4] Available at: https://www.gov.scot/publications/scottish-biodiversity-strategy-2045-tackling-nature-emergency-scotland-2/. Accessed on 14/03/25

[5] Available at: https://www.gov.scot/publications/onshore-wind-policy-statement-2022/ . Accessed on 14/03/25

[6] Available at: https://www.gov.scot/publications/national-planning-framework-4/ . Accessed on 14/03/25

- The Highland Council (2012) Highland Wide Local Development Plan[7];and
- The Highland Council (2021) Highland Nature: Biodiversity Action Plan 2021-2026[8].

Guidelines

6.2.3 The following best practice guidelines, guidance and associated sources have informed the baseline studies and subsequent assessment presented within this Chapter:

- Guidelines for Ecological Impact Assessment in the UK and Ireland. Terrestrial, Freshwater, Coastal and Marine (CIEEM, 2022)[1];
- NatureScot (2021) 'Assessing the Cumulative Impact of Onshore Wind Energy Developments'[9];
- NatureScot (2018) 'Environmental Impact Assessment Handbook'[2];
- NatureScot (2019, updated 2021) 'Bats and Onshore Wind Turbines: Survey, Assessment and Mitigation'[10];
- NatureScot (2016) 'Carbon and Peatland map'[11];
- NatureScot (2024) 'Standard Advice for Planning Consultants: Protected Species'[12];
- NatureScot (2024) 'Pre-application Guidance for Onshore Wind Farms'[13]
- NatureScot (2023). 'Advising on peatland, carbon-rich soils and priority peatland habitats in development management'[14];
- Marine Scotland Science (2021) 'Freshwater and diadromous fish and fisheries associated with onshore wind farm and transmission line developments: generic scoping guidelines'[15];
- NatureScot (2024) Good Practice During Wind Farm Construction'[16];

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[7] Available at: https://www.highland.gov.uk/info/178/local_and_statutory_development_plans/199/highland-wide_local_development_plan Accessed on 14/03/25

[8] Available at: https://www.highlandenvironmentforum.info/wp-content/uploads/2022/01/Highland-Nature-Biodiversity-Action-Plan-2021-2026-_compressed-.pdf Accessed on 14/03/25

[9] NatureScot (2021) Assessing the Cumulative Impact of Onshore Wind Energy Developments. Scottish Natural Heritage, Inverness.

[10] NatureScot (2019, updated 2021) Bats and Onshore Wind Turbines: Survey, Assessment and Mitigation. Prepared jointly by Scottish Natural Heritage, Natural England, Natural Resources Wales, RenewableUK, ScottishPower Renewables, Ecotricity Ltd, the University of Exeter and the Bat Conservation Trust (BCT) with input from other key stakeholders.

[11] NatureScot (2016). Carbon and Peatland 2016 Map. Available at Available at: https://www.nature.scot/professional-advice/planning-and-development/planning-and-development-advice/soils/carbon-and-peatland-2016-map. Accessed on 14/03/25

[12] NatureScot (2024) Standard Advice for Planning Consultants: Protected Species. Available at: https://www.nature.scot/professional-advice/planning-and-development/planning-and-development-advice/planning-and-development-protected-species Accessed on 14/03/25.

[13] https://www.nature.scot/doc/naturescot-pre-application-guidance-onshore-wind-farms Accessed on 14/03/25

[14] NatureScot (2023). Advising on peatland, carbon-rich soils and priority peatland habitats in development management. NatureScot, Inverness.

[15] Marine Scotland Science (2021) Freshwater and diadromous fish and fisheries associated with onshore wind farm and transmission line developments: generic scoping guidelines. Available at: https://www.gov.scot/publications/freshwater-and-diadromous-fish-and-fisheries-associated-with-onshore-wind-farm-and-transmission-line-developments-generic-scoping-guidelines. Accessed on 14/03/25

[16] NatureScot (2024). Available at: ttps://www.nature.scot/doc/good-practice-during-wind-farm-construction. Accessed on 14/03/25

- Scottish Environment Protection Agency (SEPA) (2017) 'Land Use Planning System Guidance Note 4: Planning Guidance on On-shore Windfarm Developments'[17].;
- SEPA (2017) 'Land Use Planning System Guidance Note 31: Guidance on Assessing the Impacts of Groundwater Abstractions and Groundwater Dependant Terrestrial Ecosystems'[18];
- Scottish Biodiversity List (SBL) 2022[19]; and
- Biodiversity Enhancement Planning Guidance (The Highland Council, 2024)[20].

6.2.4 Guidance and methodologies relevant to specific surveys are provided in the relevant **Technical Appendices 6.1-6.4**.

6.3 Consultation Undertaken

6.3.1 A formal consultation with statutory consultees was undertaken through the production of a Scoping Report, submitted in April 2024. Responses in relation to Ecology were received from the Energy Consents Unit (ECU), NatureScot and The Highland Council (THC), as well as non-statutory consultees Fisheries Management Scotland and the Findhorn, Nairn & Lossie Rivers Trust.

6.3.2 A summary of the issues covered through consultation and scoping (Ecology only) is presented in. **Table 6.1**

Table 6.1: Summary of consultation responses relevant to this Chapter

Consultee	Issued Raised	Response/Action Taken
ECU 6 August2024	Biodiversity enhancements are to be provided in addition to any proposed mitigation. Information on predicted losses and proposed offsetting and delivery of positive effects on biodiversity should be clearly set out in the EIA report.	Mitigation, compensation and enhancement proposals are outlined in **Section 6.8** of this Chapter**.**
	The EIA report should provide: • a baseline survey of the animals (mammals, reptiles, amphibians, etc.) and bird interests on site and have categorically established which species are present on the site, and where they are present. • an account of the habitats present on the site, identifying rare and threatened habitats, and those protected by European or UK legislation, or identified in national or local Biodiversity Action Plans (BAP).	Baseline habitat and species is provided in **Section 6.5** of this Chapter and **Technical Appendices 6.1 – 6.4** . Baseline ornithology is discussed in **Chapter 7: Ornithology** .

[17] SEPA (2017) Land Use Planning System Guidance Note 4: Planning Guidance on On-shore Windfarm Developments. Scottish Environment Protection Agency

[18] SEPA (2017) Land Use Planning System Guidance Note 31: Guidance on Assessing the Impacts of Groundwater Abstractions and Groundwater Dependant Terrestrial Ecosystems. Scottish Environment Protection Agency.

[19] Scottish Government (2020) Scottish Biodiversity List. Available at: Available at: https://www.nature.scot/scottish-biodiversity-list. Accessed on 14/03/25

[20] Available at: https://www.highland.gov.uk/info/1210/environment/68/biodiversity/2 Accessed on 14/03/25

Consultee	Issued Raised	Response/Action Taken

THC
5 August 2024
	The EIAR should provide:
	• baseline survey of the bird and animals on site, established what species are present on the site, and where, before a future application is submitted.
	• provide an account of the habitats present on the proposed development site, identifying:
	  • rare and threatened habitats.
	  • protected by European or UK legislation.
	  • in national or local Biodiversity Action Plans.
	• Detail habitat enhancement and mitigation measures, particularly in respect to blanket bog.
	• Detail any habitat enhancement programmes (such as native-tree planting, stock exclusion, etc.) for the proposed site.
	• address whether or not the development could assist or impede delivery of elements of relevant Biodiversity Action Plans.
	• a specific peat assessment to inform the siting, design, or other mitigation in order to overcome significant effects on peatland and Carbon Rich Soils, Deep Peat, and Priority Peatland Habitat (CPP).
	• an up-to-date National Vegetation Classification (NVC) survey and a commitment to undertake peatland restoration on an area of increased size to that of the application site.
	• details of all direct, indirect, permanent, and temporary impacts to any bog habitat present on the site.
	• likely impacts on the nature conservation interests of all the designated sites in the vicinity of the proposed development and proposals for any mitigation required to avoid or reduce these impacts.
	• an assessment of the potential impact on deer if present, and address deer welfare, habitats, and other interests.
	• address the aquatic interests within local watercourses.
	• a map and assessment of impacts upon Groundwater Dependent Terrestrial Ecosystems (GWDTE) and buffers
		The ecological baseline, impacts and mitigation in relation to protected and notable habitats and species are all outlined within this Chapter and **Technical Appendices 6.1-4** and **Figures 6.1-**.
		A deer assessment is provided in **Section 6.12.**
		Groundwater dependent terrestrial ecosystems are addressed within this Chapter and in detail in **Chapter 8: Hydrology Geology, Hydrogeology and Peat and Appendix 8.7.**

NatureScot 31 May 2024	<u>Habitats</u> Habitat surveys should cover an appropriate buffer to account for hydrological changes and changes to the layout and boundary of the proposal site. Where Annex I or UKBAP Priority Habitats occur, they recommend surveys to NVC level. The development should avoid, where possible, sensitive habitats such as blanket bog and montane heath. 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	Baseline ecological survey methods and results are presented within **Section 6.4 and 5** of this Chapter and **Technical Appendices 6.1-4** and include survey to NVC level. Ecological mitigation, compensation and enhancement is outlined in **Section 6.8** of this Chapter.

Consultee	Issued Raised	Response/Action Taken
	Priority Peatland Refer to: https://www.nature.scot/doc/advising-peatland-carbon-rich-soils-and-priority-peatland-habitats-development-management. Where impacts cannot be avoided, they should be minimised, and our current recommendation is that restoration to achieve offsetting (i.e. compensation rather than biodiversity enhancement) should be in the order of 1:10 (lost: restored)	Priority peatland has been assessed within this Chapter with ecological mitigation, compensation and enhancement is outlined in **Section 6.8** of this Chapter. A detailed peat assessment has been undertaken as part of **Chapter 8: Hydrology Geology, Hydrogeology and Peat.**
	Protected species NBN gateway records should also be reviewed as part of the desk study We note the applicant's intention to scope out a number of protected species from impact assessment. We would however still recommend a brief appraisal is included in the EIAR to justify why they have been scoped out of detailed impact assessment, along with details of survey methods, results and any mitigation and/or Species Protection Plans.	Desk study methods are presented in **Section 6.4** of this Chapter and also **Technical Appendices 6.1-4.** The justification for scoping in or out of ecological receptors is provided in **Section 6.7.**
	Bats Users to check the Mammal Society's Ecobat website for further updates on availability. EIA reports might explain the unavailability of EcoBat, and that alternative analysis should attempt to infer the level of relative bat activity. Data should still be presented in the format suggested at Appendix 1 of the bat guidance.	Detailed discussion of bat surveys and data analysis is provided within **Technical Appendix 6.3.**
	Deer management If wild deer are present on or use the development site, the EIAR should include an assessment of the potential impacts 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.	A deer assessment is provided as **Section 6.12.**

Consultee	Issued Raised	Response/Action Taken
Fisheries Management Scotland 30 May 2024	The proposed development falls within the catchments relating to Findhorn and Nairn District Salmon Fisheries Boards (DSFBs) and the Findhorn, Nairn & Lossie Rivers Trust. It is important that the proposals are conducted in full consultation with these organisations. Due to the potential for such developments to impact on migratory fish species and the fisheries they support, they recommend that these guidelines are fully considered throughout the planning, construction and monitoring phases of the proposed development. • 170412-Guidance-Terrestrial-windfarms.pdf (fms.scot) • DSFB & Trust map – Fisheries Management Scotland (fms.scot)	Findhorn, Nairn & Lossie Rivers Trust have been consulted (see below) Impacts on fisheries have been included in the assessment following relevant guidance, details are provided in **Appendix 6.4: Fish Habitat**.
Findhorn, Nairn & Lossie Rivers Trust 03 June 2024	Their concerns are: Fish habitat survey carried out in Sept 2023 did not include lower sections of the burns, and these are often better areas for fish habitat and fish populations. Survey did not include • the Moy and Funtach Burn; • Loch Moy (where information suggests that Arctic charr may still be present). They would prefer fish habitat survey had been conducted over a wider area and have employed a wider remit to encompass potential effects on fish and habitats downstream from the development. Fisheries should be included in the EIA	Surveys were updated in 2024 and include all sections of watercourse within the updated Application Boundary, and in the wider estate where access rights were available. Waterbodies on neighbouring estates are not within permissible access areas. Good practice to protect watercourses (and so solely aquatic features using them) during construction is embedded in the Proposed Development. Approach to fish surveys, and a standalone fish technical appendix is included in the EIA as **Technical Appendix 6.4** , along with a commitment to a fisheries monitoring and management plan.

6.4 Approach to the Assessment

Scope of Assessment

6.4.1 The assessment presented within this Chapter has been undertaken in accordance with CIEEM guidelines (2018) and considers potential impacts upon ecological receptors from the Proposed Development, throughout the lifetime of the Proposed Development (construction, operation and decommissioning phases).

6.4.2 To ensure proportionality and, in accordance with guidance (e.g. SNH, 2018 and CIEEM, 2018), the focus of the assessment is those species considered potentially sensitive to

the Proposed Development, and which are classed in this assessment as Important Ecological Features ('IEFs'). The identification of IEFs has been determined based upon baseline information, relevant guidance and literature, professional judgement of the author and, where relevant, the opinions of statutory advisory bodies provided through consultation.

6.4.3 A detailed assessment of impacts is not included for all ecological features identified as being present in the vicinity of the Site, e.g., those with populations that are sufficiently widespread, unthreatened or resilient, or species which were only recorded occasionally in very small numbers, do not receive full assessment; as the potential for a significant effect on the population of these features can reasonably be dismissed. Where there is no potential for ecological features to be significantly affected, as evidenced by baseline information, these features are 'scoped out'. Justification is provided for 'scoping in' or 'scoping out' of the assessment (see **Section 6.7**).

6.4.4 Following the principle of proportionate EIA, embedded mitigation is considered at the outset, including standard best practice and construction management measures that would be a core part of the Proposed Development irrespective of the IEFs identified. Further information about embedded mitigation is provided in **Section 6.6.**

6.4.5 Where potential impacts of the Proposed Development are fully assessed, this is undertaken for the Proposed Development itself as well as assessing the potential cumulative impacts with other relevant projects.

Baseline Methodology

Desk Study

6.4.6 A desk study has been undertaken to identify the presence of any designated area for nature conservation in the vicinity of the Site. The search investigated statutory sites within 10 km of the Site and was undertaken using NatureScot Sitelink[21].

6.4.7 The desk study also included data requests to relevant third parties for non-statutory designated sites within 2 km of the Site. Details of the desk study undertaken, including the third parties contacted and requests submitted, are presented in **Technical Appendix 6.1**.

6.4.8 Highland Biological Recording Group (HBRG) were also contacted for records of protected and notable species within 2 km of the Scheme, extended to 10 km for bats.

Field Surveys

6.4.9 The following baseline ecological surveys were completed during the baseline survey period, note Study Areas are defined fully within the relevant **Technical Appendices 6.1 to 6.4**:

- Habitat surveys, comprising:
    - A Phase 1 habitat and NVC survey conducted in October 2023. The Study Area was an early iteration of the Site boundary and the survey

[21] Available at: https://sitelink.nature.scot/home Accessed on:14/03/2025

area included all land within the Lynemore Estate boundary, extended to include a 250 m buffer zone around this area.
    - An NVC survey of two additional areas of land within the Lynemore Estate boundary conducted in May 2024. These areas extended to the north-east corner of the Application Boundary along the Allt na Slanaich, and at the north-west corner of the Site following a smaller burn.
    - A Phase 1 habitat and NVC survey conducted in August 2024 of land extending the southeast corner of the Site plus a 250 m buffer. This was to account for additional proposed turbine locations.
- Terrestrial mammal surveys, comprising:
    - Study Area A was surveyed between May 2023 and October 2023. The survey included forested areas within the Study Area for red squirrel, the Study Area for badger, pine marten and wild cat and the Study Area plus 150m buffer for otter and water vole,
    - Study Area B was surveyed in May 2024. The survey included the Study Area plus 10m buffer for Water vole, the Study Area plus 50 m for badger and red squirrel and the Study Area plus 200 m for otter and pine marten.
- Bat survey, comprising:
    - Walkovers of the Study Area undertaken in May, June, August, September and October 2023;
    - An automated static detector survey at 11 locations within the Site, undertaken in May/June and July/August and September 2023.
- A Fish Habitat Survey completed in September 2023 of all watercourses within the Study Area.

6.4.10 All surveys were completed by suitably qualified ecologists with reference to best practice guidance. Survey methodologies and results are presented in **Technical Appendices 6.1 - 4**.

6.4.11 Survey areas are illustrated on **Figure 6.1 - 6.8.**

Assessment Methodology

6.4.12 The assessment presented within this Chapter has been undertaken following the principals advocated in CIEEM guidance (2018) and in reference to NatureScot guidance (SNH, 2016 and 2018) regarding the assessment of wind farm developments close to designated sites and those located within the wider countryside.

6.4.13 The assessment includes the following stages:

- determination and evaluation of IEFs (Important Ecological Features);
- identification and characterisation of impacts;
- assessment of the significance of any effects;
- outline of mitigation measures to avoid and reduce significant effects (where required);
- identification of appropriate compensation and enhancement measures; and
- assessment of the significance of any residual effects following mitigation.

Characterising Important Ecological Features

6.4.14 The 'importance' of ecological features has been determined with reference to current guidance (CIEEM, 2018 and SNH, 2018), the application of professional judgement and by taking account the results of baseline field and desk study findings.

6.4.15 Importance does not necessarily relate solely to the level of legal protection that a feature receives, and ecological features may be important for a variety of reasons, such as their connectivity to a designated site, rarity, or the geographical location of a population relative to their known range.

6.4.16 In addition, the value of the Site is also considered. For example, a species associated with a nearby internationally designated area will not automatically be given 'international' importance if it is only rarely recorded within the vicinity of the Site. So, whilst the conservation importance of a species is considered, the number of individuals is also taken into account.

6.4.17 For the purposes of this assessment, the importance of an ecological feature is classified, ranging from 'Very High' to 'Negligible', as detailed in **Table 6.2**.

Table 6.2: Criteria for determining importance of ecological features

Importance	Description
Very High – International	An internationally designated site (i.e., Special Area of Conservation (SAC) and/ or Ramsar site or candidate site (cSAC)). Large areas of priority habitat listed under Annex I of the Habitats Directive, and smaller areas of such a habitat that are essential to maintain the viability of that ecological resource. A regularly occurring, nationally significant population of any internationally important species, listed under Annex II or Annex IV of the EU Habitats Directive.
High – National	A nationally designated site (e.g., Site of Special Scientific Interest(SSSI)) or area meeting criteria for national level designations. Significant extents of a priority habitat identified in the SBL, or smaller areas which are essential to maintain the viability of that ecological resource. A regularly occurring, regionally significant population of any nationally important species listed as a SBL priority species and species listed under Schedule 1 or Schedule 5 of the Wildlife and Countryside Act or Annex II or Annex IV of the EU Habitats Directive.
Medium – Regional	Viable areas of key semi-natural habitat identified in the SBL. A regularly occurring, locally significant population of any nationally important species listed on the SBL and species listed under Schedule 5 of the Wildlife and Countryside Act or Annex II or Annex IV of the EU Habitats Directive. Sites which exceed the local authority-level designations but fall short of SSSI selection guidelines, including extensive areas of semi-natural woodland.
Low – Local	Other species of local conservation, specifically those listed by the Highland Local Biodiversity Action Plan (LBAP). Areas of habitat or species considered to appreciably enrich the ecological resource within the local context (e.g., species-rich flushes or hedgerows).

Importance	Description
	All other species and habitats that are widespread and common and which are not present in locally, regionally or nationally important numbers or habitats which are considered to be of poor ecological value.
Negligible - Site	Areas of habitat or species considered of value up to the site only level. Note, these features are not considered in this assessment.

Characterising Impacts

6.4.18 Impacts may be 'adverse' or 'beneficial' as set out below:

- Adverse: an impact which has the potential to decrease the value or status of a feature relative to baseline conditions; or
- Beneficial: an impact which has the potential to increase the value or status of a feature relative to baseline conditions.

6.4.19 Potential impacts upon ecological features are described with reference to their magnitude, their direction (adverse or beneficial) and duration, where this is relevant to understanding the nature of an effect and determining its significance.

6.4.20 For the purposes of the ecological assessment, the temporal nature of potential impacts (duration) has been defined as follows, and refers to the time for which an impact is expected to last before recovery to baseline conditions:

- Negligible: of inconsequential duration;
- Short-term: for 1-5 years;
- Medium-term: for 5-10 years;
- Long-term: for 10-30 years; and
- Permanent: >30 years.

6.4.21 The magnitude of change refers to the size of the impact and is determined on a quantitative basis, where possible, for example the predicted loss of individuals from a population. The criteria used to determine magnitude of change is presented in **Table 6.3**.

6.4.22 Note that it may be impossible to equate an impact to actual population loss, for example, where a species may be displaced from a wind farm site as a result of construction or operational activities, such a loss may be temporary or may reasonably result in the relocation of individuals to suitable habitats elsewhere within the immediate or wider area. Where uncertainty arises, professional judgement is used on the basis of best available evidence, whilst taking a precautionary approach

Table 6.3: Criteria for determining magnitude of potential impacts

Magnitude	Summary
Very Large	The impact (either on its own or in-combination with other proposals) may result in the permanent total or almost complete loss of a site and/ or species status or productivity
Large	The impact (either on its own or in-combination with other proposals) may adversely affect the conservation status of a site and/ or species population, in terms of the coherence of its ecological structure and function (integrity), across its whole area, that enables it to sustain the habitat, complex of habitats and/ or the population levels of species of interest.
Medium	The impact (either on its own or in-combination with other proposals) would not adversely affect the conservation status of a site and/ or species, but some element of the functioning might be affected, and impacts could potentially affect its ability to sustain some part of itself in the long term,
Small	The impact (either on its own or in-combination with other proposals) would not adversely affect the conservation status of a site and/ or species, but some element of the functioning might be affected, and impacts could potentially affect its ability to sustain some part of itself in the long term. Short-term impacts at a Regional level or above
Negligible	A very slight (indiscernible) reduction in a site and/ or species status or productivity and/ or no observable impact. Short-term impacts at a Local level or below.

6.4.23 Sensitivity to change varies between species and between populations of the same species, for example, a population centred on an urban area may be more habituated to anthropogenic change than a population in remote areas. The sensitivity of ecological features is taken into account during the assessment where this information exists.

Assessing the Significance of Effects

6.4.24 CIEEM guidance (2018) defines a 'significant effect' as an effect that either supports or undermines biodiversity conservation objectives for 'important ecological features', or for biodiversity in general.

6.4.25 CIEEM guidance (2018) states that for the Ecology discipline of an EIA a matrix approach and the production of a 'significance score' (as is often used in EIA Reports) should be avoided for this discipline, as this would require creating artificial values that are not easily quantified. Instead, CIEEM guidance uses only two categories to classify effects: 'significant' or 'not significant'.

6.4.26 **Table 6.4** summarises how significant or non-significant effects have been concluded in the assessments.

6.4.27 Significance is determined by considering the importance of the ecological feature and the magnitude of the impact (as set out above) and by applying professional judgement as to whether the integrity of the feature will be affected.

6.4.28 The term ‘integrity’ is used here to refer to the maintenance of the conservation status of a population of a species at a specific location or geographical scale.

6.4.29 Professional judgement takes into consideration species ecology, population trends and evidence from studies of the species and construction/ wind farm interactions, where such evidence exists. Relevant data sources are referenced within the assessment, as appropriate.

6.4.30 Effects are more likely to be considered significant where the ecological feature affected is of higher conservation importance or where the magnitude of the impact is high. Effects not considered to be significant would be those where the integrity of the feature is not threatened, those affecting features of low conservation importance, or where the magnitude of the impact is low. Justification for the conclusions made are provided within the assessment.

Table 6.4: Significance criteria

Significance	Impact	Definition
Significant	Major Adverse / Beneficial	A very high or high magnitude, medium-term or long-term adverse or beneficial effect, or a medium magnitude or above permanent effect, upon the integrity of an ecological feature at a national (Scottish) or international level.
	Moderate Adverse / Beneficial	A medium or high magnitude, medium term or long-term adverse or beneficial effect upon the integrity of an ecological feature at a regional level or above.
Non-significant	Minor Adverse / Beneficial	The impact (either on its own or in-combination with other proposals) would not adversely affect the conservation status of a site and/ or species, but some element of the functioning might be affected, and impacts could potentially affect its ability to sustain some part of itself in the long term.
	Negligible / Low Adverse/ Beneficial	A negligible adverse or beneficial effect upon the integrity of an ecological feature, typically at a site level or below.

6.4.31 Potentially significant effects are assessed at an appropriate geographic scale, however the scale of significance does not necessarily always relate to the importance of an ecological feature. For example, an effect on a species which is considered of national importance, may not have a significant effect upon its national population.

6.4.32 In cases of reasonable doubt, where it is not possible to robustly justify a conclusion of no significant effect, a significant effect will be assumed as a precautionary approach. Where uncertainty exists, this will be acknowledged.

6.4.33 Where the assessment proposes measures to mitigate adverse effects on ecological features, a further assessment of residual effects, taking into account such measures, has been undertaken.

6.4.34 Finally, it should be noted that CIEEM guidelines (2018) state: "*A significant effect does not necessarily equate to an effect so severe that consent for the project should be*

refused planning permission… many projects with significant negative ecological effects have been lawfully permitted following EIA procedures".

Residual Effects

6.4.35 Where the EIA proposes measures to mitigate potentially significant adverse effects on ecological features, a further assessment of residual effects, taking into account any ecological mitigation recommended, will be undertaken.

Cumulative Effects

6.4.36 Potentially significant cumulative effects can result from individually insignificant but collectively significant actions taking place over a period of time, or concentrated in a location.

6.4.37 For aquatic features, potential cumulative effects are likely to be significant only for other developments located relatively close (i.e., within 2 km) and within the same hydrological sub-catchments.

6.4.38 For (non-avian) species potentially significant cumulative effects are only likely where other developments are located within the regular range of more mobile species (e.g., bats or otter). Cumulative impacts have therefore been considered where relevant within 10 km of the Proposed Development for longer term impacts associated with the operational phase.

6.4.39 In accordance with NatureScot guidance, a cumulative impact assessment need only be undertaken where it is considered that a proposal could contribute to significant cumulative impacts. Cumulative effects are therefore only considered for features with above negligible magnitude residual effects, as there is no likelihood that negligible residual impacts will measurably contribute to cumulative effects. Similarly, cumulative impacts to habitats are only considered where there will be an above negligible adverse magnitude effect of loss of habitats following any mitigation and/or enhancement proposals.

6.4.40 Due to the nature of the species and impacts assessed, no non-wind developments were included in the consideration of cumulative effects, and no such developments were identified for consideration in the ecology assessment by consultees during the scoping process.

6.4.41 The potential for cumulative impacts has therefore been assessed with reference to NatureScot (2021) guidance, and encompasses the effects of the Proposed Development in-combination with:

- existing wind farm developments, either operational or under construction;
- consented wind farm developments, awaiting implementation; and
- wind farm applications awaiting determination within the planning process with relevant ecological information in the public domain.

6.4.42 Those wind farm developments which have been withdrawn and/or refused are not considered unless an appeal is currently in progress and information is available. Projects at pre-application or scoping stage have also been excluded as there is typically little or no information on their predicted impacts to inform the cumulative impact assessment.

6.4.43 Whilst single or small-scale wind turbine developments (three turbines or less) may contribute to cumulative effects, these have been scoped out of assessment, in line with NatureScot guidance as applications for such developments do not generally consider the potential for impacts upon ecological features in sufficient detail to inform meaningful assessment, and information is often not readily available for small-scale developments.

Difficulties and Uncertainties

6.4.44 No substantive limitations were encountered during the course of the assessment.

6.4.45 Limitations associated with specific surveys are provided in the relevant technical appendices. Where uncertainties remain a precautionary approach to the assessment has been taken.

6.5 Existing Environment

6.5.1 Baseline conditions are outlined in the text below, and are fully described in the following appendices and their associated figures:

- Technical Appendix 6.1: Habitats and Vegetation;
- Technical Appendix 6.2: Protected Mammals;
- Technical Appendix 6.3: Bats; and,
- Technical Appendix 6.4: Fish Habitat.

Designated Sites

6.5.2 The Site does not form part of any statutory designated site for nature conservation with cited ecological interest. Statutory (international and national) designated sites located within 10 km of the Site are shown on **Figure 6.1** and summarised in **Table 6.5**. Note, only those with ecological interests are considered here, with ornithological sites addressed in **Chapter 7**.

6.5.3 There are no non-statutory designated sites with ecological interests located within 2km of the Site.

Table 6.5: Statutory Designated Sites with Ecological Interests

Designated Site	Distance and Direction from Site	Qualifying Interests
Carn nan Tri-tighearnan SAC	4.8 km northeast	Blanket bogs (if active)
Carn nan Tri-tighearnan SSSI	6.3 km northeast	Blanket bog Subalpine dry heath
Slochd SAC	8.0 km southeast	European dry heaths
Loch Ruthven SSSI	9.3 km northwest	Mesotrophic loch

Designated Site	Distance and Direction from Site	Qualifying Interests
Loch Ruthven SAC	9.4 km southwest	Oligotrophic to mesotrophic standing waters with vegetation of the *Littorelletea uniflorae* and/or of the *Isoëto-Nanojuncetea* Otter
Loch Ruthven Ramsar	9.4 km southwest	Two nationally scarce species of orchid

Ancient Woodland

6.5.4 The Site includes multiple areas identified as ancient woodland of semi-natural origin within the Ancient Woodland Inventory (AWI). The access and associated fill are located within an area an area of Long Established Woodland (of plantation origin) listed on the AWI. These are shown on **Figure 13.4** For assessment in relation to the AWI designation see **Chapter 13: Other Issues**.

Habitats and Vegetation

6.5.5 Detailed information is provided within **Technical Appendix 6.1.**

6.5.6 The Carbon and Peatland Map (SNH, 2016) available on Scotland's Environment Web shows that the majority of the Site comprises Class 1 peatland, defined as "Nationally important carbon-rich soils, deep peat and priority peatland habitat areas likely to be of high conservation value"

6.5.7 The Native Woodland Survey of Scotland identifies the majority of the woodland present within the Site as upland birchwood with smaller areas of juniper scrub. Several areas of existing woodland within the Site are listed on the Ancient Woodland Inventory Scotland as detailed above.

6.5.8 The survey recorded 15 Phase 1 habitat types within the Site. Those habitats correspond to 19 NVC communities, with three habitat types which did not fit any NVC community and so were recorded as their Phase 1 habitat category only.

Annex I Habitats

6.5.9 Habitats meeting (or potentially meeting) the definition of Annex I habitats within the Site are as follows:

- A2 Scrub: W19
- D1.1 Dry heath - acid: H12, H13, H16, H21;
- D2 Wet heath: M15; and,
- E1.6.1 Blanket bog: M17, M19

6.5.10 The W19 scrub community corresponds to '5130 *Juniperus communis* formations on heaths'

6.5.11 The dry heath communities on the Site all fall under the '4030 European dry heaths' Annex I habitat type. The M15 wet heath communities correspond to '4010 Northern Atlantic wet heaths with *Erica tetralix*'.

6.5.12 The M17 and M19 blanket bog communities do qualify as Annex I '7130 Blanket bogs' habitat type, despite the signs of modification and peat erosion noticed across the bog surface, however eroded gully floors, which are bare of vegetation, are assigned as 'E4 – Bare Peat' are excluded as both Annex I and as Priority Peatland Habitat.

Scottish Biodiversity List

6.5.13 Habitats meeting (or potentially meeting) the definition of SBL habitats within the Site are as follows:

- A1.1.1 Broadleaved woodland – semi-natural (A1.1.1): W4, W17;
- D1.1 Dry heath - acid: H12, H13, H16, H21;
- D2 Wet heath: M15;
- E2.1 Acid / neutral flush: M4, M5, M6;
- E2.2 Basic flush: M10;
- E2.3 Bryophyte dominated spring: M32
- E1.6.1 Blanket bog: M17, M19; and,
- B1.1 Acid grassland – unimproved: U5

6.5.14 The above-mentioned Annex I qualifying communities also have corresponding habitats listed on the SBL, these are 'blanket bogs' and 'upland heathland'.

6.5.15 In addition, the flush communities (M4, M5*, M6, M10) and the M32 spring community all qualify as 'upland flushes, fens, and swamps' SBL habitats and the W4 and W17 woodland comes under the 'upland birchwoods' SBL habitat category.

6.5.16 U5 *Nardus stricta - Galium saxatile* grassland is included on the SBL, currently only as a watching brief. The dry modified bog H9 does not meet the definition of any habitat on the SBL, but has potential for recovery to blanket bog.

6.5.17 Species-rich examples of M23 rush pasture can qualify as SBL 'upland flushes, fens, and swamps' habitat but the M23b sub-community (as occurs on the Site) is excluded from this category.

Priority Peatland

6.5.18 Habitats meeting (or potentially meeting) the definition of Priority Peatland habitats (as defined by NatureScot (2023), within the Site are as follows:

- E1.6.1 Blanket bog: M17, M19; and,
- D2 Wet heath: M15

6.5.19 Based on guidance from NatureScot (2023) M17 and M19 blanket bog communities are classed as priority peatland and are communities where impacts from development have the potential to raise issues of national interest. However, the M17 and M19 on the Site, include obvious and widespread signs of modification and peat erosion, suggesting that these communities are not in a near-natural condition.

6.5.20 A Peatland Condition Assessment has been undertaken (provided as Annex 1 to Technical Appendix 6.5) finding that there was no near-natural peatland within the Study area, with peatland habitats within the Study Area were almost entirely modified or actively eroding, with only 1.4% retaining near-natural features. As such, peatland

habitats within the Site are not considered of national importance. Peatland was found to have extensive erosional gullies and modifying influences including grazing pressure from deer and at lower elevations sheep, evidence of historic burning, self-sown coniferous trees (more frequent at lower elevations), and artificial drainage at lower elevations close to the transition between blanket bog and dry heath habitats.

6.5.21 M15 wet heath can also be classed as priority peatland, although is a community where Proposed Development is unlikely to raise issues of national interest. Furthermore, the description of the M15b and M15c communities on the Site suggests that much of it is in a degraded state, fragmented, and in places only occurring on shallow peat.

Groundwater dependent Terrestrial Ecosystems

6.5.22 Many of the extensive flush and spring features on the Site can signify groundwater dependent terrestrial ecosystems (GWDTEs). Guidance from SEPA (2017) indicates that the M5, M6, M10 and M32 communities all have possible high groundwater dependence, though in the case of M5 and M6 actual dependence on groundwater is contingent on hydrogeological setting. The M23 rush pasture and wet W4 woodland also indicate possible high groundwater dependence and the M15 wet heath possible moderate groundwater dependence, again dependent on hydrogeological setting.

6.5.23 GWDTEs do not in and of themselves have any ecological designation or protection, although may have hydrological designation, for example under the Water Framework Directive. Groundwater dependent terrestrial ecosystems may however also align with other ecological designations (e.g., Annex I or SBL). A detailed assessment of groundwater dependent terrestrial ecosystems is provided in **Chapter 8: Hydrology, Geology, Hydrogeology and Peat**

Other Habitats

6.5.24 Several other habitats with no particular ecological status were observed across the Site, including:

- E1.8 Dry modified bog: H9
- B1.1 Acid grassland – unimproved: U4
- B1.2 Acid grassland – semi-improved: U4
- B5 Marshy grassland: M23
- A1.2.2 Coniferous Plantation
- E4 Bare Peat; and,
- G2.4 Running water - dystrophic.

Terrestrial Mammals

Otter

6.5.25 No existing records of otter were returned by the HBRG

6.5.26 Evidence of otter has been observed within the Site, including along the Allt na Slanaich watercourse forming the Site's northern boundary and along the Allt na Loinne Moire

located within the Site. Detailed information is provided within **Technical Appendix 6.3** and confidential **Technical Appendix 6.3a**.

6.5.27 These watercourses are considered to provide suitable habitat for foraging otter and opportunities for holt creation. No resting sites (or potential resting sites) have been identified within at least 200 m of the Proposed Development's Footprint.

Water Vole

6.5.28 No existing records of water vole were returned by the HBRG.

6.5.29 A single potential burrow was observed along the upper reaches of the Allt na Loinne Moire, although no other confirmatory evidence (e.g., latrines, feeding remains) was present to allow this observation to be definitively assigned to water vole.

6.5.30 Watercourses within the Site are considered potentially suitable for water vole, particularly during wetter years.

Badger

6.5.31 No evidence of badger was observed within the Site however a single latrine was observed north of the Site within the Survey Area. No setts were located within the Survey Area.

6.5.32 It is considered that badger are present within the wider area, and may utilise suitable habitats within the Site, including woodland and scrub, for foraging and sett creation.

Red squirrel

6.5.33 A review of the Saving Scotland's Red Squirrels website revealed several records of red squirrel within 2 km of the Site, with the nearest dated from 2023 and located approximately 47 m northeast of the Site, adjacent to the neighbouring woodland.

6.5.34 Surveys identified two records of feeding remains and five records of dreys within the Site, all located within woodland north of the settlement of Lynebeg.

6.5.35 Forested habitats within the Site are considered suitable for red squirrels for foraging and drey creation.

Other Notable Mammal Species

6.5.36 HBRG returned four records of mountain hare and three records of pine marten. No evidence of pine marten, wildcat or mountain hare was recorded within the Site or Survey Area.

6.5.37 Areas of woodland within the Site are considered suitable to support wildcat, though no evidence of presence or potential den features were recorded.

6.5.38 Habitats within the Site, including heathland habitats, grassland and bog, are considered suitable to support mountain hare.

Bats

Desk Study

6.5.39 Data provided by HBRG included two records of Daubenton's bat (one roost), one record of brown long-eared bat and one-record of soprano pipistrelle (roost).

Foraging and Commuting

6.5.40 Due to the exposed nature of habitats and the lack of potential roost locations the foraging resource within the Site is assessed to be low and limited to evenings with calm weather conditions.

6.5.41 Three confirmed bat species were recorded at sample locations during the static detector surveys: common pipistrelle (65% of calls), soprano pipistrelle (30%), and brown long-eared bat (2%). Bat calls assigned to Myotis genus were also recorded (2%), and in all cases the species were considered to be either Daubenton's bat or Natterer's bat.

6.5.42 In general, the level of bat activity on the Site was very low and there was no notable spatial pattern to where bats were recorded. Lowest levels of activity were recorded in autumn (1 contact) and spring (19 contacts), with the highest number of contacts recorded in the summer (145 contacts) survey periods.

6.5.43 A detailed assessment of bat activity is provided within **Technical Appendix 6.3**.

Roosting

6.5.44 Surveys identified several trees / groups of trees potentially offering bat roosting potential within the Survey Area. With the exception of a single stand of downy birch suitable with potential roost features (PRF) suitable for use by multiple bats (PRF-M), including as a maternity roost, all other trees were assessed as having PRFs suitable only for individual bats (PRF-I).

6.5.45 Rock exposures to the northwest of the Site were assessed as offering moderate suitability for roosting bats, including for hibernating, while a shooting hut along the Site southern boundary was assessed as offering negligible to low potential to support roosting bats.

6.5.46 A detailed assessment of bat roosting potential is provided within **Technical Appendix 6.2** and **Technical Appendix 6.3**.

Fisheries

6.5.47 A detailed assessment of fisheries potential is provided within **Technical Appendix 6.4**.

Fish Habitat

6.5.48 Nine watercourses that form part of the River Findhorn and River Nairn catchments are present, c. 4 km at the closest to both rivers. The upper sections of these watercourses provide no functional fish habitat.

6.5.49 The mid and lower sections of watercourses within the Study Area are typically on moderate to steep gradients (>6% and often significantly more) and generally provide no functional fish habitat, although very localised and small areas of stabilised

gravels/pebbles were noted locally, and may provide limited spawning habitat for localised populations of brown trout.

6.5.50 Habitat that provides mixed juvenile habitat for salmonids was infrequently present, but the generally steep gradient and subsequent lack of suitable, fixed substrates within the Study Area makes these sub-optimal. No areas of high calibre salmonid spawning habitat were noted for Atlantic salmon or sea/brown trout, with no sections of deep stabilised "gravels" or pebbles being identified. However, very localised and small areas of stabilised cobbles/pebbles/gravels suitable for spawning brown trout were recorded on the lower sections of the Allt na Loinne Moire. It is likely that the lower sections of the Allt na Loinne Moire support a small, local population of brown trout.

6.5.51 No lamprey nursery or spawning habitat was noted, and watercourses throughout the Study Area are considered too steep for lamprey.

Freshwater Pearl Mussel

6.5.52 No suitability for freshwater pearl mussel was identified within the Study Area.

Other Species

6.5.53 NatureScot guidance[13] advises 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 EcIA but may require appropriate mitigation to ensure legislative compliance.

6.5.54 On this basis, specific baseline surveys for reptiles, amphibians and invertebrates have not been undertaken to inform the design and assessment of the Proposed Development.

6.5.55 HBRG returned two records of reptiles (both common lizard), three records of amphibian (two frog and one toad) and five records of notable invertebrates (two butterfly, two Diptera and one Hymenoptera).

6.5.56 It is likely given the habitats present that the site supports populations of common reptile and amphibian species, including common lizard, frog and toad. The Site may also support an assemblage of invertebrates typical of the habitats present, including some notable species.

Future Baseline

6.5.57 In the absence of the Proposed Development, it is assumed for the purposes of assessment that current management practices would likely continue for the foreseeable future, resulting in no significant change to the habitats present within the Site, their condition, or the species they support.

6.5.58 A degree of natural variation in the distribution and size of species populations is likely to occur as a result of natural processes (e.g. succession and habitat maturity), and is to be expected regardless of the Proposed Development; however, these habitats are likely to support a broadly similar assemblage.

6.5.59 It is possible that anthropogenic climate change may result in the occurrence of species previously unrecorded as species from southern Britain and continental Europe migrate

northwards. Further, the spread of invasive non-native species could result in changes to native species distributions within the Site. Furthermore, anthropogenic climate change may influence the resilience of some habitats and species. Such variations over time would occur independently of the Proposed Development.

6.5.60 Whilst short-term and small-scale variability in populations and distributions may occur, and revisions to conservation statuses and designations are also possible, such changes would be unlikely to qualitatively alter the conclusion of the assessment presented within this Chapter and have been accounted for through application of a precautionary approach and appropriate mitigation.

6.5.61 As such, the ecological baseline as outlined above is considered to represent a realistic ecological baseline for the lifetime of the project.

6.6 Embedded Mitigation

6.6.1 Embedded mitigation is built into the project to minimise the potential for any negative impacts associated with the Proposed Development, to ensure adherence with good practice guidance and compliance with wildlife legislation, such measures being followed irrespective of the impact assessment's conclusions.

6.6.2 Where embedded mitigation is considered sufficient to prevent significant adverse effects on ecological features, this has been taken into consideration in the assessment in order to produce an EIA which is proportionate to the risks posed by the Proposed Development.

Design Considerations

6.6.3 The adoption of embedded mitigation measures to avoid or minimise adverse impacts upon ecological features has been included as part of the iterative design process for the Proposed Development. Details of the scheme design evolution are provided in **Chapter 2.**

6.6.4 Measures to avoid or otherwise and minimise potentially adverse impacts upon ecological features during scheme design include:

- Land-take: the Proposed Development's infrastructure has been designed to minimise the requirement for land-take and the number of watercourse crossings and woodland felling;
- In so far as possible, those most ecologically valuable habitats (such as Annex I and priority peatlands) have been avoided;
- Watercourse crossings: The Proposed Development has been designed to minimise the requirement of new watercourse crossings. Where this was not possible, new watercourse crossings have been designed in accordance with best practice guidance and enable the free passage of fish and other wildlife;
- Watercourse buffers: A minimum 50 m buffer between the Proposed Development's infrastructure has been applied around all watercourses marked on the 1:50,000 Ordnance Survey mapping, having regard to other ecological and non-ecological constraints; and,
- Bat habitat features: A minimum 50 m buffer (from blade tip) has been applied to all watercourses marked on the 1:50,000 Ordnance Survey mapping, and

woodland edges, as outlined in NatureScot guidance (2021), having regard to other ecological and non-ecological constraints.

Best Practice Measures

Construction Environmental Management Plan (CEMP)

6.6.5 A Construction Environmental Management Plan (CEMP) would be prepared for the Proposed Development in consultation with THC, NatureScot and other relevant stakeholders.

6.6.6 The CEMP would be finalised and implemented in agreement with relevant stakeholders by way of a suitably worded planning condition.

6.6.7 The CEMP, once finalised, would include for all standard measures to ensure the Proposed Development is constructed in accordance with industry good practice applicable at the time of commencement. The CEMP would also include for habitat restoration measures following the completion of construction works.

6.6.8 The CEMP would include Species Protection Plans (SPPs) and pre-construction protected species surveys for all protected species potentially present, to enable legislative protection

6.6.9 The CEMP would include for the appointment of an Ecological Clerk of Works (ECoW) during construction, whose role would be to see that works are undertaken in accordance with environmental legislation and good practice, including making contractors aware of any ornithological sensitivities and restrictions

6.7 Predicted Effects

6.7.1 The CIEEM guidelines (2018) stipulate that it is not necessary to carry out a detailed assessment of impacts upon ecological features that are sufficiently widespread, unthreatened and/or resilient to impacts of a development proposal.

6.7.2 As such, the assessment presented within this Chapter considers the effects upon designated sites for nature conservation and ecological features which are considered ‘important’ on the basis of relevant guidance and professional judgement.

6.7.3 Where ecological features are not considered so important as to warrant a detailed assessment or where they would not be significantly affected on the basis of baseline information, these are ‘scoped out’ of the assessment (as justified below), and are not considered further within this Chapter. Mitigation measures for such features may, however, still be outlined as appropriate, to reduce and/or avoid any potentially adverse effects, or to ensure legislative compliance.

Scoping of Ecological Receptors

Statutory designated Sites for Nature conservation

6.7.4 Given the high degree of spatial separation, the static nature of the qualifying features (habitats and flora), lack of connectivity and so likely impact pathways and/or major infrastructure (e.g. road network; A9) between designated sites in the nearby and wider

surrounding area (as identified in **Table 6.5**) and the Site, effects on the qualifying features of the following statutory designated sites are scoped out of assessment:

- Carn nan Tri-tighearnan SAC;
- Carn nan Tri-tighearnan SSSI;
- Slochd SAC;
- Loch Ruthven Ramsar; and,
- Loch Ruthven SSSI.

6.7.5 Additionally, for the same reasons, it is considered that effects on the static qualifying interest (oligotrophic to mesotrophic standing waters) of the Loch Ruthven SAC is scoped out of assessment. Additionally, otter, a mobile qualifying interest of the Loch Ruthven SAC, is also scoped out of assessment, and as agreed in consultation with NatureScot. With the application of embedded mitigation to prevent accidental mortality and disturbance, it is considered that there is highly unlikely to be any impact on the Loch Ruthven SAC in respect to its otter population.

6.7.6 Embedded mitigation and good practice, including SPPs and pre-construction protected species surveys for all protected species potentially present, is built into the Proposed Development to enable legislative protection; as such, otter as a mobile qualifying features of Loch Ruthven SAC is scoped out of assessment, and also for consideration of Likely Significant Effects (LSE) in relation to Habitats Regulations Appraisal (HRA) for the SAC .

6.7.7 All statutory designated sites for nature conservation are scoped out of detailed assessment.

Habitats

6.7.8 Habitats scoped into the assessment are restricted to those which meet at least one of the following:

- May correspond with habitats listed on Annex I of the EU Habitats Directive;
- Represent priority peatland habitats; and/ or
- Are included on the SBL.

6.7.9 Impacts to common and widespread habitats listed in **Section 6.5.23** of low sensitivity and/or conservation interest (e.g. semi-improved acid grassland, improved grasslands, conifer plantation, scrub) are scoped out of the assessment.

6.7.10 For discussion regarding the potential for areas of this habitat to be a groundwater dependent terrestrial ecosystem, and so protected under the Water Framework Directive, see **Chapter 8: Hydrology, Geology, Hydrogeology and Peat.**

Otter

6.7.11 Evidence of otter has been noted within the Site, principally located at lower elevations. However old spraints were found along the Allt na Slanaich at an altidude of c. 450 m and approximately 150 m from the Proposed Development. No resting sites have been identified within at least 200 m of the Proposed Development (the distance within which NatureScot standing advice states disturbance has the potential to affect breeding sites), with the closest resting sites located substantially further away. As such, the survey

results only suggest occasional use of higher altitude areas by otter, with resting sites and more frequent foraging at lower elevations. It is therefore concluded that that there is no potential for significant adverse population level effects on otter.

6.7.12 Embedded mitigation and good practice, including SPPs and pre-construction protected species surveys for all protected species potentially present, is built into the Proposed Development to enable legislative protection; as such, otter is scoped out of assessment, and also for consideration of LSE in relation to HRA for the SAC.

Water Vole

6.7.13 A single burrow was identified within the Site, however no other confirmatory evidence of water vole was observed. Following a precautionary approach, it is assumed that the burrow could be attributed to water vole. The burrow is located approximately 60 m from the Proposed Development, and as such no impacts are considered likely to occur.

6.7.14 Embedded mitigation and good practice, including SPPs and pre-construction protected species surveys for all protected species potentially present, is built into the Proposed Development to enable legislative protection. As such, water vole is scoped out of assessment.

Badger

6.7.15 Upland habitats in which the majority of works are located are considered sub-optimal for badger, however the species may utilise suitable habitats at lower elevations including for foraging and sett creation. No evidence of badger was recorded within the Site, although latrines were located within the Study Area indicating the species is present within the wider landscape. However, this was located a substantial distance (>1 km) from any proposed works.

6.7.16 It is however acknowledged that badger are a mobile species able to colonise a new areas and excavate new setts in a short period of time.

6.7.17 Embedded mitigation and good practice, including SPPs and pre-construction protected species surveys for all protected species potentially present, is built into the Proposed Development to enable legislative protection. As such, badger is scoped out of assessment.

Red Squirrel

6.7.18 Red squirrel are known to be present within woodland where the proposed access route is located and which will require some tree felling. Felling may result in direct impacts (e.g., loss of dreys), disturbance and fragmentation, particularly during construction of the proposed access. It is expected that squirrels would cross the access track, measuring approximately 6 m in width, once installed. Given the relatively limited loss of habitat within a small area of woodland that is already fragmented from habitat in the wider area it is concluded that that there is no potential for significant adverse population level effects on red squirrel.

6.7.19 Embedded mitigation and good practice, including SPPs and pre-construction protected species surveys for all protected species potentially present, is built into the Proposed

Development to enable legislative protection. As such, red squirrel is scoped out of assessment.

Other Notable Mammal Species

6.7.20 Mountain hare are likely to be present within suitable upland habitats within the Site. Pine marten may also be present at lower altitudes, for example within woodland habitats which also provide suitable habitat for wildcat, if present.

6.7.21 Embedded mitigation and good practice, including SPPs and pre-construction protected species surveys for all protected species potentially present, is built into the Proposed Development to enable legislative protection. As such, it is proposed that other notable mammal species, including pine marten, wildcat and mountain hare, are scoped out of the assessment.

Bats

6.7.22 The foraging resource within the Site is assessed to be low and bat activity is limited to evenings with calm weather conditions. Several trees/ groups of trees potentially offering bat roosting potential were identified within the Site offering PRF-I, with a single tree offering PRF-M. Rock exposures were assessed as offering moderate suitability for roosting bats, including for hibernating.

6.7.23 Embedded mitigation including SPPs and pre-construction surveys of trees identified for felling (or where disturbance to roosting bats could potentially result from felling) will be drafted post-consent and implemented in full before any tree felling or construction commences, to prevent breaches of legislation pertaining to bat roosts. Disturbance to and displacement of roosting bats, and damage to roosts, are therefore scoped out of further assessment.

6.7.24 Construction would mainly take place during daylight hours during the season when bats are active (April to October, inclusive). Therefore any construction-related disturbance of foraging and commuting bats of any species is highly unlikely to occur and is therefore scoped-out.

6.7.25 During operation, there is the potential for bats utilising the Site for foraging and commuting to collide with turbines or experience barotrauma resulting in mortality. As such, bats are scoped into the assessment with regards to operational impacts only.

Fisheries

6.7.26 Watercourses within the Site generally provided suboptimal habitat for notable fish species, including salmonids and lamprey with only very localised and small areas suitable for spawning brown trout on the lower sections of the Allt na Loinne Moire. No suitability for freshwater pearl mussel has been identified within the Study Area.

6.7.27 Good practice scheme design and embedded mitigation measures, including a Water Quality and Fish Monitoring Plan and measures to avoid and/or minimise the potential for pollutant impacts upon aquatic habitats and ensure the free passage of fish within the Site is maintained, are embedded within the Proposed Development, and included within the CEMP. As such, fisheries are scoped out of assessment.

Other Species

6.7.28 NatureScot guidance[13] advises 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 EcIA but may require appropriate mitigation to ensure legislative compliance.

6.7.29 On consideration of the desk study and of the extent and nature of the Proposed Development, invertebrates, amphibians and reptiles are scoped-out of detailed impact assessment.

Summary of Receptors Scoped Out

6.7.30 As stated above, the following features are not considered to be 'IEFs' in the context of the Site:

- Designated sites;
- Common and widespread habitats, mosaic habitats with limited protected habitat components, and/or habitats impacted to a very limited extent;
- Otter;
- Water vole;
- Badger;
- Red squirrel;
- Other notable mammal species, including:
    - Mountain hare;
    - Pine marten; and,
    - Wildcat
- Roosting bats;
- Other notable species, including:
    - Invertebrates;
    - Amphibians; and
    - Reptiles.
- Fish; and
- Freshwater pearl mussel.

6.7.31 The likelihood of significant effects to their populations or extents at any geographical scale is considered to be negligible and not significant, and so they are assigned less than Local importance and scoped out of further consideration within this Chapter.

6.7.32 Indirect construction-phase impacts to habitats associated with pollution and dust (to be prevented via controls implemented under the CEMP), and all operational phase impacts (to be prevented via operational management plans and reasonable avoidance measures) are scoped out, with the exception of collision risk to bats during the operational phase.

6.7.33 Notwithstanding the scoping out of the above identified species and impacts from detailed EcIA, consideration is given to the provision of precautionary mitigation measures to ensure legislation compliance with regards the protection afforded to these species under the Habitats Regulations and the Wildlife and Countryside Act 1981, as relevant.

Impact Assessment

6.7.34 A summary of IEFs scoped-in for detailed assessment in the context of the Proposed Development is provided in **Table 6.6.**

Table 6.6: Statutory Designated Sites with Ecological Interests

Important Ecological Feature	Importance	Justification
Semi-natural broadleaved woodland	Local	Semi-natural broadleaved woodland habitat is included on the SBL, however it is a generally widespread habitat type. Within the Site, only very small areas are likely to be affected by the Proposed Development, and here occurring in mosaic with other habitat types. As such semi-natural broadleaved woodland within the Site is not considered of a sufficient extent to represent Regionally important examples of this habitat and is considered to be of no greater than Local importance.
Blanket bog	Regional	Blanket bog is a priority habitat in both an international and national context and is included on both Annex I of the EU Habitats Directive and the SBL. The NatureScot Carbon and Peatland Map 2016 shows that this habitat is likely to be widespread regionally; the Site principally comprised of Class 1 peatland (nationally important carbon-rich soils, deep peat and priority peatland habitat, likely to be of high conservation value) which is widely present in the Region. The Peatland Condition Assessment found no Near-Natural peatland within the Study Area with only 1.4% retaining Near-Natural features. No habitat at the Site is considered likely to raise issues of national interest (see Technical Appendix 6.1). Blanket bog habitat at the Site is therefore considered to be important in Regional terms.
Dry dwarf shrub heath	Local	Dry heath is a priority habitat on Annex I of the EU Habitats Directive and on the SBL, however within the Site this habitat occurs in mosaic with acid grassland and is common and widespread and not considered an example of priority habitat. Only very small areas of this habitat type have the potential to be affected by the Proposed Development. As such dry heath at the Site is not considered of a sufficient extent or quality to represent Regionally important examples of this habitat and is considered to be of no greater than Local importance.
	Local	Flush and spring habitat is included on the SBL however within the Site these are generally species poor and/ or associated with degraded habitats (e.g.,

Important Ecological Feature	Importance	Justification
Flush and spring – acid/ neutral		peat haggs). Only very small areas of this habitat type have the potential to be affected by the Proposed Development. As such, flush habitat within the Site is not considered of sufficient extent or quality to represent Regionally important examples of the habitat and considered to be of no greater than Local value.
Acid grassland - unimproved	Local	Acid grassland is included on the SBL, however within the Site this habitat type is present within mosaics and in localised areas only. Only very small areas of this habitat type have the potential to be affected by the Proposed Development. As such, examples of unimproved acid grassland within the Site which may potentially be affected are not considered to be of sufficient extent or quality to represent Regionally important examples of this habitat and is considered to be of no greater than Local importance.
Bats	Local	All bat species are protected under the Habitats Regulations, the Wildlife and Countryside Act 1981 and the Nature Conservation (Scotland) Act 2004. They are also SBL priority species. However, common and soprano pipistrelle (the most frequently recorded species, together comprising 95% of calls) are listed on the Red List for Britain's Mammals as 'Least Concern' at both a British and Scottish scale. Common and soprano pipistrelle are considered to be IEFs in the context of the Proposed Development and are subject to further impact assessment below, however, as discussed above it is considered that the potential for impacts is limited to collision effects during the operational phase. Given the common and widespread nature of common and soprano pipistrelle, these species are considered to be of no greater than Local value in the context of the Site.

6.7.35 Potential effects in the absence of mitigation in relation to the construction and operational phases of the Proposed Development are identified as a result of the Proposed Development alone, with cumulative effects with other wind farm developments considered in **Section 6.10**.

6.7.36 Impacts arising from the decommissioning phase of the Proposed Development have not been presented in detail because they are considered to be of a similar nature to the construction impacts identified but of a likely smaller scale and shorter duration. Therefore, effects arising from decommissioning are anticipated to be broadly similar in nature to, but of a lower-level effect than, those arising during the construction phase, and with all infrastructure removed and habitats reinstated to pre-development conditions in accordance with relevant good practice guidance and methods applicable at the time of decommissioning.

Construction

Habitats

6.7.37 Following application of embedded mitigation there are two main ways by which habitat features may be affected during the construction phase of the Proposed Development:

- direct loss – the loss of habitats and vegetation under the footprint of the Proposed Development infrastructure (permanent and temporary); and
- indirect loss – calculated for IEF habitats that contain priority peatland or are a GWDTE located within 5 m of floating tracks or 10 m of all other infrastructure footprint, to account for potential changes in habitat vegetation structure due to drying effects as a result of construction works. For all other habitats an indirect loss is calculated within 2 m of the infrastructure footprint, to allow for a construction corridor and additional habitat disturbance during construction works.

6.7.38 The potential for effects upon the hydrological supporting conditions of bog, water quality, soils and peat as a result of surface and groundwater flows, sediment and contaminant discharges, soil loss, erosion and compaction are detailed where relevant within **Chapter 8: Hydrology, Geology, Hydrogeology and Peat**.

6.7.39 For the purposes of assessment, a precautionary approach has been taken which assumes that direct habitat loss and indirect loss of habitats represents a permanent, irreversible adverse effect. Calculations of direct habitat loss have been carried out based on the total earthworks footprint, in accordance with guidance[14], with indirect loss calculated within a 10 m buffer (or 5 m for floating access tracks) where the IEF habitat contains priority peatland or otherwise groundwater dependent terrestrial ecosystem, or a 2 m buffer for all other habitats. In practice, areas of habitat beyond the direct loss may not be subject to any indirect impacts. It is also considered that the majority of the earthworks and areas of indirectly/temporarily affected habitat will be fully and successfully restored during habitat reinstatement following construction in accordance with a CEMP, agreed prior to construction commencing and so estimated losses represent a precautionary worst-case scenario, this is discussed further in the impact assessment where relevant.

6.7.40 **Table 6.7** details the estimated direct and indirect/temporary habitat losses as a result of the construction of the Proposed Development, and potential effects on habitats considered to be IEFs in the context of the Proposed Development. Note that the Site supports shallow peat in mosaic with deeper areas, and so the presence of soil designated as 'peat' is not necessarily correlated in all cases with the overlying recorded habitat community, and both NatureScot and SEPA recognise the distinction between peatland habitats and peat soils. As such the extent of loss of polygons assigned as blanket bog habitat will not correspond with calculations of extraction and loss of peat soils, as addressed in **Chapter 8: Hydrology, Geology, Hydrogeology and Peat**. Similarly, the extent of loss of polygons assigned as 'woodland habitat' will not necessarily correspond with the calculations of the absolute loss of tree cover. As such, the numbers presented below as derived from GIS and based on habitat survey polygons will differ from the numbers presented **Chapter 8: Hydrology, Geology, Hydrogeology and Peat** and **Chapter 13: Other Issues** respectively.

Table 6.7: Extent of loss of Important Ecological Feature habitats

Phase 1 Habitat Type of IEF Habitat[22]	Phase 1 code	NVC	Direct Loss (Ha)	Indirect Loss (Ha)	Total direct loss (ha)	Total indirect loss (ha)	Total loss (ha)
Semi-natural broadleaved woodland	B1.2/ A1.1.1	U4a(50%)/W17(50%)	0.011	0.003	0.011	0.014	0.025
	A1.1.1/E1.6.1/D1.1	W17d(70%)/M19a(20%)/H12a(10%)	0	0.011			
Blanket bog	E1.6.1	M17a(70%)/M19a(30%)	24.913	19.626	26.631	20.96	47.591
		M19a					
		M19c					
	E1.6.1/A1.2.2	M19a	0.059	0.118			
	E1.6.1/D1.1	M19a(90%)/H12a/b(10%)	1.24	0.474			
	A1.2.2/E1.6.1	M19a(20%)	0.419	0.742			
		M19a(40%)					
Dry dwarf shrub heath	D1.1/B1.1	H12a(70%)/U4a(30%)	0.017	0.009	0.305	0.222	0.527
	D1.1/B1.1/E2.1	H12a(35%)/H21(35%)/U4a(10%)/M6c(20%)	0.081	0.009			
	D1.1/B1.1/A2	H12a(60%)/U4a(35%)/W19(5%)	0.046	0.016			
	D1.1/A1.1.1	H12a(50%)/W17d(50%)	0.09	0.029			
	D1.1/A1.1.1/A2	H12a(85%)/W17d(10%)/W19a(5%)	0	0.001			
	D1.1/A1.1.1/E2.1	H12a(40%)/W17d(40%)/M6c(20%)	0.071	0.158			

[22] Where a mosaic exists with more than one IEF the most dominant IEF is used for broad grouping

Phase 1 Habitat Type of IEF Habitat[22]	Phase 1 code	NVC	Direct Loss (Ha)	Indirect Loss (Ha)	Total direct loss (ha)	Total indirect loss (ha)	Total loss (ha)
Flush and spring – acid/ neutral	E2.1	M6c	0.222	0.136	0.258	0.218	0.476
	E2.1/E1.6.1	M6c(20%)/M19a(80%)	0.036	0.082			
		M6c(30%)/M5(10%)/M19a(60%)					
Acid grassland - unimproved	B5/A2/B1.1	M23b(95%)/W19(5%)	0.06	0.175	0.060	0.030	0.090

Scrub

There would be no loss of scrub habitat in which the w19 NVC community is a dominant part. This habitat is present as part of habitat mosaics, but only as a small percentage (5%). As such, overall scrub losses are considered minimal in the context of the overall woodland resource within the Site.

Semi-natural Broadleaved Woodland

6.7.41 Losses to infrastructure within areas mapped as IEF semi-natural broadleaved woodland total 0.025ha. Of this, all direct losses (0.011ha) are associated with a woodland/ grassland mosaic with the remaining losses resulting from indirect impacts. As such overall woodland losses are considered minimal in the context of the overall woodland resource within the Site.

6.7.42 As identified in **Chapter 13: Other Issues**, loss of forestry cover will be compensated in accordance with the Control of Woodland Removal Policy, and which will include native broadleaved planting as appropriate and as agreed with Scottish Forestry. As such, the overall loss of semi-natural broadleaved woodland associated with the Proposed Development is considered to constitute an impact of no greater than low adverse magnitude at a Local scale, resulting in a minor adverse effect which is not significant in the context of the EIA Regulations.

Blanket Bog

6.7.43 Blanket bog is extensive within the Site, totalling 599ha within the Site (either alone or as the dominant habitat within a mosaic). The scheme will result in losses of 47.591 ha, comprised of 26.631ha direct loss and 20.96ha indirect loss. Losses are equivalent to approximately 8% of blanket bog habitats present within the Site.

6.7.44 Temporary losses account for 13.76ha of blanket bog loss and so following post-construction restoration the total permanent direct and indirect loss of blanket bog to the infrastructure footprint will be 33.831ha, reducing permanent losses to approximately 5.6% of the blanket bog resource within the Site.

Blanket bog across the Site characterised by extensive erosional gullies and various modifying influences including grazing pressure from deer and at lower elevations sheep, ,evidence of historic burning, self-sown coniferous trees (more frequent at lower elevations) and artificial drainage at lower elevations close to the transition between blanket bog and dry heath habitats. Only 1.4% of habitats within the Study Area comprised modified peatland with Near-Natural features retained, with these found at risk from ongoing erosion.

6.7.45 As such, in the absence of mitigation, the overall loss of blanket bog associated with the Proposed Development is considered to constitute a permanent impact of large adverse magnitude at a Regional scale, resulting in a moderate adverse effect which is significant in the context of the EIA Regulations.

Dry Dwarf Shrub Heath

6.7.46 Dry dwarf shrub heath is extensive within the Site, totalling 119 ha (either alone or as the dominant habitat within a mosaic). The scheme will result in losses of 0.527 ha, comprised of 0.305 ha direct loss and 0.222 ha indirect loss. As such, losses are equivalent to less than 0.5% of the dry dwarf shrub heath resource within the Site and

are considered minimal in the context of the overall resource of this habitat type within the Site.

6.7.47 As such, the overall loss of dry dwarf shrub heath associated with the Proposed Development is considered to constitute a permanent impact of no greater than low adverse magnitude at a Local scale, resulting in a minor adverse effect which is not significant in the context of the EIA Regulations.

Flush and Spring- Acid/ Neutral

6.7.48 The scheme will result in losses of 0.476 ha, comprised of 0.258 ha direct loss and 0.218 ha indirect loss. Generally, these are species-poor stands of the M6c community dominated by tall rushes or associated with peat haggs.

6.7.49 As such, losses are considered minimal in the context of the overall extent of this habitat type within the Site. The overall loss of flush and spring associated with the Proposed Development is considered to constitute a permanent impact of no greater than low adverse magnitude at a Local scale, resulting in a minor adverse effect which is not significant in the context of the EIA Regulations.

Acid Grassland – Unimproved

6.7.50 Losses to infrastructure within areas mapped as unimproved acid grassland total 0.090 ha. Losses of unimproved acid grassland are as part of a mosaic with other habitat types (marshy grassland and scrub) and as such the actual extent of loss is likely to be lower.

6.7.51 As such, losses are considered minimal in the context of the overall extent of this habitat type within the Site. The overall loss of unimproved acid grassland associated with the Proposed Development is considered to constitute a permanent impact of no greater than low adverse magnitude at a Local scale, resulting in a minor adverse effect which is not significant in the context of the EIA Regulations.

Operation

6.7.52 Direct adverse effects for the majority of sensitive ecological features (such as habitat loss and disturbance) are not anticipated to occur during the operational phase of the Proposed Development. Potential adverse operational effects are restricted to collision and barotrauma impacts to bats only.

Bats

6.7.53 Operational wind turbines can affect bats in a number of ways, although the main concerns to species populations relates to collision mortality, and injuries resulting from collision with, or flying in very close proximity to moving turbines (causing barotrauma). Soprano pipistrelle and common pipistrelle are the only species of bat recorded which are categorised as of ‘high risk’ of collision from wind turbine developments.

6.7.54 The assessment of potential effects upon bats resulting from the operation of the Proposed Development has been based on the two-stage methodology set out in NatureScot guidance (NatureScot, 2021).

6.7.55 In accordance with the NatureScot guidance a Stage 1 'Initial Site Risk Assessment' of the potential risk level of the Proposed Development has been undertaken based on a consideration of the habitats present and Proposed Development-related features. This

concludes that the Site is assessed has having an overall Initial Site Risk value of Medium (3) for a large-sized project with low habitat risk level.

6.7.56 Stage 2 'Overall Risk Assessment' of the two-stage process detailed within the NatureScot guidance has then subsequently been completed for common and soprano pipistrelle to provide an overall assessment of risk to bat species. This considers the conclusions of Stage 1 in relation to relative levels of bat activity and the vulnerability of the species recorded, at the population level.

6.7.57 The 'Overall Risk Assessment' is considered to fall under 'Low Site Risk' for both common pipistrelle and soprano pipistrelle. On this basis, the conclusions of the Stage 2 'Overall Risk Assessment' indicate that there is a low likelihood of the Proposed Development resulting in significant impacts on bat species at a population level.

6.7.58 The embedded layout of the Proposed Development has achieved the minimum 50 m buffer between wind turbine blade tips and the nearest habitat features (watercourses and woodland edge) that may be used by bats, and as such satisfies the NatureScot guidance in relation to maintaining a 50 m 'stand-off' distance. This has been calculated as a buffer of 58.92 m buffer from the towers based on a blade length of 81 m, hub height of 119 m and assumed feature height of 2 m for watercourses.

6.7.59 The bat population on the Site has been valued at a Local level due to the species recorded being widespread and common and/or only likely to be present in very low numbers. Based on activity levels recorded and subsequent analysis as outlined above, the risk of mortality or injury impacts for populations of locally occurring bat species are considered to be low. The Site is not considered to represent a site of concern for bat collision risks following the approach to assessment set out in the NatureScot guidance. It is however, acknowledged that low risk sites can still result in bat casualties.

6.7.60 Embedded 'stand-off' distances from habitat features in accordance with the NatureScot guidance, is considered adequate mitigation to avoid potentially significant operational mortality risks to bats at most low-risk locations.

6.7.61 Impacts of bat collision risk and barotrauma mortality during the operational phase are subsequently considered to be a long-term adverse impact of negligible magnitude affecting bat populations at no greater than the Local level, resulting in a negligible adverse effect, and which is not significant in the context of the EIA Regulations.

Decommissioning

6.7.62 Decommissioning, including the removal of infrastructure, would involve earthworks which in the absence of mitigation have the potential to cause pollution, and/or to adversely impact habitats and protected species. Potential decommissioning effects are considered to be similar to those identified for the construction phase. The future species community and habitat composition and condition at the time of decommissioning is unknown and cannot be reasonably assumed with any certainty. Decommissioning effects are therefore not considered separately for each ecological feature.

6.7.63 A decommissioning plan will be produced prior to the decommissioning of the Proposed Development, in accordance with good practice guidance that is available at the time. Providing the implementation of good practice measures such as those included in the CEMP agreed prior to construction it is unlikely that any significant effects upon IEFs

would occur and effects are predicted to be of no greater than low magnitude, low adverse effect and not significant in the context of the EIA Regulations. Restoration of protected and notable habitats following decommissioning will increase their extent within the Site, providing beneficial effects for these habitats in a Local context.

6.8 Mitigation

Mitigation

Outline Habitat Enhancement Management Plan

6.8.1 An Outline Habitat Enhancement and Management Plan (OHEMP) is submitted as **Technical Appendix 6.5**, which includes a variety of measures designed to mitigate and compensate for impacts on important habitat features, including blanket bog. The OHEMP includes a commitment to control and manage some of the pressure factors which are contributing to the degradation of blanket bog habitat within the Site, such as removal and control of regenerating trees in areas where these are seeding onto peatland habitat and blocking of any suitable ditches which may be present and facilitating drainage of the Site.

6.8.2 The OHEMP includes specific measures to improve the condition of degraded bog habitat within the Site, which includes 218 ha of enhancement and restoration comprised of the following measures:

- Open bare ground translocation
- Translocation into gullies
- Restoration by reprofiling and damming of gullies on shallow slopes <5°
- Restoration by reprofiling and localised damming / baffles of gullies on moderate slopes 5-7.5°
- Restoration by reprofiling only on steeper slopes >7.5°
- Hand restoration of ‘micro-erosion’.

6.8.3 Detailed proposals are available in the OHEMP, which also includes monitoring and suggested mitigation/ remedial measures in the event of failure.

6.8.4 The implementation of these measures will result in an overall increase in the quality of retained blanket bog and modified bog habitats at the Site, and reverse some of the degradation of bog habitat which is already taking place under baseline conditions, and which it should be noted may be expected to continue in the absence of the Proposed Development, potentially eventually leading to a loss of the further bog due to modification.

Deer Assessment

6.8.5 Deer are not considered as an IEF in the context of this Chapter, however this section presents an assessment of the potential implications of the Proposed Development on deer welfare and the indirect impacts on other interests including habitat reinstatement

and the impacts on neighbouring land and interests (including public roads). The assessment considers NatureScot guidance[23]. The objectives of the assessment are to:

- outline baseline information pertaining to deer and deer management within the Site;
- identify potential issues and impacts on deer arising from the Proposed Development; and,
- identify the requirement or otherwise for a Deer Management Strategy (DMS) to be implemented as part of the scheme.

6.8.6 Consultation has been undertaken with relevant personnel from the Lynemore Estate, who have advised that deer do not currently cause issues on the estate and there are currently no specific targets for culling, population density etc and that there is no overarching Deer Management Group.

6.8.7 Where deer are present on the Site, these tend to be focused around the northern wooded areas of the estate and this is where most of the shooting occurs.

6.8.8 The potential issues for deer resulting from the Proposed Development comprise the following, are and discussed in turn:

- Direct loss of foraging habitat;
- Displacement of deer onto adjacent land;
- Impacts upon habitat restoration following the construction phase of the Proposed Development;

Loss of Foraging Habitat

6.8.9 The Proposed Development will result in the direct and permanent loss of open moorland and grassland grazing resources for deer from land take associated with the turbine bases and associated infrastructure. Such losses are, considered to be very small in the context of the total Site area. Additional habitat losses will also occur as a result of disturbance within construction working areas however, habitat disturbed will be reinstated following the cessation of construction works and as such are considered to be temporary.

6.8.10 The Proposed Development will not change the location of any permanent deer fencing that is present within the Site or introduce additional permanent fencing.

6.8.11 As it is a very small extent of habitat loss (both temporary and permanent), grazing resources for deer populations within the Site and in the wider area are not considered to be adversely affected by the Proposed Development.

Displacement

6.8.12 Deer have the potential to be displaced from the Site onto adjacent lands as a result of disturbance during construction and decommissioning activities associated with the Proposed Development.

6.8.13 Research does not suggest that deer are particularly disturbed by the presence of operational wind turbines (Helldin et al., 2012), but do have the potential to be temporarily displaced during the operational maintenance works. Such events are however, unlikely

[23] NatureScot (2016) Planning for development: What to consider and include in deer assessments and management at development sites

to be frequent or prolonged and will typically occur during daylight hours when deer may be more likely to be in hiding. As such operational maintenance works are unlikely to result in displacement of deer which may cause significant pressures on adjacent land.

6.8.14 Construction activities are expected to last approximately 24 months and would be phased across the Site. Decommissioning works would be expected to occur over a similar timeframe, if not shorter. During these works, deer will have the potential to be displaced from the Site in part or in whole depending upon the location of works. This may reasonably result in the relocation of some grazing activities onto adjacent moorland habitats.

6.8.15 No impacts upon sheltering opportunities provided by the forestry cover to the north and east of the Site would be anticipated.

6.8.16 The displacement of deer onto adjacent moorland habitats is unlikely to exert any substantial additional grazing pressures onto these habitats, due to the relatively low numbers of deer likely to be affected and the extent of habitats in the local and wider area which have the capacity to accommodate them.

6.8.17 The potential for the displacement of deer onto adjacent roads, most notably the A9 to the east of the Site has been considered. Given the low numbers of deer currently reported, the risk is considered to be low, however it is also acknowledged that no specific culling is undertaken (although shooting does occur).

Habitat Restoration

6.8.18 The construction phase of the Proposed Development will result in temporary habitat losses due to disturbance within working areas around the permanent development footprint. These habitats will be reinstated following the cessation of construction works.

6.8.19 As outlined under embedded measures, a CEMP will be produced for the scheme prior to construction commencing. Monitoring would also be outlined to measure the effectiveness of restoration works.

6.8.20 Following the cessation of construction works, access for deer to the Site will be retained. Grazing pressures may therefore inhibit effective restoration of disturbed habitats within working areas.

6.8.21 Given the lack of existing culling targets or a DMS for the Site, the current ad-hoc nature of deer culling onsite and the potential for deer to be displaced onto the A9 particularly during the construction phase, and during periods of maintenance within the operational phase, of the scheme, a DMS is recommended. The DMS would be agreed in consultation with NS, the landowner and adjacent interested parties. This will ensure that the deer density is at sustainable levels for bog habitats (following recommendations in Putman et al., 2011; SNH, 2014) and that an appropriate number of deer are to be culled, considering existing density within the Site.

6.8.22 Long term monitoring would seek to identify and establish the cause of failure of habitat restoration efforts if this is considered to be occurring, including any evidence of grazing pressures from deer. This will allow action to be taken to prevent failing habitat restorations.

6.8.23 Furthermore, monitoring of deer road casualties on the adjacent A9 will also be carried out during the construction, and during periods of operational phase maintenance works,

of the scheme, so that action can be taken if increased levels of deer/traffic collisions occur. This may include actions such as revising the DMS and/ or constructing a deer fence along the eastern Site boundary.

Compensation

6.8.24 In line with NatureScot guidance (2023) it is intended to compensate for loss of peat on a 1:10 (lost:restored) ratio. As outlined within the OHEMP, this has been sought on Site where possible, however sufficient area is not available within the Site to achieve the 1:10 ratio.

6.8.25 After restoration of temporary earthworks areas following construction, there will be a residual direct and indirect loss of 33.831 ha of blanket bog, As such peatland restoration of 372.141ha would be required, with 218ha of this occurring on-Site through the OHEMP.. As such, the Applicant commits to liaising with external stakeholders including NatureScot and THC to identify appropriate opportunities (e.g. via the Peatland ACTION programme) for carrying out - or providing funding for peatland restoration elsewhere in the Region where it is judged by stakeholders that this will provide the greatest benefit, to address the residual 154.141ha.

6.8.26 It is envisaged that the requirement for and details of this will be drawn up in a 'Peatland Restoration Agreement', which can be secured through an appropriately worded planning condition. This would require the Peatland Restoration Agreement to be agreed by NatureScot and THC prior to the commencement of any development, and to reflect best practice at that time.

6.9 Residual Effects

Habitats

6.9.1 Following the implementation of mitigation and compensation measures described above, namely the adoption of a OHEMP including bog restoration as well as compensatory action through Peatland Action, residual effects on bog habitats are considered to be negligible.

6.10 Cumulative Effects

6.10.1 An assessment of potential impacts on IEFs as a result of the Proposed Development on its own is presented above (Impact Assessment). This section presents a Cumulative Impact Assessment (CIA) in which the effects from other relevant developments are also considered. The CIA has been carried out with reference to NatureScot guidance (SNH, 2018).

6.10.2 Cumulative effects are assessed only for IEFs for which the potential for an adverse effect (either significant or non-significant) has been identified as a result of either construction or operation of the Proposed Development. Only wind farm projects are included in the CIA, with no other development types identified for inclusion.

6.10.3 In accordance with NatureScot guidance (SNH, 2018), the CIA includes consideration of:

- existing wind farm developments, either operational or under construction;

- consented wind farm developments awaiting implementation (unless no activity in the last eight years since consent granted); and
- wind applications awaiting determination within the planning process and where information exists in the public domain (noting that such projects may be subject to change in design).

6.10.4 Those developments which have been withdrawn and/or refused are not considered, unless an appeal is known to be in progress and information is available. Developments in scoping are also not considered as the data available are generally insufficient and the project will in any case be subject to change, and may not be developed.

6.10.5 Small wind farm developments, including those of less than three turbines, or micro wind turbine projects, have been scoped out of consideration for potentially significant cumulative effects as applications for such developments do not generally consider the potential for impacts upon ecological features in sufficient detail

Bats

6.10.6 The Proposed Development is assessed has having negligible impacts with regards to foraging bats, and as such, there will be no detectable increase in effects cumulatively with the predicted effects of the identified cumulative developments.

Habitats

6.10.7 The loss of peatland habitat is not considered in terms of cumulative effects. The commitment to a 'Peatland Restoration Agreement' to restore and/or facilitate the restoration of blanket bog in excess of the extents of blanket and wet modified bog to be lost will result in no net loss and a significant beneficial effect to the extent of peatland habitats Regionally.

6.10.8 All impacts to IEF habitats are relevant at the local scale only, and as such there is no potential for effects cumulatively with other developments which are distanced from the Site.

6.11 Summary of Effects

6.11.1 A summary of effects is provided in Table 6.8 below:

Table 6.8: Summary of effects

Receptor	Impact	Pre-mitigation		Mitigation	Residual	
		Effect	Significance		Effect	Significance
Construction Phase						
Semi-natural broadleaved woodland	Loss – permanent, direct	Minor adverse	Not significant	none	Minor adverse	Not significant
Blanket bog	Loss – permanent, direct	Moderate adverse	Significant	OHEMP	Negligible	Not significant
Dry dwarf shrub heath	Loss – permanent, direct	Minor adverse	Not significant	OHEMP	Minor adverse	Not significant

Receptor	Impact	Pre-mitigation		Mitigation	Residual	
		Effect	Significance		Effect	Significance
Flush/ spring	Loss – permanent, direct	Minor adverse	Not significant	OHEMP	Minor adverse	Not significant
Acid grassland	Loss – permanent, direct	Minor adverse	Not significant	OHEMP	Minor adverse	Not significant
Operational Phase						
Bats	Mortality from collision	Negligible	Not significant	None	Negligible	Not significant
Decommissioning Phase (not considered)						
Cumulative effects						
Habitats	None	N/A	N/A	N/A	N/A	N/A
Bats	None	N/A	N/A	N/A	N/A	N/A

6.12 References

CIEEM (2018, updated 2024). *Guidelines for Ecological Impact Assessment in the UK and Ireland. Terrestrial, Freshwater, Coastal and Marine.* Chartered Institute of Ecology and Environmental Management, Winchester.

Marine Scotland Science (2021) *Freshwater and diadromous fish and fisheries associated with onshore wind farm and transmission line developments: generic scoping guidelines*. Available at: https://www.gov.scot/publications/freshwater-and-diadromous-fish-and-fisheries-associated-with-onshore-wind-farm-and-transmission-line-developments-generic-scoping-guidelines. Accessed on 14/03/25

NatureScot (2016) *Planning for development: What to consider and include in deer assessments and management at development sites*

NatureScot (2016). *Carbon and Peatland 2016 Map.* Available at Available at: https://www.nature.scot/professional-advice/planning-and-development/planning-and-development-advice/soils/carbon-and-peatland-2016-map. Accessed on 14/03/25

NatureScot (2019, updated 2021) *Bats and Onshore Wind Turbines: Survey, Assessment and Mitigation*. Prepared jointly by Scottish Natural Heritage, Natural England, Natural Resources Wales, RenewableUK, ScottishPower Renewables, Ecotricity Ltd, the University of Exeter and the Bat Conservation Trust (BCT) with input from other key stakeholders.

NatureScot (2021) *Assessing the Cumulative Impact of Onshore Wind Energy Developments.* Scottish Natural Heritage, Inverness.

NatureScot (2023). *Advising on peatland, carbon-rich soils and priority peatland habitats in development management*. NatureScot, Inverness.

NatureScot (2024) *Good practice during wind farm construction*. Available at: https://www.nature.scot/doc/good-practice-during-wind-farm-construction. Accessed on 14/03/25

Scottish Government (2020) *Scottish Biodiversity List.* Available at: Available at: https://www.nature.scot/scottish-biodiversity-list. Accessed on 14/03/25

SEPA (2017) *Land Use Planning System Guidance Note 31: Guidance on Assessing the Impacts of Groundwater Abstractions and Groundwater Dependant Terrestrial Ecosystems*. Scottish Environment Protection Agency.

SEPA (2017) *Land Use Planning System Guidance Note 4: Planning Guidance on On-shore Windfarm Developments.* Scottish Environment Protection Agency

SNH (2018). *Environmental Impact Assessment Handbook. V5.* April 2018. Inverness