

EIA Report Chapter 8 Ecology

Monan Repower

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8 Ecology

8.1 Introduction

This chapter forms an Ecological Impact Assessment (EIA), which considers the likely significant effects of the Monan Repowering of the Monan Wind Farm (hereafter referred to as ‘the Proposed Development’), as described in **Chapter 2 - Proposed Development and Design Evolution**, on the ecological features, habitats, and fauna present at the Site. It details likely significant effects associated with the decommissioning of the operational wind farm construction, operation, and the decommissioning phases of the Proposed Development.

Analysis and assessment of the baseline ecological data have enabled the identification of appropriate mitigation and compensation measures to prevent, reduce, or offset potential adverse ecological effects, as well as provide enhancement, where possible. The specific objectives of the chapter are to:

- Describe the ecological baseline of the Site and in the immediate surrounding area;
- Describe the assessment methodology and significance criteria used in completing the impact assessment;
- Describe the likely significant effects, including direct, indirect and cumulative effects;
- Describe the mitigation measures proposed to address any likely significant effects; and
- Assess the residual effects remaining following the implementation of mitigation.

The assessment has been carried out by IMTeco Ltd and in accordance with the Chartered Institute of Ecology and Environmental Management (CIEEM) Code of Professional Conduct¹.

The effects on hydrology are addressed in **Chapter 7 – Hydrology**. Chapter 7 also considers the hydrological impacts on Groundwater Dependent Terrestrial Ecosystems (GWDETs) identified in the ecology assessment.

This chapter of the EIA Report is supported by the following Technical Appendices:

- **Appendix 8.1:** Habitat Survey and National Vegetation Classification;
- **Appendix 8.2:** Protected Species Surveys.
- **Appendix 8.3:** Outline Biodiversity Enhancement Management Plan.

The **Figures** are referenced within the text, where relevant, and are located within **Appendix 8.1 - 8.3**.

For the purposes of this assessment, the following definitions are made:

- The Proposed Development: the turbines and all associated infrastructure required for Monan Repowering;
- The Zone of Influence (Zoi): this is ‘the area over which ecological features may be subject to significant effects as a result of the Proposed Development or associated activities’ (CIEEM, 2018);
- The Site: is the area within which all new infrastructure shall be contained, as described in **Chapter 2: Proposed Development and Design Evolution**;
- The Ecological Survey Area (ESA): is the area in which ecological surveys were undertaken (as displayed in the corresponding maps in **Appendix 8.1- 8.2**).

¹[CIEEM Code of Professional Conduct](#) (Accessed 04/01/2024).

Ecological effects are often related to effects on ornithology, hydrology, and geology. This chapter should, therefore, be read in conjunction with **Chapter 9 – Ornithology** and **Chapter 7 – Hydrology**.

8.2 Legislation, Policy, and Guidance

The Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017² establish in broad terms what is to be considered when determining the effects of development proposals on local receptors. The following key industry guidance, policy, legislation, and information sources have been considered in carrying out this assessment, as set out in the following sections.

Guidance for assessing the potential impact of the Proposed Development on the ecological features of the development Site will be based on the following statutory, general, and national guidance listed in **Table 8.1**. Any appropriate local policy and guidance will also be considered.

Table 8.1 - Policy, Legislation & Guidance

| | Legislation or Guidance Document |
|--------------------|---|
| Legislation | Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2011 ³ , which transpose the EIA Directive into Scottish law; Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora (The Habitats Directive) ⁴ ; Council Directive 2000/60/EC of the European Parliament and of the Council establishing a framework for the Community action in the field of water policy (Water Framework Directive) ⁵ ; The Conservation (Natural Habitats, &c.) Regulations 1994 (as amended) (the Habitats Regulations), which transposes the Habitats Directive into UK law ⁶ ; Environmental Impact Assessment Directive 85/337/EEC (the EIA Directive) ⁷ ; The Water Environment and Water Services (Scotland) Act 2003 (WEWS) ⁸ ; The Water Environment (Controlled Activities) (Scotland) Regulations 2011 ^{9,10} , Amendment Regulations 2021 ¹¹ ; The Wildlife and Countryside Act 1981 (as amended) ¹² ; Nature Conservation (Scotland) Act 2004 (as amended) ¹³ ; The Wildlife and Natural Environment (Scotland) Act 2011 ¹⁴ The Protection of Badgers Act 1992 ¹⁵ |
| Policy | Outer Hebrides Local Development Plan (2018) ¹⁶ ; National Planning Framework 4 (NPF4) (2023) ¹⁷ ; UK Post-2010 Biodiversity Framework (2012) ¹⁸ ; |

²The Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017 (Accessed 04/01/2024).

³Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2011 (Accessed 04/01/2024).

⁴European Commission (1992) Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora (The Habitats Directive) (Accessed 04/01/2024).

⁵Council Directive 2000/60/EC of the European Parliament and of the Council establishing a framework for the Community action in the field of water policy (Water Framework Directive) (Accessed 04/01/2024).

⁶The Conservation (Natural Habitats, &c.) Regulations 1994 (Accessed 04/01/2024).

⁷Environmental Impact Assessment Directive 85/337/EEC (the EIA Directive) (Accessed 04/01/2024).

⁸The Water Environment and Water Services (Scotland) Act 2003 (WEWS) (Accessed 04/01/2024).

⁹The Water Environment (Controlled Activities) (Scotland) Regulations 2011 (Accessed 04/01/2024).

¹⁰The Water Environment (Controlled Activities) (Scotland) Regulations 2011 (Accessed 04/01/2024).

¹¹The Water Environment (Controlled Activities) (Scotland) Amendment Regulations 2021 (Accessed 04/01/2024).

¹²The Wildlife and Countryside Act 1981 (as amended); UK Government (1981) Wildlife and Countryside Act 1981, Chapter 69, Part 1 (Accessed 04/01/2024).

¹³Nature Conservation (Scotland) Act 2004 (Accessed 04/01/2024).

¹⁴The Wildlife and Natural Environment (Scotland) Act 2011 (Accessed 04/01/2024).

¹⁵The Protection of Badgers Act 1992 (Accessed 04/01/2024).

¹⁶<https://cne-siar.gov.uk/wp-content/uploads/2024/01/Outer-Hebrides-Local-Development-Plan-2018.pdf>

¹⁷National Planning Framework 4 (Accessed 04/01/2024).

¹⁸UK Post-2010 Biodiversity Framework (2012) (Accessed 04/01/2024).

| Legislation or Guidance Document | |
|----------------------------------|---|
| Guidance | <p>Scottish Biodiversity Strategy: It's in Your Hands (2004)/2020 Challenge for Scotland's Biodiversity (2013)¹⁹;</p> <p>Scottish Government (2017). Planning Advice Note 1/2013-Environmental Impact Assessment, Revision 1.0²⁰;</p> <p>PAN 51: Planning, Environmental Protection and Regulation (revised 2006)²¹;</p> <p>PAN 60: Planning for Natural Heritage (Scottish Government, 2000)²²; and</p> <p>Nature Conservation: Implementation in Scotland of the Habitats and Birds Directives: Scottish Executive Circular 6/1995 as amended (June 2000)²³</p> <p>Averis et al., (2014). An Illustrated Guide to British Upland Vegetation. Joint Nature Conservation Committee. Peterborough;</p> <p>Bang and Dahlstrøm. (2001). Animal Tracks and Signs. Oxford University Press, Oxford;</p> <p>Chanin (2003a) Monitoring the Otter (<i>Lutra lutra</i>). Conserving Natura 2000 Rivers: Monitoring Series No. 10. English Nature, Peterborough;</p> <p>Chanin (2003b). Ecology of the European Otter. Conserving Natura 2000 Rivers Ecology Series No. 10. English Nature, Peterborough;</p> <p>CIEEM (2018). Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine.²⁴;</p> <p>Collins, J.(ed.) (2016). Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn)²⁵;</p> <p>Cresswell et al., (2012). UK BAP Mammals Interim Guidance for Survey Methodologies, Impact Assessment and Mitigation. Published by The Mammal Society;</p> <p>European Commission (2011). EU Biodiversity Strategy²⁶;</p> <p>Harris S., Cresswell P and Jefferies D., (1989). Surveying Badgers. The Mammal Society, London;</p> <p>Harris and Yalden. (2008). Mammals of the British Isles: Handbook. , 4th Edition. The Mammal Society, Southampton;</p> <p>Hundt (2012). Bat Surveys: Good Practice Guidelines (2nd Edition), BCT, London;</p> <p>Joint Nature Conservation Committee (2010). Handbook for Phase 1 Habitat survey: a technique for environmental audit;</p> <p>Joint Nature Conservation Committee (2013). Guidelines for selection of biological Sites of Special Scientific Interest (SSSI);</p> <p>Joint Nature Conservation Committee (2004) Common Standards Monitoring Guidance for Reptiles and Amphibians, Version February 2004. JNCC, Peterborough;</p> <p>Rodwell (2006). National Vegetation Classification: Users' handbook;</p> <p>Scottish Government (2013). Scottish Biodiversity List²⁷;</p> <p>Scottish Executive (2001) (updated 2006). European Protected Species, Development Sites and the Planning System: Interim guidance for local authorities on licensing arrangements;</p> <p>Scottish Executive Rural Affairs Department (SERAD) (2000). Habitats and Birds Directives, Nature Conservation: Implementation in Scotland of EC Directives on the Conservation of Natural Habitats and of Wild Flora and Fauna and the Conservation of Wild Birds ("The Habitats and Birds Directives"). Revised Guidance Updating Scottish Office Circular No 6/1995;</p> |

¹⁹ [UK Post-2010 Biodiversity Framework \(2012\)](#) (Accessed 04/01/2024).

²⁰ [Scottish Government \(2017\). Planning Advice Note 1/2013-Environmental Impact Assessment](#) (Accessed 04/01/2024).

²¹ [PAN 51: Planning, Environmental Protection and Regulation](#) (Accessed 04/01/2024).

²² [PAN 60: Planning for Natural Heritage](#) (Accessed 04/01/2024).

²³ [Nature Conservation: Implementation in Scotland of the Habitats and Birds Directives](#) (Accessed 04/01/2024).

²⁴ [CIEEM \(2018\) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater and Coastal](#) (Accessed 04/01/2024).

²⁵ Collins, J. (ed.) (2016). Bat Surveys for Professional Ecologists: Good practice Guidelines (3rd edition). The Bat Conservation Trust, London.

²⁶ [EU Biodiversity Strategy](#) (Accessed 04/01/2024).

²⁷ [Scottish Biodiversity List](#) (Accessed 05/01/2024).

| Legislation or Guidance Document |
|--|
| <p>Scottish Environment Protection Agency (SEPA) (2017). Guidance Note 31 - Guidance on Assessing the Impacts of Development Proposals on Groundwater Abstractions and Groundwater Dependent Terrestrial Ecosystems (Version 3)²⁸;</p> <p>'Managing Natura 2000 Sites' (European Commission²⁹),</p> <p>NatureScot: 'Management of European sites'³⁰</p> <p>NatureScot (updated Aug 2021), Bats and onshore wind turbines - survey, assessment and mitigation³¹;</p> <p>Scottish Natural Heritage (Version 2, 2016). Planning for Development: What to consider and include in Habitat Management Plans³²;</p> <p>NatureScot: Habitats Regulations Appraisal (HRA)³³;</p> <p>Scottish Natural Heritage (2003). Best Practice Guidance - Badger Surveys. Inverness Badger Survey 2003. Commissioned Report No. 096;</p> <p>Scottish Natural Heritage (2018). Environmental Impact Assessment Handbook – Version 5: Guidance for competent authorities, consultation bodies, and others involved in the Environmental Impact Assessment process in Scotland³⁴;</p> <p>Strachan et al., (2011). The Water Vole Conservation Handbook;</p> <p>The Herpetological Conservation Trust (2007). National Amphibian and Reptile Recording Scheme, Habitat Recording Guide;</p> <p>BS 42020:2013 Biodiversity: Code of Practice for Planning and Development: BSI Standards Publication.</p> <p>Developing with Nature guidance: Guidance on securing positive effects for biodiversity from local development to support NPF4 policy 3(c)³⁵</p> <p>Scottish Government Draft Planning Guidance: Biodiversity (2023)³⁶</p> |

8.3 Assessment Methodology and Significance Criteria

The assessment of the potential impact of the Proposed Development on ecology was carried out by the general method described in the following sub-sections.

8.3.1 Scope of Assessment

The scope of the Ecological Impact Assessment (EclA) includes the following elements:

- Identification of designated sites of nature conservation interest located up to 5 kilometres (km) from the Site;
- Identification of historical records of rare, notable or protected species or habitat located up to 2km from the Site;
- Consideration of the likely significant effects on ecological features arising due to the Proposed Development;
- Description of measures required to mitigate adverse effects on ecological features within or adjacent to the Site, with the aim to avoid, reduce or compensate for the effect, or offer an opportunity for enhancement; and

²⁸ [SEPA Guidance Note 31](#) (Accessed 05/01/2024).

²⁹ [Managing and Protecting Natura 2000 Sites](#) (Accessed 05/01/2024).

³⁰ [Management of European Sites](#) (Accessed 05/01/2024).

³¹ [Bats and onshore wind turbines - survey, assessment and mitigation](#) (Accessed 05/01/2024).

³² [Planning for Development: What to consider and include in Habitat Management Plans](#) (Accessed 05/01/2024).

³³ [Habitats Regulations Appraisal](#) (Accessed 05/01/2024).

³⁴ [Environmental Impact Assessment Handbook. Guidance for competent authorities, consultation bodies and others in involved in the Environmental Impact Assessment process in Scotland](#) (Accessed 05/01/2024).

³⁵ [Developing with Nature guidance: Guidance on securing positive effects for biodiversity from local development to support NPF4 policy 3c](#) (Accessed 05/01/2024).

³⁶ [Scottish Government Draft Planning Guidance: Biodiversity](#) (Accessed 05/01/2024).

- Identification of residual effects on ecological features, including those considered to be significant, taking into account the above mitigation.

The principal ecological issues considered in this EclA include:

- Potential effects on sites designated for nature conservation;
- The harm and disturbance, both direct and indirect, to habitats and species arising from the construction, operation and decommissioning of the Proposed Development; and
- The potential legal implications of the above impacts.

8.3.2 Baseline Survey Areas

The area within which the desk-based research and field surveys were undertaken varies depending on the ecological feature and its search/survey requirements. Details of the extent of each ESA are described in the relevant 'Baseline Conditions' section of this chapter and associated **Appendices 8.1 - 8.3** and illustrated on their respective figures.

8.3.3 Desk Study Assessment Methodology

A desk study was undertaken to collate relevant public domain survey data, scientific publications, grey literature, and to obtain historical records of protected and relevant species of conservation interest and species and habitats protected by Scottish and European legislation from within the Site and surrounding environment.

The Desk Study Area (DSA) comprised of the following areas around the Site:

- A radius of 5km from the Site was searched for internationally designated statutory sites for nature conservation (e.g. SAC or Ramsar sites) and nationally designated statutory sites (e.g. SSSIs);
- A radius of 2km from the Site was searched for non-statutory sites;
- A radius of 2km from the Site was searched for records of notable or protected species; and
- A radius of 2km from the Site was searched for records of invasive, non-native species.

The purpose of the desk-based review was to provide background information on the habitats and species potentially present, to help inform and guide the baseline ecological field surveys and to provide context to their results. Combined with the results of the ecological field surveys, this information has been utilised to provide a comprehensive ecological baseline on which to base the EclA.

8.3.4 Statutory & Non-Statutory Designated Sites

A search was conducted for the presence of any designated sites with ecological qualifying features within 5km of the Proposed Development, using NatureScot's SiteLink³⁷ website and the Joint Nature Conservation Committee (JNCC) website. This was undertaken to identify and provide information on statutory designated sites of nature conservation, located within 5km of the Site. These included Special Areas of Conservation (SACs) and Sites of Special Scientific Interest (SSSIs). Non-statutory designated sites included Local Nature Reserves (LNR), Local Wildlife Sites (LWS), Local Biodiversity Sites (LBS), Ancient Woodland Inventory (AWI) and Native Woodland Survey Scotland (NWSS). Sites designated solely for ornithological interests and of relevance to the Proposed Development are considered separately in **Chapter 9: Ornithology**.

³⁷SiteLink (Accessed 05/01/2024).

8.3.5 Protected Species and Habitats

Records of UK protected mammal species, invertebrates, birds, habitats and plant species within 5km of the proposed Planning Application Boundary were considered via biological records from data searches were undertaken.

8.3.6 Field Survey Methodology

Detailed field survey methodologies and results are included within **Appendices 8.1 - 8.3**. The following section summarises the baseline methods and results, as identified during these surveys.

8.3.6.1 Habitats and Botanical Surveys

Habitat surveys for the Proposed Development followed the National Vegetation Classification (NVC) scheme (Rodwell et al., 1991-2000³⁸) using standard methods (Rodwell, 2006³⁹). Surveys were undertaken within the ESA as detailed in **Figures 1 to Figure 13** in **Appendix 8.1**. The habitat ESA extended up to 250m beyond the wind farm infrastructure and ensured it covered the 100m for the existing track locations, as a consequence of the requirement to ensure sufficient buffer areas to account for the presence of potential Groundwater Dependent Terrestrial Ecosystems (GWDTEs), in line with Scottish Environment Protection Agency (SEPA) guidance⁴⁰.

(a) Phase 1 Habitat Classification Surveys

Habitat field surveys were undertaken in May to September 2023. The habitat survey centred on the Phase 1 habitat survey approach (Joint Nature Conservation Committee 2010). This involves the following elements.

- Habitat mapping using a set of standard colour codes to indicate habitat types on a Phase 1 Habitat map.
- Description of features of possible ecological or nature conservation interest in notes relating to numbered locations on the Phase 1 Habitat map, called 'target notes'.

Phase 1 habitat survey methods are described in Joint Nature Conservation Committee (JNCC 2010) and target notes are included.

Plant nomenclature in this EIA Report follows Stace (2010) for native and naturalised species of vascular plant. Plant names in the text are given with the common name first, followed by the scientific name in brackets.

The Phase 1 characterisation has been utilised to allow a broader visual representation of the habitats within the study area. The NVC data should be referred to for further detail in any specific area.

In addition, the survey aimed to identify wetland habitats in accordance with the habitat's descriptions given in 'A Functional Wetland Typology for Scotland' guidance⁴¹. Where wetland habitats were identified, further detailed surveys were undertaken for the identification of vegetation communities with potential groundwater dependency in accordance with SEPA guidance. The full methods are presented in **Appendix 8.1**.

In addition to habitat characterisation, any signs of protected mammal species, as well as an assessment of habitat suitability for other protected species (including herptiles) were recorded. Bats are present in the Outer Hebrides in low numbers, mostly associated with buildings and woodland, and have therefore been scoped out of this assessment due to lack of suitable habitat. Badgers are not known to be present in the Outer Hebrides and have

³⁸ Rodwell, J. S. (ed.) (1991 et seq.). British Plant Communities. Vol 1–5. Cambridge University Press

³⁹ National Vegetation Classification: Users' handbook (Accessed 05/01/2024).

⁴⁰ SEPA Guidance Note 4 (Accessed 05/01/2024).

⁴¹ SNIFFER (2009) WFD95: A Functional Wetland Typology for Scotland – Field Survey Manual. Version 1

therefore been scoped out of the assessment. There is one record (in 2019) of water vole on South Harris and although in low numbers, surveys were undertaken under a precautionary principle.

The scope of the protected mammal species surveys was agreed by Comhairle Nan Eilean Siar Planning (dated 21 December 2023).

Additional records included details of vegetation and habitats of conservation interest, if present.

Mapping was subsequently undertaken by use of Geographic Information Systems (GIS) software.

(b) National Vegetation Classification Survey

A National Vegetation Classification (NVC) survey was undertaken on all wetlands and habitats of conservation value. The NVC survey involved mapping distinct areas of homogenous vegetation and recording detailed descriptions of the vegetation communities, with reference to published community descriptions^{42,43}. The NVC data was cross-referenced to the Phase 1 Classification system to provide a broader characterisation of habitats. The full methods are presented in **Appendix 8.1**.

8.3.6.2 *Protected Species Survey*

Protected Species Surveys were undertaken in 2023 (**Appendix 8.2**) and encompassed all land within the Site in line with NatureScot guidance⁴⁴.

During the protected mammal surveys the following species were specifically targeted, with species-specific buffers included for the surveys, according to survey guidelines and best practise and termed ESA:

- Otter (*Lutra lutra*): Suitable habitats to be surveyed within the Site, extending up to 200m of suitable habitats potentially impacted by the Proposed Development^{45,46,47}.
- Water Vole (*Arvicola amphibious*): The survey area included all suitable habitat within the Site, and within a 200m buffer to be surveyed where possible (access permitting) and extending up to 50m up and downstream of any watercourses or ditch systems potentially impacted by the Proposed Development^{48,49}.
- Mountain Hare (*Lepus timidus*): Suitable habitats within the Site and extending up to 200m from the Site, following methodology set out in Cresswell et al. (2012)⁵⁰.
- Reptiles & Amphibians: No specific surveys undertaken, records obtained when on Site during other survey work.

Any evidence of the presence of protected mammals was recorded onto 1:10,000 scale survey maps in the field. The location of all signs was recorded using a handheld GPS unit and photographs were taken to visually catalogue each record.

⁴² Averis et al., (2014) An Illustrated Guide to British Upland Vegetation. Joint Nature Conservation Committee. Peterborough

⁴³ Elkington, T., Dayton, N., Jackson, D. L. and Strachan, I. M. (2001). National Vegetation Classification: Field Guide to Mires and Heaths. Joint Nature Conservation Committee, Peterborough

⁴⁴ [Planning and development: protected species](#) (Accessed 05/01/2024).

⁴⁵ Chanin (2003a) Monitoring the Otter (*Lutra lutra*). Conserving Natura 2000 Rivers: Monitoring Series No. 10. English Nature, Peterborough

⁴⁶ Chanin (2003b) Ecology of the European Otter. Conserving Natura 2000 Rivers Ecology Series No. 10. English Nature, Peterborough

⁴⁷ [Protected Species Advice for Developers: Otter](#) (Accessed 05/01/2024).

⁴⁸ Dean, M., Strachan, R., Gow, D. and Andrews, R. (2016). The Water Vole Mitigation Handbook (The Mammal Society Mitigation Guidance Series). Eds Fiona Mathews and Paul Chanin. The Mammal Society, London

⁴⁹ Strachan, R., Moorhouse, T. & Gelling, M. (2011). The Water Vole Conservation Handbook. Third Edition. Wildlife Conservation Research Unit, University of Oxford, Abingdon

⁵⁰ Wheeler, P., Wray, S. and Yalden, D. (2012) Brown Hare and Mountain Hare. In: Cresswell, W.J., Birks, J.D.S., Dean, M., Pacheco, M., Trehwella, W.J., Wells, D. and Wray, S. (2012). UK BAP Mammals: Interim Guidance for Survey Methodologies, Impact Assessment and Mitigation. The Mammal Society, Southampton.

(a) Otter Surveys

The surveys consisted of walkovers of the Site and a 200m buffer to visually inspect and assess the Site for its potential to support otters. Otter surveys were undertaken according to recommended guidelines. All suitable watercourses and waterbodies located within the Site, and where accessible (access permitting), within the ESA buffer of the Site were surveyed (full details are provided in **Appendix 8.2**).

(b) Water Vole Surveys

The surveys consisted of walkovers of the Site and a 200m buffer to visually inspect and assess the Site for its potential to support water vole. Water vole surveys were undertaken according to recommended guidelines. The survey area included all suitable habitat within the ESA buffer which was surveyed where possible (access permitting). This extended up to 50m up and downstream of any watercourse or ditch system potentially impacted by the Proposed Development (full details are provided in **Appendix 8.2**).

(c) Mountain Hare

A survey, following methodology set out in Cresswell et al. (2012)⁵¹, of all areas within the Site, and extending up to 200m from the Site, including vegetated boundaries and fence lines was undertaken to make direct observations of hare activity and to search for the field evidence of hare including:

- Forms (resting places);
- Foraging evidence (often distinctive from rabbit and vole);
- Hare droppings (generally larger and longer than that of rabbit); and
- Multiple transects, all of approximately 300-350m apart (searching within 5m either side of the transect). Each taking from approximately 60 to 120 minutes to complete over varied ground and terrain. (full details are provided in **Appendix 8.2**).

(d) Other Field Observations

Records of all and other species (such as, reptiles and amphibians), if observed during all survey times and site walkovers, were noted (full details are provided in **Appendix 8.2**).

8.3.7 Methodology for the Assessment of Effects

The approach taken to impact assessment follows the CIEEM guidance for EclA⁵², which sets out the process for assessment broadly through the following stages:

- Determining importance of baseline ecological features, including identification of Important Ecological Features (IEFs);
- Identification, assessment and characterisation of ecological effects;
- Incorporation of measures to mitigate identified effects;
- Assessment of significance of residual effects following mitigation;
- Identification of appropriate compensation to offset significant residual effects; and

⁵¹ Wheeler, P., Wray, S. and Yalden, D. (2012) Brown Hare and Mountain Hare. In: Cresswell, W.J., Birks, J.D.S., Dean, M., Pacheco, M., Trehwella, W.J., Wells, D. and Wray, S. (2012). UK BAP Mammals: Interim Guidance for Survey Methodologies, Impact Assessment and Mitigation. The Mammal Society, Southampton.

⁵² CIEEM (2018; Version 1.1 - Updated September 2019). Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater and Coastal, 3rd edition. Chartered Institute of Ecology and Environmental Management, Winchester

- Identification of opportunities for ecological enhancement.

8.3.7.1 Determining Important Ecological Receptors (IEFs)

One of the key challenges in EclA is to decide which ecological features are important and should be subject to detailed assessment. Such ecological features will be those that are considered to be most important and potentially affected by the project. In EclA, ‘importance’ of an ecological feature is synonymous with ‘sensitivity’ and is defined within a geographical context. Some examples of the criteria used to determine importance are defined in **Table 8.2**.

Designations are normally indicative of an importance level; for example, a SAC designated under the Habitats Directive is explicitly of European (International) importance. Where a site is offered more than one designation, it is the one of higher level (within the geographic frame of reference) considered of overriding importance. Ecological features of interest should be valued accordingly, with ecological features unrelated to the site designation assessed and evaluated according to their intrinsic importance.

Upon the identification of the potential direct and indirect effects from the Proposed Development, it was necessary to undertake a systematic assessment of importance to determine the Important Ecological Features (IEFs). IEFs are ecological features that could be ‘significantly’ affected by the Proposed Development, both negatively and positively.

In this EclA, only ecological features with regional importance and above (as defined in **Table 8.2** below) were considered sufficiently important to be determined as IEFs, and in accordance with CIEEM guidance, only these IEFs required assessment for potential significant effects.

Table 8.2 - Geographical context of Important Ecological Features and their evaluation.

| Level of Importance of Receptor/Sensitivity | Qualifying Criteria |
|--|--|
| International (e.g. Europe) Very High Importance | The Ecological Survey Area (ESA) is considered of international ecological value when it supports: <ul style="list-style-type: none"> ● An internationally designated site or candidate site (SPA, pSPA, SAC, cSAC, pSAC, Ramsar site, Biosphere Reserve or an area which NatureScot has determined meets the published selection criteria for such designations, irrespective of whether or not it has yet been notified. ● A viable area of a habitat type listed in Annex 1 of the Habitats Directive, or smaller areas of such habitat which are essential to maintain the viability of that ecological resource on an international scale. ● >1% of the European resource of an internationally important species, i.e. those listed in Annex 1, 2 or 4 of the Habitats Directive. |
| UK/National (i.e. Scotland) High Importance | An ESA is considered of National ecological value when it supports: <ul style="list-style-type: none"> ● A nationally designated site (SSSI, NNR) or a discrete area which NatureScot has determined meets the published selection criteria for national designation irrespective of whether or not it has yet been notified. ● A viable area of a priority habitat identified in the UK Biodiversity Action Plan (BAP), or smaller areas of such habitat which are essential to maintain the viability of that ecological resource at a national scale. ● >1% of the National Resource of a regularly occurring population of a nationally important species, i.e. a priority species listed in the UK BAP and/or Schedules 1, 5 (S9 (1, 4a, 4b)) or 8 of the Wildlife and Countryside Act. |

| Level of Importance of Receptor/Sensitivity | Qualifying Criteria |
|---|---|
| County Medium Sensitivity | An ESA is considered of County ecological value when it supports: <ul style="list-style-type: none"> ● County sites and other sites which the designating authority has determined meet the published ecological selection criteria for designation, e.g. Local Nature Reserves. ● Viable areas of legally protected habitat/habitat identified in Council BAP or smaller areas of such habitats that are essential to maintaining the viability of the resource at a county scale. ● Any regularly occurring population of an internationally/nationally important species or a species in a relevant UK/Council BAP which is important for the maintenance of the regional meta-population. ● Semi-natural ancient woodland greater than 0.25ha. ● Networks of species-rich hedgerows. |
| Local (e.g. local community council areas, Local Nature Reserves) Low Sensitivity | An ESA is considered of Local ecological value when it supports: <ul style="list-style-type: none"> ● Semi-natural ancient woodland smaller than 0.25ha. ● Commonplace and widespread semi-natural habitats, e.g. scrub, poor semi-improved grassland, coniferous plantation woodland, intensive arable farmland etc. which, despite their ubiquity, contribute to the ecological function of the local area (habitat networks etc). ● Very small, but viable, populations of internationally/nationally important species or a species in a relevant UK/Council BAP which is important for the maintenance of the local meta-population. ● Networks of linear features, including species-poor hedgerows |
| Less than Local Importance (Site Wide) Negligible Sensitivity | A Site Wide area is considered of site ecological value when it supports: <ul style="list-style-type: none"> ● Habitats of limited ecological value, e.g. amenity grassland, but which contribute to the overall function of the application site's ecological function. |

Habitats and species of nature conservation importance are identified through policies and legislation. For example, habitats and species of international importance are listed on Annex I of the Habitats Directive. Where these are considered of principal importance for biodiversity in Scotland, these features are also listed in the Nature Conservation (Scotland) Act. Other features of importance may be listed on the Scottish Biodiversity List or as LBAP priorities. These elements provided a crucial starting point for the identification of IEFs requiring consideration in EclA; however, they did not solely determine the level of importance assigned, (with the exception of Internationally designated Natura 2000 sites).

Application of professional judgement was applied to determine the level of importance and to identify IEFs (ecologically coherent population/habitat network) against which likely significant effects can be assessed (refer to the 'Determining Significance of Potential Ecological Effects' section below).

When determining the importance in the context of EclA, contextual information regarding the value of the site to the species as well as the distribution and abundance of a given species was considered. For example, an uncommon species is recorded, but it is known to be widespread and common locally, and its range is regionally and nationally stable (regional importance as per **Table 8.2**), but habitats on Site are of low value to the species, the local population may be determined to be of local importance, or potentially less than local.

Alternatively, a population of an uncommon species is improving regionally and nationally (local importance as per **Table 8.2**), but habitats on Site are of high value and relatively rare regionally, the species is likely to constitute a notable proportion of a regional population, and therefore the local population may be considered to be of at least regional importance.

Additionally, in accordance with CIEEM guidance, where a legally protected species is present within the Zone of Influence and there is potential for a breach of legislation, such species are considered to be an IEF. When valuing ecological receptors, professional judgement must be made on the basis of an objective assessment of the best information available: in circumstances of reasonable doubt, a precautionary approach has been adopted.

8.3.7.2 *Characterising Potential Impacts on Receptors*

In line with the CIEEM EclA guidance, where possible, consideration is given to the following characteristics when identifying potential effects of the Proposed Development on IEFs:

- Nature of impact: whether it is positive (beneficial) to IEFs, e.g. by increasing species diversity or extending habitat, or negative (detrimental), e.g. by loss of, or displacement from, suitable habitat;
- Extent: the spatial or geographical area over which the impact may occur;
- Duration: the duration of an effect as defined in relation to ornithological characteristics (such as a species' life cycle) as well as human timeframes. It should also be noted that the duration of an activity may differ from the duration of the resulting impact, e.g. if short-term construction activities cause disturbance to breeding birds, there may be long-term implications from failure to reproduce that season;
- Frequency: the number of times an activity occurs may influence the resulting impact; and
- Timing: this may result in an impact on an ecological feature if it coincides with critical life stages or seasons.

When characterising ecological impacts, it is essential to consider the likelihood that a change/activity will occur as predicted, with a degree of confidence in the impact assessment (in relation to the impact on ecological structure and function). Where possible, the degree of confidence should be predicted quantitatively. Where this is not possible, a more qualitative approach is taken; particularly where the confidence level can only be based on expert judgement. Within this EclA, the confidence in the assessment when predicting impacts to ecological receptors are as follows:

- Certain/near certain: probability estimated at 95% chance or higher;
- Probable: probability estimated above 50% but below 95%;
- Unlikely: probability estimated at above 5% but less than 50%; and
- Extremely unlikely: probability estimated at less than 5%.

8.3.7.3 *Determining Magnitude of Impact*

The magnitude of potential impacts will be identified through consideration of the above impact characteristics, to determine the degree of change to baseline conditions predicted as a result of the Proposed Development. The criteria used in the EclA for assessing the magnitude of an impact are summarised in **Table 8.3**.

Table 8.3 - Framework for determining magnitude of impact.

| Magnitude of Impact | Definition |
|-----------------------------|--|
| High/Substantial | A fundamental change to the baseline condition of the asset, leading to total loss or major alteration of character. |
| Medium | A material, partial loss or alteration of character. |
| Low | A slight, detectable, alteration of the baseline condition of the asset. |
| Negligible/No change | A barely distinguishable change from baseline conditions. |

8.3.7.4 *Determining Significance of Effect*

Significance is a concept related to the weight that should be attached to effects when decisions are made. A significant effect is simply an effect that is sufficiently important to require that the decision maker is adequately informed of the environmental consequences of permitting a project. A significant effect does not necessarily equate to an effect so severe that consent for the project should be refused planning permission.

To determine significance in other chapters within this EIA Report a matrix approach has been used. This is widely used in EIA to provide consistency across all the topics and clarity to decision makers. However, in accordance with CIEEM guidelines (CIEEM, 2018), a matrix system has not been employed for the determination of effect significance, as this method often places adverse impacts to IEFs of local importance into a 'low significance' category, misleadingly downplaying local values of biodiversity.

For the purposes of the EIA, the significance of effect was defined as an effect that either supports or undermines biodiversity conservation objectives for IEFs, or for biodiversity in general. Conservation objectives may be specific, broad or wide-ranging; therefore, effects can be considered as significant at a wide range of geographic scales.

For defined sites or ecosystems, significant effects encompass impacts on the structure and function of such systems. For designated sites, it is necessary to assess whether or not an impact will affect the integrity of a site or ecosystem (and is therefore significant). This is achieved through understanding whether the changes arising from the Proposed Development are likely to move the baseline conditions closer to, or further from, the condition which constitutes integrity for that specific system.

For habitats and species, consideration of conservation status is required to determine whether or not an effect on a habitat or species is likely to be significant. For habitats, conservation status is determined by the sum of influences acting on the habitat that may affect its extent, structure and functions, in addition to its distribution and typical species composition within a given geographical area. For species, conservation status is determined by the sum of influences acting on the species concerned, which may affect its abundance and distribution within a given geographical area. When assessing likely significant effects on conservation status, the known or likely background trends and variations in status is considered. Estimation is also given to the level of ecological resilience or conditions that would allow the population of a species or area of habitat to continue to exist at a given level, such as to increase along an existing trend or to reduce a decreasing trend.

The mitigation hierarchy should be applied to significant impacts on IEFs, in line with guidance derived from policies relevant to the geographic scale of the IEF importance (as per policies outlined above). Any remaining significant impacts following the application of mitigation (i.e. residual impacts), together with an assessment of the likelihood of mitigation success, should be considered against relevant legislation, policy, and development control.

Where identified, the significant effects should be qualified with reference to an appropriate geographic scale. It is important to note that the geographic scale of the significant effect, may not be the same as the geographic scale in which the feature is considered important. This enables consistency in scale when determining appropriate mitigation or compensation solutions.

Significance of the likely effects on each identified IEF is determined through professional judgement, by considering both the nature conservation importance of each feature and the degree to which it may be affected (the impact magnitude) by the Proposed Development.

8.3.7.5 *Cumulative Effects*

Cumulative effects can result from individually insignificant, but collectively significant actions, taking place over a period of time or concentrated in a location. Within EIA, cumulative effects are particularly important as many ecological features are exposed to background levels of threat or pressure and may be close to reaching critical

thresholds where further impact could cause irreversible decline. It is recognised that different actions can cause cumulative effects as follows:

- Additive/incremental effects: multiple activities/projects may give rise to a significant effect due to their proximity in time and space. These may be additive or synergistic effects; and
- Ancillary: ancillary developments may include different aspects of the project which may be authorised under different consent processes, these will be included as part of the cumulative assessment.

8.3.7.6 *Requirements for Mitigation*

Best practice guidance e.g. CIEEM (2018⁵³; 2019⁵⁴) identifies a hierarchy of mitigation for potential impacts that seeks to:

- Avoid adverse ecological impacts, especially those that could be significant to important receptors;
- Minimise adverse impacts that could not be avoided; and
- Compensate for any remaining significant residual impacts.

Embedded mitigation is that considered in the design layout for the Proposed Development. Where likely significant adverse effects are predicted regardless of design layout, further mitigation is separately identified as per CIEEM guidance.

8.3.7.7 *Residual Effects*

Following the assessment of likely significant effects, including incorporation of embedded mitigation, all attempts will be made to avoid and mitigate significant effects. Where significant effects are predicted, further specific, applied mitigation is detailed. Following the application of this mitigation, an assessment of residual effects will be undertaken to determine the final significance of effects. Where residual effects remain significant or require application of compensatory measures, these will be considered against the relevant policy and legal objectives to determine the outcome of the application.

8.3.7.8 *Embedded Mitigation & Good Practice*

Application of the 'mitigation hierarchy' has been achieved throughout the Proposed Development design process, with the identification and incorporation of methods for the avoidance of impacts and application of embedded mitigation. Measures to avoid or reduce potential ecological effects has been incorporated into the design of the Proposed Development ('embedded mitigation'). This includes 'mitigation by design' whereby aspects of the Proposed Development have been re-designed to avoid or reduce ecological effects. This type of mitigation is particularly beneficial for ecological resources as there is greater certainty that it will be delivered (CIEEM, 2018; 2019).

Mitigation by 'good practice' is the active implementation of widely used good practice measures during the Proposed Development process. Although not 'embedded mitigation' by definition, mitigation by good practice forms an integral part of the development process.

As mitigation is only applied to prevent, reduce, or offset any specific significant adverse effects on IEFs, mitigation by good practice is introduced to ensure the safeguarding of the wider natural environment, including features that may have not been included in the EIA process, either as they were absent, and/or not considered of sufficiently important at the time.

⁵³ CIEEM (2018). Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine. CIEEM, Winchester.

⁵⁴ [Biodiversity Net Gain: Good practice principles for development. A Practical Guide](#). (Accessed 05/01/2024).

Embedded mitigation, including the implementation of good practice, is taken into consideration when undertaking the assessment of significant effects. If significant effects are predicted further mitigation is required to be detailed.

8.3.7.9 *Mitigation by Design*

Ecological features have been considered at all stages of the Proposed Development design, from initial feasibility to final layout. The design evolution is further expanded in **Section 2.2.2 of Chapter 2: Proposed Development and Design Evolution**. Critical design considerations have included the aim of mitigating impact on peat deposits and micro-siting of the turbine locations has been undertaken. Peat considerations are further discussed in **Chapter 7 – Hydrology** and its associated appendices.

The sensitive designs (e.g. of watercourse crossing and culverts) presented in **Chapter 2: Proposed Development and Design Evolution** of this EIA Report have been developed to safeguard the water environment and will also help effectively mitigate construction-related direct and indirect impacts to aquatic features.

8.3.7.10 *Mitigation by Good Practice*

(a) Decommissioning of existing turbines & Construction of Proposed Development

In addition to the incorporation of effective mitigation through the Proposed Development design, the following sections outline mitigation of the Proposed Development impacts through practice, particularly with the aim of safeguarding of protected species during the decommissioning of existing turbines, construction and operation of the Proposed Development. It is anticipated that these elements will be included in Species Protection Plans (SPPs), as part of the wider environmental management of the Proposed Development of decommissioning, construction and operation, in accordance with NatureScot guidance⁵⁵.

(b) Ecological Clerk of Works

A suitably qualified and experienced Ecological Clerk of Works (ECoW) will be appointed to provide ecological and environmental advice during construction, including the monitoring of compliance with the recommendations of this EIA Report and subsequent planning conditions. Before construction begins, the ECoW and the project hydrologist will undertake a review of design and drainage plans to inform the requirement for micro-siting, to minimise the potential for effects to habitats of conservation concern. Where possible, the ECoW will advise on the drainage design to minimise hydrological disruption and reduce the risk of scour and erosion. The ECoW will also monitor and advise on the implementation of pollution prevention and good working practices throughout construction, to protect both terrestrial and aquatic ecosystems from accidental pollution.

(c) Construction Phase Mitigation

Pre-construction surveys for protected species, such as otter, water vole, mountain hare and reptiles (e.g. common lizard) will be undertaken to provide up-to-date information about the distribution and abundance of protected species. The results of the surveys will inform the need for and scope of Species Protection Plans and associated mitigation and licencing requirements, all of which will be developed in line with NatureScot guidance.

(d) Construction Phase Mitigation for GWDTes

Good practice design and construction and measures that will be outlined in the Construction Environmental Management Plan (CEMP) will minimise potential indirect effects of the Proposed Development on any GWDTes during the construction phase. The CEMP will be provided prior to constructional work commencing.

⁵⁵ [Planning for development: what to consider and include in habitat management plans](#) (Accessed 05/01/2024).

Further information on the embedded hydrological migration measures are detailed in **Chapter 7 - Hydrology**.

(e) Construction Phase Mitigation for Aquatic Habitats

Mitigation presented within **Chapter 7 - Hydrology** of this EIA Report to safeguard the water environment, will effectively mitigate construction-related impacts to any aquatic species, such as the direct and indirect effect of pollution and sedimentation from instream works and surface water run-off. Water quality monitoring is recommended to ensure the safeguarding of the water environment and important aquatic features (see **Chapter 7 - Hydrology**).

8.3.7.11 Mitigation by Practice: Operation

To minimise the risk of bats colliding with operational turbines, Natural England good practice guidance⁵⁶ (adopted by NatureScot) recommends a minimum 50m stand-off distance between blade tips and high value bat habitat (see **Section 8.3.7.9: Mitigation by Design** above).

8.3.7.12 Mitigation by Practice: Decommissioning

Decommissioning activities are anticipated to be of a similar character to those of the Proposed Development construction. Therefore, the construction phase embedded mitigation outlined above is considered appropriate to the decommissioning phase for both the existing turbines and for the Proposed Development.

8.3.7.13 Compensation

Where there are significant residual adverse ecological effects despite the mitigation proposed, these should, under EclA guidelines (CIEEM, 2018; 2019), be offset by appropriate compensatory measures.

8.3.7.14 Biodiversity Enhancement

There is a growing body of policy and guidance that ensures development plans should not just aim to avoid causing likely significant effects. Measures required to protect a diverse range of species and habitats are set out in the document 'Scotland's Biodiversity: It's in Your Hands - A strategy for the conservation and enhancement of biodiversity in Scotland' (Scottish Executive, 2004). Biodiversity Targets are outlined in the 'Strategic Plan for Biodiversity 2011-2020' (Scottish Government, 2013). The two documents together comprise the Scottish Biodiversity Strategy.

Securing positive effects for biodiversity is one of six statutory outcomes for the National Planning Framework introduced by the Planning (Scotland) Act 2019. Improving biodiversity is a cross-cutting theme which runs throughout the NPF4 (for example within Policy 5: Soil). NPF4 Policy 3 plays a critical role in ensuring that development will secure positive effects for biodiversity.

Based on the published report 'Research into Approaches to Measuring Biodiversity in Scotland', (September 2023) it is considered that the Natural England Biodiversity Metric can be adapted for planning and development use in Scotland. According to the recently published Scottish Government Draft Planning Guidance: Biodiversity (November 2023) NatureScot will develop an adapted biodiversity metric suitable for use in supporting the delivery of NPF4 policy 3b. Biodiversity Net Gain is an evolving discipline within Scotland. NatureScot's 'Developing with Nature' guidance includes examples of widely applicable measures which can contribute to the overall enhancement of biodiversity.

Where there are significant residual adverse ecological effects despite the mitigation proposed, these should, under EclA guidelines (CIEEM, 2018; 2019), be offset by appropriate compensatory measures.

⁵⁶ Mitchell-Jones, T, Carlin, C (2014) Natural England Technical Information Note TIN051 - Bats and onshore wind turbines Interim guidance (3rd Edition), Natural England 2014, ISBN 978-1-78354-095-2

8.3.7.15 Biodiversity Enhancement Management Plan

The Applicant has committed to the provision of a Biodiversity Enhancement Management Plan (BEMP) to reduce adverse environmental effects and to provide significant enhancements for important ecological features and biodiversity enhancement at the Proposed Development, and as a requirement in line with Policy 3 of National Planning Framework 4. Biodiversity Net Gain is an evolving discipline within Scotland. An Outline Biodiversity Enhancement Management Plan (OBEMP) has been produced (see **Appendix 8.3**) which is a live document and will be refined and developed post-consent. The final BEMP will confirm all biodiversity enhancement measures and management prescriptions.

Biodiversity enhancements have been identified in proportion to the opportunities on site, scale of the development and informed by the ecological baseline survey. The assessment of the biodiversity baseline investigates distinctive habitat types such as terrestrial habitats, and linear features such as watercourses. The proposal for enhancement has therefore included defined objectives according to two of the habitat types located within the Proposed Development ESA and include Terrestrial Habitats and Watercourse Habitats. These are expanded in **Appendix 8.3: Outline Biodiversity Enhancement Management Plan**.

The appropriateness of any specific measures proposed to achieve the aims and objectives, methods to be used and suitable locations within the Site for implementation, will be determined in consultation with the landowners, NatureScot, Comhairle nan Eilean Siar Council and the Applicant, post-consent. Prescriptive measures will be included in the final BEMP to be agreed with NatureScot, Comhairle nan Eilean Siar Council, and additional relevant stakeholders, and to be secured by appropriate planning condition. The success of management prescriptions and habitat creation in achieving the aims and objectives of the BEMP will be monitored, with the results reported to an advisory group, in accordance with timings and protocols to be agreed with NatureScot and Comhairle nan Eilean Siar Council. The BEMP, once finalised, will be a live document, with the habitat management measures implemented being adaptive throughout the lifetime of the Proposed Development in response to the findings of ongoing monitoring.

8.3.8 Baseline Description

8.3.8.1 Desk Study Results

(a) Statutory & Non-Statutory Designated Sites

There are four statutory designated sites located within 5km of the ESA boundary that have ecological qualifying features (**Table 8.4**). One site, North Harris, is designated as a SSSI and an SAC.

There are no woodlands designated in the Ancient Woodland Inventory (AWI) and the Native Woodland Survey of Scotland (NWSS) within 2km of the Planning Application Boundary. There are no conifer plantations listed within the National Forestry Inventory within the 2km buffer of the Application Site Boundary. There are no local biodiversity sites within the 2km buffer of the Application Site Boundary.

Table 8.4 - Statutory Designated Sites within 5km of the Site.

| Site of Interest | Distance from Site (approx.) | Description/Qualifying Features of Interest only | Condition (at last assessed date) |
|---|------------------------------|--|-----------------------------------|
| Sites of Special Scientific Interest & Special Areas of Conservation | | | |

| Site of Interest | Distance from Site (approx.) | Description/Qualifying Features of Interest only | Condition (at last assessed date) |
|--|------------------------------|--|--|
| North Harris SSSI⁵⁷ | 875m | Bryophyte assemblage Subalpine wet heath | Favourable Maintained, 19 Aug 2009 Unfavourable Recovering, 14 Apr 2007 |
| North Harris SAC⁵⁸ | 875m | Acid peat-stained lakes and ponds Alpine and subalpine heaths Acidic scree Blanket bog Depressions on peat substrates Atlantic salmon (<i>Salmo salar</i>) Clear-water lakes or lochs with aquatic vegetation and poor to moderate nutrient levels Dry heaths Freshwater pearl mussel (<i>Margaritifera margaritifera</i>) Otter (<i>Lutra lutra</i>) Montane acid grasslands Plants in crevices on acid rocks Wet heathland with cross-leaved heath | Various Assessments from 2007 to 2016 2007 for each qualifying feature as Unfavourable No change to Favourable Recovered |
| Special Protected Area (SPA) | | | |
| North Harris Mountains SPA⁵⁹ | 875m | Golden eagle (<i>Aquila chrysaetos</i>), breeding | Favourable Maintained, 31 Jul 2015 |
| West Coast of the Outer Hebrides SPA⁶⁰ | 1.2km | Black-throated diver (<i>Gavia arctica</i>), non-breeding Great northern diver (<i>Gavia immer</i>), non-breeding Eider (<i>Somateria mollissima</i>), non-breeding Long-tailed duck (<i>Clangula hyemalis</i>), non-breeding Red-breasted merganser (<i>Mergus serrator</i>), non-breeding Slavonian grebe (<i>Podiceps auritus</i>), non-breeding | Various Assessments made in 2007 for each qualifying feature as Favourable Maintained |

⁵⁷ <https://sitelink.nature.scot/site/1236>

⁵⁸ <https://sitelink.nature.scot/site/8339>

⁵⁹ <https://sitelink.nature.scot/site/8556>

⁶⁰ <https://sitelink.nature.scot/site/10484>

| Site of Interest | Distance from Site (approx.) | Description/Qualifying Features of Interest only | Condition (at last assessed date) |
|------------------|------------------------------|--|-----------------------------------|
| | | Red-throated diver (<i>Gavia stellata</i>), breeding | |

(b) Other Notable Sites

Other notable sites just outwith the 5 km buffer of the site includes the Loch Seaforth Marine Consultation Area (MCA) at 5.1km and Langavat SAC⁶¹ at 5.3km qualified for Atlantic salmon (*Salmo salar*).

8.3.8.2 Baseline Field Survey Results

(a) Phase 1 Classification Overview

A total of ten Phase One habitats were recorded within the survey area. The habitats found within the ESA of the Proposed Development Site were mainly dominated by blanket bog, wet and dry heath and acid grassland, with mosaics of grassland and wet/dry heath, with running water, ditch systems and lochans.

The Phase 1 habitat types recorded within the ESA are listed in **Table 8.5 - The Phase 1 Habitat Classifications** within the ESA of the Proposed Development.

A Phase 1 map is provided in **Appendix 8.1 - Figure 4**.

Table 8.5 - The Phase 1 Habitat Classifications within the ESA of the Proposed Development.

| Phase 1 code | Description |
|---------------|-----------------------------------|
| B1.1 | Acid grassland - unimproved |
| B1.2 | Acid grassland – semi improved |
| B2.2 | Neutral grassland – semi improved |
| D1.1 | Dry dwarf shrub heath - acid |
| D2 | Wet dwarf shrub heath |
| D5 | Dry heath/acid grassland |
| D6 | Wet heath/acid grassland |
| E1.6.1 | Blanket sphagnum bog |
| G1 | Standing water |
| G2 | Running water & ditch systems |
| | Wind Farm Infrastructure |

⁶¹ <https://sitelink.nature.scot/site/8269>

(b) Calculated Phase 1 Area

The area and percentage of habitat, within the Ecological Survey Area, was calculated and is provided in **Table 8.6**. The habitat area calculations are rounded up (to the second decimal point), and with overlapping of habitats, mosaics and the three-dimensional nature of habitats, the areas given are approximations. Habitat area calculations are based on the total area of land within the Habitat Survey Area as 53.12ha.

Table 8.6 - Summary of calculated areas of Phase 1 habitat types within the ESA.

| Phase 1 habitat type | Area (ha) | % of Habitat in main Study Area |
|-----------------------------------|--------------|---------------------------------|
| Acid grassland - unimproved | 0.49 | 0.90 |
| Acid grassland – semi improved | 0.18 | 0.35 |
| Neutral grassland – semi improved | 0.71 | 1.34 |
| Dry dwarf shrub heath - acid | 10.07 | 18.96 |
| Wet dwarf shrub heath | 8.28 | 15.60 |
| Dry heath/acid grassland | 0.61 | 1.14 |
| Wet heath/acid grassland | 1.11 | 2.08 |
| Blanket sphagnum bog | 30.19 | 56.83 |
| Standing water | 0.59 | 1.12 |
| Wind Farm Infrastructure | 0.89 | 1.68 |
| Total | 53.12 | 100 |

(c) Habitat Loss

Part of the existing infrastructure layout is to be utilised for the proposed repowering design at Monan Wind Farm, which will utilise the existing track and the hardstandings. Each new turbine, hardstanding etc is re-positioned differently from the original design, although overlapping (apart from the new layout for Turbine 1) and therefore the footprint for each turbine is taken into consideration for habitat loss. A new access track to Turbine 1, with hardstanding, turbine foundation, and fixed cabinets will result in the loss of habitats. **Table 8.7** lists the type and area of habitat lost for the new sections of the proposal. The total habitat lost to the proposed repowering infrastructure is 0.52Ha.

Table 8.7 - Habitat loss for the Proposed Repowering Design at Monan Wind Farm.

| Habitat at Repowering Infrastructure | Area (ha) | % of Habitat in Repowering Infrastructure Area |
|--------------------------------------|-------------|--|
| Acid grassland – semi improved | 0.03 | 5 |
| Dry dwarf shrub heath - acid | 0.15 | 29 |
| Wet dwarf shrub heath | 0.17 | 33 |
| Dry heath/acid grassland | 0.05 | 9 |
| Blanket sphagnum bog | 0.12 | 24 |
| Total | 0.52 | 100 |

(d) NVC Survey Results

A total of six National Vegetation Communities (NVC) vegetation types were located in this survey and are presented in **Table 8.8**. The full details of the National Vegetation Classification & Habitats Survey are within **Appendix 8.1**.

Table 8.8 - National Vegetation Classification types recorded within the ESA.

| NVC type | Description |
|----------|---|
| U5e | <i>Nardus stricta-Galium saxatile</i> grassland |
| MG10a | <i>Holcus lanatus-Juncus effusus</i> rush-pasture, typical sub-community |
| H10b | <i>Calluna vulgaris-Erica cinerea</i> heath, <i>Racomitrium lanuginosum</i> sub-community |
| M15a | <i>Scirpus cespitosus-Erica tetralix</i> wet heath, <i>Carex panicea</i> <u>sub-community</u> |
| M15c | <i>Scirpus cespitosus-Erica tetralix</i> wet heath, <i>Cladonia</i> spp. sub-community |
| M17b | <i>Scirpus cespitosus-Eriophorum vaginatum</i> blanket mire, <i>Cladonia</i> spp. sub-community |
| Other | Non-NVC type (loch, watercourses, ditches, fences & tracks) |

(e) GWDTE Assessment Results

Table 8.9 summarises the habitats found in the survey and following the Scottish Environmental Protection Agency Guidance (SEPA, 2017a; 2017b), are classed as Groundwater Dependent Terrestrial Ecosystems (GWDTE).

- MG10a and M15a/c have moderate groundwater dependency (Class 2 GWDTE).
- M17b, U5e and H10b have low groundwater dependency (Class 3 GWDTE)

It is concluded that the main habitats within the site which are described as groundwater dependent (MG10a) may be due to disruption of the soil and drainage impacts from the previous works undertaken for the wind farm.

The M15a and M15c sub-communities may be due to bog habitat seepage and potential water flow through fractures and other discontinuities in the surrounding rock. The hydrogeology indicates that this is a low productivity aquifer (Class 2C) which does not widely contain groundwater in exploitable quantities but where possible some bedrock formations can locally yield water supplies. It may also be likely that there is no reliably available source of groundwater on which the NVC communities can depend. Therefore, they are likely to rely on a combination of rainfall and surface runoff, with some direct surface water in areas adjacent to watercourses and waterbodies.

A figure illustrating the potential GWDTE recorded is presented in **Appendix 8.1: Figure 7**. An evaluation of site-specific groundwater dependency is detailed in **Appendix 8.1**.

Table 8.9 - NVC communities and their GWDTE score (1= Strong dependency upon groundwater, 2= likely to be some dependency, 3= slight or no dependency: site fed by other water sources)

| NVC Community | GWDTE score (1, 2, or 3) |
|--|-----------------------------|
| M15a <i>Scirpus cespitosus-Erica tetralix</i> wet heath, <i>Carex panicea</i> <u>sub-community</u> | 2 |
| M15c <i>Scirpus cespitosus-Erica tetralix</i> wet heath, <i>Cladonia</i> spp. sub-community | 2 |
| MG10a <i>Holcus lanatus-Juncus effusus</i> rush-pasture, typical sub-community | 2* |
| U5e <i>Nardus stricta-Galium saxatile</i> grassland | 3 |
| H10b <i>Calluna vulgaris-Erica cinerea</i> heath, <i>Racomitrium lanuginosum</i> sub-community | 3 |
| M17b <i>Scirpus cespitosus-Eriophorum vaginatum</i> blanket mire, <i>Cladonia</i> spp. sub-community | 3 |

* GWDTE Score Scotland or may vary for different hydroecological settings.

∞ Country Occurrence: Scotland only – Not in England & Wales

Explanation of GWDTE scores:

1 – Strong dependency upon groundwater discharge.

2 – Likely to be some dependency on groundwater discharge.

3 – Groundwater discharge usually irrelevant: site fed by other water sources.

The available water capacity of the soil is listed as 379.93mm over peat soil and peaty gleyed podzols. This is in the high-value range, with high values indicating a potential water excess.

Soil water holding capacity is a fundamental ecosystem service and the type of soil is related to the ability of water to percolate through the soil and how it is stored and redistributed across flow paths to groundwater and surface water bodies. Consequently, the properties of both terrestrial and freshwater aquatic life depend on the hydrologic processes in soil. This impacts the type of botanical communities found on site, on species dependent on water availability, and on the watercourses on site.

8.3.8.3 Protected Species Survey Results

The Site provides suitable habitat for water vole, otter, mountain hare, reptiles and amphibians, albeit to varying degrees. A summary of the results of the protected species field surveys are listed below, with the full Protected Species Survey results in **Appendix 8.2**.

(a) Otter

Suitable habitat is present for otter on Site and no field signs were noted within the Application Site Boundary, however, otter droppings on rocks were recorded at Loch na Sgeireagan Mor. Otter are known to be in the general area. There is habitat connectivity with Loch na Sgeireagan Mor and the Site and otter can utilise the Site.

(b) Water Vole

No signs of water vole were recorded within the ESA.

(c) Mountain Hare

Two mountain hare were recorded during the survey period in the upland areas.

(d) Reptiles & Amphibians

The habitat present on Site provides good reptile habitat (moorland, stone outcrops) for species such as common lizard in discrete areas. Habitats were suitable for amphibians, such as, common frog in the wetter areas of vegetation (such as soft-rush and sharp flowered rush) and were noted occasionally during surveys.

8.3.8.4 Overall Site Assessment

The main habitats of the Proposed Development are as follows;

- The habitat is dominated by blanket bog, upland heath (wet and dry heath) and occasional acid grassland. Dry heath is also located in drier soils and associated with stone outcrops.
- There are un-named watercourses and drainage systems within the ESA.
- The Abhainn Ceann an Ora flows into Loch na Sgeireagan Mor with connectivity to Loch na Sgeireagan Beag and Loch a'Mhorghain. The Abhainn Ceann an Ora flows south-west into the sea Loch Bun Abhainn Eadarra.
- The Abhainn Glaic a' Choin duinn watercourse has not been classified by SEPA and is part of the Lewis and Harris Coastal catchment. This watercourse flows south-west into the sea Loch Bun Abhainn Eadarra.

- The Proposed Development is on the following soil types;
 - > Class 1: This soil type is a nationally important carbon-rich soil of deep peat and priority peatland habitat which and has high conservation value. Part of the Proposed Development and previous development footprint of Monan Wind Farm is designed within this area.
 - > Class 2: Nationally important carbon-rich soils, deep peat and priority peatland habitat. Areas of potentially high conservation value and restoration potential. Part of the Proposed Development is within Class 2 soil, with some of the previous development footprint of Monan Wind Farm within Class 2 soil.
- The NVC classification indicates that some NVC communities align with moderate to low GWDTE classification, with many communities with no dependency on groundwater.
- The habitats that have moderate groundwater dependency can be associated with flow through rock fractures, and the geology of the Lewisian Complex is noted as a low productivity aquifer that is generally of low permeability.
- The Annex I type 7130 Blanket bog partially correlates with the NVC community M17 within the ESA. The bog habitats within the study area are impacted by grazing and a section of drainage. There are historical track and hardstanding edge effects on habitats. However, some communities are in good overall condition, or have the ability to improve under the correct management. Therefore, the Annex I type 7130 Blanket Bog does partially correlate with the NVC community within the study area.
- The Annex I type 4010 Northern Atlantic wet heaths with *Erica tetralix* partially correlates with the NVC community M15 and its variants, within the ESA with drainage and grazing impacts evident in some sections of the habitat.
- The Annex I type 4030 European Dry Heaths partially correlates with the NVC community H10 within the ESA. Where the H10 is natural and not impacted by historical modification, then it does correlate with that of the 4030 community, however, this habitat is also located near drainage channels along the track and infrastructure edges, where the soil has been disturbed and is drier.
- A Habitat Management & Monitoring Plan (HMMP) is to be outlined which considers upland heath and peatland restoration which also benefits and maintains hydrological connectivity.
- Multiple design iterations have been undertaken with the aim of mitigating impact on peat deposits and micro-siting of the turbine locations. Peat considerations are further discussed in **Chapter 7 – Hydrology** and its associated appendices.
- The habitat is suitable to varying degrees for otter, water vole, mountain hare, amphibians and reptiles.
- Species Protection Plans will be undertaken, and standard mitigation is proposed for protected species such as otter, water vole and mountain hare.

8.4 Determination of Important Ecological Features

Table 8.10 evaluates the importance of ecological features associated with the Proposed Development, and determines which ecological features, based on both their intrinsic value and their potential to be affected by the project, are considered to be IEFs.

Each ecological feature has been assigned a level of importance in accordance with the geographical scale outlined in **Table 8.2**. Features of Local or Less than Local importance, and those to which impacts can be categorically ruled out, are scoped out of further assessment. However, if impacts to such features – even if not significant in terms of EclA – may result in legal offences then suitable safeguards will be presented in **Section 8.7**.

Table 8.10 - Determination of ecological importance.

| Ecological Feature | Evaluation Rationale | Conservation Importance | IEF/Action |
|--|--|-------------------------|------------------------------|
| Statutory Designated Sites | | | |
| North Harris SSSI⁶² | <p>This designation is located to 875m to the north-west of the Site. The qualifying feature is Bryophyte assemblage (condition assessed as Favourable Maintained) and Subalpine wet heath (condition assessed as Unfavourable Recovering).</p> <p>Due to the distance of the designation and absence of direct connectivity, it is not anticipated that the designation and its qualifying feature will be directly or indirectly affected by the Proposed Development.</p> | International/National | No/ Scoped out of assessment |
| North Harris SAC⁶³ | <p>This designation is located 875m to the north-west of the Site. The qualifying features include alpine, bog and acidic habitats, clear water lochs and Atlantic salmon. Various assessments from 2007 to 2016 2007 for each qualifying feature included a range from Unfavourable No change to Favourable Recovered.</p> <p>Due to the distance of the designation and absence of direct connectivity it is not anticipated that the designation and its qualifying features will be directly or indirectly affected by the Proposed Development.</p> | International | No/ Scoped out of assessment |
| North Harris Mountains SPA⁶⁴ | <p>This designation is located 875m to the north-west of the Site. The qualifying feature is for breeding Golden eagle (<i>Aquila chrysaetos</i>) and was assessed to be Favourable Maintained condition (assessed 2015).</p> | International/National | No/ Scoped out of assessment |

⁶² <https://sitelink.nature.scot/site/1236>

⁶³ <https://sitelink.nature.scot/site/8339>

⁶⁴ <https://sitelink.nature.scot/site/8556>

| Ecological Feature | Evaluation Rationale | Conservation Importance | IEF/Action |
|---|--|-------------------------------|-------------------------------------|
| | <p>This designated site and its qualifying ornithological feature will be assessed within Chapter 9: Ornithology and is therefore scoped out of the ecological assessment.</p> | | |
| <p>West Coast of the Outer Hebrides SPA⁶⁵</p> | <p>This designation is located 1.2km to the south-west of the Site.</p> <p>The qualifying feature is for breeding and non-breeding birds and was assessed in 2007 for each qualifying feature as Favourable Maintained.</p> <p>This designated site and its qualifying ornithological features will be assessed within Chapter 9: Ornithology and is therefore scoped out of the ecological assessment.</p> <p>However, there is hydrological connectivity (via the Abhainn Glaic a' Choin-duinn) to this designated site and all standard mitigation procedures will be implemented for silt and pollution control at the Proposed Development, and it is not anticipated that the designation and its qualifying feature will be directly or indirectly affected by the Proposed Development.</p> | <p>International/National</p> | <p>No/ Scoped out of assessment</p> |
| <p>Habitat</p> | | | |
| <p>M15a/c</p> | <p>Habitat is included within the Scottish Biodiversity List and within the Annex 1 habitat Northern Atlantic wet heaths with <i>Erica tetralix</i>.</p> <p>Common and widespread habitat in the north and west of Scotland. This community is not regarded as natural due its formation on deep peat after burning, grazing, drainage and peat cutting has modified the original bog habitat.</p> <p>This is classified as a moderate GWDTE.</p> | <p>Local</p> | <p>No/ Scoped out of assessment</p> |

⁶⁵ <https://sitelink.nature.scot/site/10484>

| Ecological Feature | Evaluation Rationale | Conservation Importance | IEF/Action |
|--------------------|--|-------------------------|------------------------------|
| | <p>The direct impact of habitat lost to the proposed repowering infrastructure is wet dwarf shrub heath (M15), with a loss of 0.17Ha.</p> <p>Despite this community being associated with Annex I and SBL classifications, the habitat within the ESA is not considered to be Nationally or Regionally important due to its size, fragmented distribution, and quality and anthropogenic effects. Therefore, assigning a Nature Conservation Value higher than Local is not deemed appropriate. In addition, mire habitat of this quality is relatively widespread across the local area of the Outer Hebrides, as well as within the west and north of mainland Scotland.</p> <p>A Habitat Management & Monitoring Plan (HMMP), or a Biodiversity Enhancement management Plan (BEMP), is to be outlined which considers peatland restoration which also benefits and maintains hydrological connectivity throughout.</p> <p>This will include embedded environmental mitigation measures and adoption of good practice (Section: Embedded Mitigation & Good Practice), in particular where habitat fragmentation may arise from the new track construction.</p> <p>There will be a minor impact on the integrity of this IEF and has therefore been scoped out of the assessment.</p> | | |
| MG10a | <p>This is a wet grassland dominated by <i>Juncus</i> spp.</p> <p>The MG10a community was located in the southern section of the ESA, as a mosaic with acid grassland and bog habitat, close to the main road, in a water-logged area that had been previously disturbed.</p> | Less than Local | No/ Scoped out of assessment |

| Ecological Feature | Evaluation Rationale | Conservation Importance | IEF/Action |
|--------------------|--|-------------------------|-------------------------------------|
| | <p>Located in topographic situations where a suitable aquifer or point of discharge would not typically be present. MG10 has limited species diversity and ecological value and is not a conservation priority.</p> | | |
| <p>M17b</p> | <p>This vegetation community is the main bog habitat within the ESA, forming mosaics with M15 and H10b, and occasionally acid grassland U5e. Potential GWDTE of low dependency.</p> <p>The M17 habitat is included within the Scottish Biodiversity List and within the Annex 1 habitat for blanket bog. The M17b community on site has partial correlation to Annex 1 habitats due to historical management practices. Although slightly modified due to drainage and grazing, this habitat plays a large role in the ecological character of the site.</p> <p>The M17b habitat direct loss due to the proposed repowering infrastructure is a loss of 0.12Ha. However, the Proposed Development may have indirect impacts on the surrounding blanket bog and other habitats and their mosaics, therefore, a Habitat Management & Monitoring Plan (HMMP), or a Biodiversity Enhancement management Plan (BEMP), is to be outlined which considers biodiversity enhancement, upland heath and peatland restoration which also benefits and maintains important hydrological connectivity throughout.</p> <p>Due to the negative pressures resulting from historical land management practices, such as some drainage and grazing. The bog habitat is not considered to be of Regional importance but as having 'Local' importance.</p> <p>The bog habitats that are present have potential for restoration, and a Habitat Management & Monitoring Plan is to be outlined which considers peatland restoration which also benefits the mire and marsh communities and maintains hydrological connectivity.</p> <p>This will include embedded environmental mitigation measures and adoption of good practice (Section: Embedded Mitigation & Good Practice), in particular where habitat fragmentation may arise from the new track construction.</p> | <p>Local</p> | <p>No/ Scoped out of assessment</p> |

| Ecological Feature | Evaluation Rationale | Conservation Importance | IEF/Action |
|--------------------|---|-------------------------|-------------------------------------|
| | <p>There will be a minor impact on the integrity of this IEF and has therefore been scoped out of the assessment.</p> | | |
| <p>H10a</p> | <p>The H10 habitat is included within Annex 1 habitat for European Dry Heaths, and correlates partially in more natural, undisturbed areas.</p> <p>The H10 community is located on site in areas of shallow, drier peat and more rocky outcrops. It is associated with wet heath and blanket bog on site which forms mosaics due to the geology and topography. H10 is closely associated with the drier regions located near drainage channels along the track and infrastructure edges, where the soil has been disturbed and is drier. H10 forms mosaics with acid grasslands in these areas.</p> <p>The H10a habitat direct loss due to the proposed repowering infrastructure is a loss of 0.15Ha. However, the Proposed Development may have indirect impacts on the surrounding dry heath and other habitats and their mosaics, therefore, a Habitat Management & Monitoring Plan (HMMP), or a Biodiversity Enhancement management Plan (BEMP), is to be outlined which considers biodiversity enhancement, upland heath and peatland restoration which also benefits and maintains important hydrological connectivity throughout.</p> <p>This will include embedded environmental mitigation measures and adoption of good practice (Section: Embedded Mitigation & Good Practice), in particular where habitat fragmentation may arise from the new track construction.</p> <p>There will be a minor impact on the integrity of this IEF and has therefore been scoped out of the assessment.</p> | <p>Local</p> | <p>No/ Scoped out of assessment</p> |
| <p>U5e</p> | <p>Potential GWDTE of low dependency.</p> <p><i>Nardus stricta-Galium saxatile</i> grassland listed with a watching brief only.</p> <p>Acid grassland is a typical habitat of moderate altitudes on free draining and slightly acidic soils. Found to be forming mainly mosaics with other habitats within the Site.</p> <p>Habitat is considered of Local Importance.</p> | <p>Local</p> | <p>No/ Scoped out of assessment</p> |

| Ecological Feature | Evaluation Rationale | Conservation Importance | IEF/Action |
|---|--|-------------------------|------------------------------|
| | There will be a minor impact on the integrity of this IEF and has therefore been scoped out of the assessment. | | |
| Watercourses & ditch systems | Habitat is included within the Scottish Biodiversity List, and the Habitats Directive. Common and widespread habitat internationally to locally. | Local | No/ Scoped out of assessment |
| Species | | | |
| Otter | <p>Otters are protected under the Conservation (Natural Habitats, &c.) Regulations 1994 as a European Protected Species. Otter is a priority species in the UKBAP, NLBAP and the SBL and listed as ‘near threatened’ globally by the International Union for Conservation of Nature (IUCN). However, in Scotland it is listed by the IUCN as ‘vulnerable’.</p> <p>Both the UK and Scottish otter population is in a favourable and inclining condition. The Scottish Otter population is estimated to be around 8,000 Otters⁶⁶.</p> <p>Evidence of otter was recorded on site. Otter is considered of Local Importance. Otter have been recorded at Loch na Sgeireagan Mor which has hydrological and habitat connectivity with the Site.</p> <p>Proposed embedded mitigation of the provision and implementation of the SPP, CEMP (including Pollution Prevention Plan) and presence of an ECoW during construction (incorporating pre-construction otter surveys and ongoing otter monitoring during the construction period), would ensure that all reasonably practicable measures are taken during construction so that provisions of the relevant wildlife legislation are complied with.</p> | Local | No/Scoped out of assessment |

⁶⁶ SNH (2015) Trend Note Number 23: Trends of Otters in Scotland. November 2015

| Ecological Feature | Evaluation Rationale | Conservation Importance | IEF/Action |
|--------------------------|---|-------------------------|------------------------------------|
| | <p>These measures would ensure direct and indirect effects on otter are avoided or reduced to a negligible level. Should otter be affected by minor and non-significant levels of disturbance and/or temporarily displaced during construction, there are abundant foraging and sheltering opportunities locally (out with the study area) for this mobile and wide- ranging species that would ensure that there are no risks to the otters’ population viability or overall distribution locally. The Proposed Development is also not considered likely to result in fragmentation of otter populations or territories, nor create any barrier effects with respect to the movement of otters locally. In taking account of the above and standard and proven mitigation measures, any adverse effects on otter can be discounted and a likely significant effect from the Proposed Development on otter can be ruled out.</p> | | |
| <p>Water Vole</p> | <p>Water Vole is legally protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and is a priority species in the UKBAP, NLBAP and the SBL. Although the current UK population (132,000) is believed to have declined by 50% since 1998, and the species are in decline in both England and Wales, the Scottish population, which is largely genetically and phenotypically distinct, is in fact increasing in size, with a stable range.</p> <p>The species is listed on the IUCN Red list and ‘near threatened’ in Scotland, but ‘endangered’ elsewhere in the UK.</p> <p>No evidence of water vole was recorded within the survey area, however there was suitable upland habitat such as watercourse edge/bank side vegetation.</p> <p>Water vole are not normally present within the Isle of Harris, but one was noted in the southern section of Harris in 2019.</p> | <p>Local</p> | <p>No/Scoped out of assessment</p> |

| Ecological Feature | Evaluation Rationale | Conservation Importance | IEF/Action |
|----------------------------------|---|-------------------------|-----------------------------|
| | As a precautionary principle a pre-construction survey will be implemented. | | |
| Mountain Hare | <p>Mountain hare is an SBL species and are protected under the Schedule 5 of the Wildlife & Countryside Act 1981 (as amended).</p> <p>Mountain hare were recorded within the Site.</p> <p>This is a highly mobile species which enables them to move away from construction activities.</p> <p>With the application of standard best practices measures and a Species Protection Plan which includes a pre-construction survey, then the potential for construction effects have been managed. Mountain hare is therefore scoped out of further assessment.</p> | Local | No/Scoped out of assessment |
| Amphibians & Reptiles | <p>Common amphibian species are protected under the Wildlife and Countryside Act 1981 (as amended) against intentional or reckless killing and injury.</p> <p>The habitat present on Site provides good reptile habitat for species such as common lizard, which were not noted during the surveys.</p> <p>The species are considered of Local Importance and are scoped out of the assessment.</p> | Local | No/Scoped out of assessment |

8.4.1.1 *Scoped Out of the Assessment of Likely Significant Effects*

Following the systematic evaluation of importance outlined in **Table 8.10** the majority of the ecological features have been scoped out of inclusion of Assessment of Likely Significant Effects and are not considered to be IEFs.

Although the IEFs that have been scoped out of further assessment within this Chapter, measures to mitigate or avoid potential effects on these IEFs have been included within Embedded Mitigation to help ensure legislative compliance of works as well as adherence to accepted industry practice. See **Section 8.3.7.8** on Embedded Mitigation.

8.5 Ecological Impact Assessment

8.5.1 Assessment of Likely Significant Effects of the Proposed Development

8.5.1.1 *Construction Phase: Likely Significant Effects*

There are three main ways by which habitat features may be affected during the construction phase:

- Direct loss – to accommodate the Proposed Development infrastructure, where losses are considered permanent;
- Disturbance – the effects of disturbance are variable in their extent, depending on the nature of the disturbance and sensitivity of the habitat feature. Some disturbance types (for example, creation of temporary hardstanding areas at the contractor’s compound) result in medium- to long-term disturbance which requires extended recovery periods. In other cases (for example, installation of cables at the sides of access tracks, traversing of machinery) disturbance is short-term, and certain habitat types are able to recover quickly; and
- Indirect effects – these primarily relate to changes in hydrology of wetlands in the context of a wind farm development, the potential for runoff, erosion, and sedimentation, along with pollution which may result in the event of contaminant spillage.

8.5.1.2 *Overall Habitat Loss Summary*

The construction of the Proposed Development will cause the loss of and disturbance to habitats during construction and the effects may be both permanent and temporary. As this is a repowering of the existing Monan Wind farm, part of the existing infrastructure layout is to be utilised for the proposed repowering design, which will utilise the existing track and the hardstandings. Each new turbine, hardstanding etc. is re-positioned differently from the original design, although overlapping (apart from the new layout for Turbine 1) and therefore the footprint for each turbine is taken into consideration for habitat loss. A new access track to Turbine 1, with hardstanding, turbine foundation, and fixed cabinet will result in the loss of habitats, as detailed in **Appendix 8.1**.

Permanent losses are straightforward to calculate based on the Proposed Development layout (see **Appendix 8.1: Table 5**), but estimates of temporary losses, such as those caused by construction activities (e.g. vehicle movements and stockpiling) in the areas surrounding built infrastructure, are more difficult. However, temporary losses can be assumed to be relatively limited in extent, based on experience of the construction of similar developments, and so are assumed, on a *precautionary principle*, to equate to approximately 20% of the areas permanently lost.

(a) Construction Phase: Likely Significant Effects

The ecological baseline has been considered throughout the design process of the Proposed Development, including design meetings and communications with specialists providing input to subsequent design iterations. This was with the aim to either eliminate or reduce the potential for any significant effects on receptors and

following the 'mitigation hierarchy', as described in CIEEM guidance (CIEEM, 2018). The mitigation hierarchy follows a sequence of avoidance, mitigation, compensation and enhancement measures to be identified as part of the EclA. Ecological and hydrogeological factors taken into account throughout the design process include the following;

- A minimum of 50m buffer for any infrastructure, or construction activity around all watercourses, except where watercourse crossings/upgrading works are required.
- Multiple design iterations have been undertaken with the aim of mitigating impact on peat deposits and micrositing of the turbine locations.

Project assumptions of embedded mitigation measures in relation to good practice construction measures, and pollution prevention controls (as detailed within **Chapter 7: Hydrology**) will be implemented in order to safeguard the ecological receptors from any potential significant effect as a result of the Proposed Development. Additionally, micrositing, informed by the ECoW, will help to further reduce impacts.

In light of the above and with the addition of mitigation measures, the detrimental effects of the Proposed Development related to construction on the overall habitat is of negligible magnitude, as detailed in **Table 8.3**. Therefore, it is considered to be not significant in terms of the EIA Regulations.

(b) Operational Phase: Likely Significant Effects

The Proposed Development operation of the wind farm and infrastructure impacts will be of low magnitude, long term and therefore of minor significance and reversible.

Any operational effects will be negligible and thus not significant in terms of the EIA Regulations.

(c) Decommissioning Phase: Likely Significant Effects

The existing Monan Wind farm will undergo decommissioning works, prior to the Construction Phase, as well as consideration of the end of operational life Decommissioning Phase of the Proposed Development.

Slight negative cumulative impacts could occur at the local level from decommissioning works. These are anticipated to be of a similar nature to the construction phase impacts, but of lower magnitude as detailed in **Table 8.3**. Decommissioning impacts to the habitats are considered temporary, reversible, of negligible magnitude and considered to be not significant in terms of the EIA Regulations.

8.5.2 Residual Effects

No significant residual effects are predicted, in terms of the EIA Regulations, following the implementation of embedded mitigation.

8.5.3 Cumulative Effect Assessment

The EIA Regulations require the cumulative effects of the Proposed Development with other relevant projects or plans to be assessed. In considering cumulative effects, it is necessary to identify any effects that may not be significant in isolation but that may be significant in combination with other developments. This assessment considers that cumulative effects can result from effects that were individually assessed as non-significant, but in combination with effects or actions taking place over time, or across a wider spatial range, such as where the zone of influence of other developments or actions may overlap with the Proposed Development, then non-significant effects may cumulatively be considered significant.

Cumulative effects are particularly important in EclA as ecological features may be already exposed to background levels of threat or pressure and may be close to critical thresholds where further impact could cause irreversible

decline. Cumulative impacts are only likely to influence the more mobile species such as bats, mountain hare and badgers.

8.5.3.1 Cumulative Effects on Habitats

There are no consented wind farms within 10 km of the Site (this range has been identified as the EZoI for the ecological receptors at the Site, such as bats), as detailed in **Table 8.11**. This table also includes other relevant operational wind farm developments on the Isle of Harris.

Table 8.11 - Wind farms and relevant developments on the Isle of Harris.

| Cumulative Development | Status | Distance from Planning Application Boundary |
|--|-------------|---|
| Consented Overhead Line | | |
| SSEN 132kv HV Connection Harris to Stornoway (Replacement) ⁶⁷ | Consented | 0km (within Planning Application Boundary) |
| In Planning Wind Developments | | |
| Uisenis/Eishken (Muaitheabhal) Wind Farm (updated application: new design) ⁶⁸ | In Planning | 16km |
| Operational Wind Developments on the Isle of Harris | | |
| Arnish Moor | Operational | 34km |
| Point Wind / Beinn Ghrideag Farm & extension | Operational | 36km |
| Pentland Road (incorporating Beinn Mholach) | Installed | 37km |
| Loch Sminig Wind Project | Operational | 52km |

The impact of the proposed wind farm on the ecological value of the Site is not anticipated to extend beyond the Planning Application Boundary. No protected species recorded during the surveys are likely to be affected by an additional wind farm development / operation in the area or other developments within the potential zone of influence. The habitats and other species present at the Site are not anticipated to be affected by cumulative impacts.

Any potential effects on designated sites such as listed in **Table 8.11** would be negligible, and they would not combine with any effects from other projects such that the addition of the proposed wind farm's effects would result in a significant effect. The cumulative effects on these sites are predicted to be not significant.

8.5.4 Statement of Significance

No significant adverse effects in EIA terms are considered to occur to habitats and protected species.

Following the application of mitigation, such as habitat management plans, species protection plans and standard working methods and good practice measures, such as a CEMP and pollution prevention measures, no significant residual effects are predicted. Therefore, embedded mitigation has been proposed to ensure the low significance of effects during the construction phase and to reduce the likelihood of legal offences and comply with good practice.

⁶⁷ <https://www.energyconsents.scot/ApplicationDetails.aspx?cr=ECU00004490>

⁶⁸ <https://www.energyconsents.scot/ApplicationDetails.aspx?cr=ECU00004568>

- Habitat Management and Monitoring Plans are advised to protect and enhance good quality habitat and effective hydrological connectivity for bog, upland habitats and watercourses.
- Biodiversity enhancement is proposed to secure positive effects for biodiversity under NPF4: Policy 3: Biodiversity and cross-cuts into other themes, such as Policy 5: Soils. Additional biodiversity measures are included and are of an ecological and practical nature and comprise of the most suitable and locally appropriate biodiversity measures specific to the location of the Isle of Harris, and the Proposed Development area. This will be managed and monitored via a Biodiversity Enhancement Management Plan (BEMP).
- Species Protection Plans have been advised in **Appendix 8.2** for otter, water vole and mountain hare.

This assessment does not predict any likely *significant ecological residual effects* associated with the Proposed Development.

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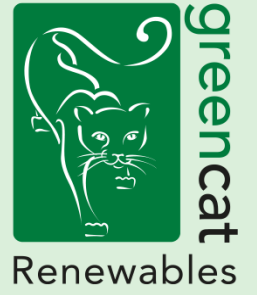
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