Millenium East Wind Farm

Environmental Impact Assessment (EIA) Report

Technical Appendix 6.2: Protected Terrestrial Mammals

avianecology

CONTENTS

ANNEXES

1 INTRODUCTION

1.1.1 This Technical Appendix has been prepared to accompany **Chapter 6: Ecology** of Millenium East Wind Farm Extension ('the Proposed Development') EIA Report.

1.1.2 It presents detailed methodologies and results of desk studies and field surveys completed to establish baseline conditions with regards to protected and notable terrestrial mammal species (excluding bats which are considered separately in **Technical Appendix 6.3**) the following figures presented in **Volume 2a** of the EIA Report:

- **Figure 6.1:** Statutory Sites Designated for Ecological Interest; and
- **Figure 6.4:** Terrestrial Mammal Survey.

1.1.3 The objective of the baseline studies was to establish the presence and spatial distribution of protected terrestrial mammal species which may be impacted by the Proposed Development.

1.1.4 Only common species names are used throughout this Technical Appendix. Scientific names for all species referenced are supplied in **Annex 1**.

1.2 Terminology

1.2.1 To aid clarity, throughout this appendix and **Chapter 6: Ecology**, the following terms are used to describe components of the Site:

- Development Area: defined as that part of the Site where the wind turbines and associated infrastructure, including new track and substation are proposed; and
- Access Route: defined as that part of the Site encompassing the existing Millennium Wind Farm access track from the A887 to the Development Area.

1.2.2 The Site, the boundary of which is shown in red as the Application Boundary on **Figure 2.1** and all figures accompanying Chapter 6: Ecology, therefore comprises the Development Area, the Access Route, and also small areas to the north and north-west of the Access Route proposed for habitat creation, enhancement and management under the outline Biodiversity Enhancement Management Plan (oBEMP; see **Technical Appendix 6.7**).

1.2.3 Due to the iterative approach to design that has been ongoing throughout the baseline survey period, the Site boundary and survey scope has evolved over the course of baseline studies. Therefore, the surveys have been undertaken with reference to 'Study Areas' which are defined below and shown on **Figure 6.4**, and which do not in all cases precisely correspond with the Application Boundary of the Site.

- Study Area 1: An early iteration of the site boundary, comprising an early proposed developable area only, and excluding site access. Surveyed in August 2022.
- Study Area 2: Following Year 1 surveys the preliminary site boundary was extended to the north towards Druim á Chàthair. The extended developable area was surveyed in August and September 2023.
- Study Area 3: In late 2023 the Scoping boundary was developed, with the boundary extended to the forestry to the north, and inclusion of the Access Route from the Development Area to the A887. Gaps between previously surveyed areas (Study Area 1 and Study Area 2) and the Site Boundary, including the Access Route, were surveyed in June 2024.

1.2.4 The areas surveyed (the Survey Areas) are appropriate buffers of the Study Area for a given survey and have been defined with reference to appropriate industry standard guidance. How Survey Areas relate to the Application Boundary is shown on **Figure 6.4** and discussed in the survey method sections where relevant.

2 METHODOLOGY

2.1 Desk Study

2.1.1 The desk study has included a review of the following key sources summarised in **Table 2.1.**

2.1.2 Additional peer reviewed literature and industry guidance has also been reviewed and is referred to where relevant.

Table 2.1: Desk Study Key Sources and Information Sought.

Key Source	Date of Consultation	Information Sought	Search Area
NatureScot's Sitelink https://sitelink.nature.scot/home	14th November 2024	Proximity to statutory designated sites, with terrestrial mammal interests.	Within 10 km of the Site boundary
Highland Biological Recording Group (HBRG)	3rd October 2023	Existing terrestrial mammal records (since, and including, 2012). Non-statutory designated sites.	Within 2 km of Study Area 1.

2.2 Field Surveys

2.2.1 NatureScot was informally consulted in respect to field survey scope and methodologies prior to commencement (see **Chapter 6, Table 6.1**).

2.2.2 In consultation with NatureScot (see **Chapter 6, Table 6.1**) detailed information regarding the presence, or likely presence, of protected and notable terrestrial mammal species within proximity to the Proposed Development has been derived through field survey for the following species:

- Otter;
- Water Vole;
- Badger;
- Pine marten; and
- Red squirrel.

2.2.3 Whilst not the focus of surveys, evidence of other protected species such as mountain hare or wildcat was recorded if encountered.

Terrestrial Mammal Survey Area

2.2.4 The mammal survey areas (in this case corresponding to the Study Areas defined in **Section 1.2**) are shown on **Figure 6.4**, and comprised the majority of the Site including a 250 m buffer of the Proposed Development, in accordance with NatureScot guidance (2024a-e).

2.2.5 The watercourses draining the Site (Allt Dail a Chuirn, Allt Lundie, Allt Phocaichain, Allt a Chaise and other tributaries of the Invervigar Burn) were surveyed for signs of otter where they fall within the mammal survey area.

Terrestrial Mammal Survey Methods

2.2.6 The survey comprised an assessment of habitat suitability for terrestrial mammals and a systematic search of habitat features, to record the location and distribution of field signs identifying the presence and/ or potential presence of protected terrestrial mammal species within the mammal Study Areas as summarised in **Table 2.2**. The survey methodology followed industry standard guidance (Chanin, 2003; Cresswell *et al.,* 2012; Gurnell *et al*., 2009; Strachan *et al.,* 2011; and Harris *et al.,* 1989).

Table 2.2: Terrestrial Mammal Field Survey Methodology Summary.

Species	Survey Methodology Summary
Otter	Walkover search of suitable habitat within the mammal Survey Area for spraints, paw prints, paths, slides, food remains, holts, and places used for breeding and/ or shelter.
Water vole	Walkover search of suitable habitat within the mammal Survey Area for: prints, droppings, feeding stations and burrows along watercourses.
Badger	Walkover search of suitable habitat within the mammal Survey Area for: prints, latrines, sett, snuffle holes and hair.
Pine marten	Walkover searches of all potentially suitable habitat were carried out within a 50m buffer of the mammal Survey Area for signs of pine marten and potential den sites.
Red squirrel	Walkover search to identify suitable habitat subsequently searched for observations, dreys, feeding signs and droppings.

2.2.7 The surveys were undertaken on 26th August 2022, 27th September 2023 and 24th to 27th June 2024.

2.2.8 The survey was undertaken in conditions conducive to the survey of terrestrial mammals (however see *Limitations* section regarding weather conditions).

Personnel

2.2.9 The field survey was undertaken by Mr M. Wood, Mr C. Watson and Mr R. Whytock ACIEEM, who are highly experienced field ecologists with considerable experience in the survey and identification of field signs of protected mammal species in Scotland.

Limitations

2.2.10 Surveys were scheduled to be undertaken during appropriate weather conditions; however, it should be noted that weather conditions on the west coast of Scotland are extremely changeable.

2.2.11 Accurately identifying pine marten scat in the field is challenging due to its similarity to that of other carnivores such as fox, with DNA analysis sometimes required to provide certainty in identification. Due to the geographic location of the Site, and the suitable habitats for this species present at the periphery and within the Access Route corridor, pine marten presence is considered likely albeit at low density, and given the low likelihood of significant impacts to this species (i.e. no loss of habitat

considered suitable for denning) DNA analysis is not considered proportionate. As such, all potential pine marten scat has been considered to be pine marten for the purposes of informing assessment.

2.2.12 Suitable areas of pine marten denning habitat in the woodland areas at the north of the Site and through the Access Route corridor were searched for dens but the density of the trees made searching for these features difficult in some places. None of these areas will be impacted by or are within a Zone of Influence of the Proposed Development and so this is not considered to represent a limitation to assessment.

2.2.13 Biological record data has been obtained for Study Area 1 and a 2km buffer only. This is not considered a significant constraint due to the extensive survey effort undertaken within the Site.

3 RESULTS

3.1 Desk Study

Statutory Designated Sites for Nature Conservation

3.1.1 A review of NatureScot's Sitelink identifies that the Site is located within 5.52km south-west of Ness Woods Special Area of Conservation (SAC) which is designated in part for the population of otter as a qualifying feature. No other Statutory designated sites, with terrestrial mammals as qualifying features, are located within 10km of the Site.

Non-statutory Designated Sites for Nature Conservation

3.1.2 In consultation with the HBRG, there are no non-statutory designated sites within 2km of Study Area 1.

Existing Protected and Notable Terrestrial Mammal Species Records

HBRG

3.1.3 Records of three protected or notable terrestrial mammal species were returned from the HBRG.

3.1.4 These records are summarised in **Table 3.1**. Note, none of the records relate to sensitive locations (such as holt sites), but typically relate to actual animals seen.

3.1.5 Further details for these records (and other protected non-mammal species) are presented in **Annex 2**.

Table 3.1: Terrestrial Mammal Desk Study Records - HBRG.

Species	Number of Records (and dates)	Status
Red deer	18 (2013 & 2015)	Bern - A3
Sika deer	4 (2013)	Bern - A3
Mountain hare	1 (2015)	Bern - A3, HabDir, SBL, BAP-2007, RedListNT

HabDir: The Conservation (Natural Habitats, &c.) Regulations 2010, BAP – 2007: UK action plan priority species, RedListNTl: IUCN (2001) – Near Threatened, SBL: Scottish Biodiversity List (2022), Bern – A3: Bern Convention Appendix 3.

3.2 Field Surveys

Terrestrial Mammal Survey

3.2.1 This section provides an overview of protected and notable terrestrial mammal observations recorded during terrestrial mammal surveys and incidental sightings (during other baseline surveys) of mammals within the mammal Survey Area.

3.2.2 Evidence of otter, pine marten, red squirrel, fox and mountain hare was recorded as summarised in **Table 3.3**.

Table 3.3: Terrestrial Mammal Field Survey Records and Incidental Sightings.

Grid Reference	Species	Details
NH 26902 08015	Mountain Hare	1 animal observed. Droppings abundant across site
NH 28331 09512	Mountain Hare	4 animals observed. Droppings abundant across site
NH 31797 10311	Otter	Single spraint found near Allt Phocaichain watercourse
NH 27814 10229	Otter	Dried fragmented otter spraint on boulders at outlet
NH 31233 10248	Otter	Fresh otter spraint
NH 27022 10354	Otter	Otter spraint on boulder
NH 26619 10403	Fox (not protected)	Fox hole
NH 25841 10915	Pine marten	Probable Pine marten scat on track
NH 25706 10300	Pine marten	Probable Pine marten scat on track
NH 25390 11194	Otter	Dried fragmented otter spraint on boulder in ravine
NH 28877 10211	Pine marten	Probable Pine marten scat on track
NH 29083 10297	Pine marten	Probable Pine marten scat on track
NH 25450 10354	Pine marten	Probable Pine marten scat on track
NH 25993 11947	Red squirrel	1 animal observed.
Site wide	Red deer	Droppings

Otters

3.2.3 No otter sightings, holts or couches (places of rest) were recorded within the survey areas, though habitat on the Allt Phocaichain at the edge of the Site at NH 31799 10308 was noted to be suitable and fresh spraints were found nearby in both 2023 and 2024. Several spraints were recorded throughout the survey areas but were sparsely distributed. Most of the otter signs were old and not indicative of frequent use within the survey areas. The waterbodies and watercourses within the survey area provide some foraging opportunities for the species, but they have limited suitable habitat for holts or permanent places of residence. The site is likely used for medium to long distance foraging forays from more suitable locations for permanent residence beyond the survey area boundaries.

Pine marten

3.2.4 No pine marten sightings were recorded during the survey. Pine marten scats were widely but sparsely recorded within the survey area. They were often found along tracks either within plantation woodland or close to it. There are moderately large areas of woodland suitable for foraging and dens, particularly in the northern half of the survey area. Despite searches, none were located during the present surveys.

Red squirrel

3.2.5 Red squirrel were not recorded during the protected mammal surveys, however one incidental sighting was recorded with an individual recorded along the A887 road at NH 25993 11947 by the surveyor on the way to conduct habitat surveys. The coniferous plantation woodlands within the survey area are not diverse and do not offer optimal foraging or breeding conditions. Despite this, red squirrel are likely to occur infrequently within these areas, most likely for ad hoc foraging than permanent residency.

Water vole

3.2.6 No sighting or signs of water vole were recorded during the surveys. There is some suitable habitat within the survey area, but no signs were observed. Within the survey area there is some suitable habitat but it is largely sub-optimal due to the steep topography with shallow rocky ground surrounding most of the watercourses.

Badger

3.2.7 No badger signs or sightings were recorded during the surveys. Suitable areas of setts are limited to drier areas in grassland and woodlands. Otherwise, the survey area is largely unsuitable for the creation of setts due to the saturated peaty soils which are not favoured by badger. Where drier soils do occur, they are often very thin and found overlying bedrock which badgers are unable to dig. The survey area is suitable for foraging opportunities however as it offers a variety of food resources for the species.

Other species

3.2.8 Evidence of red deer were recorded during the survey within the mammal Survey Area, with droppings noted to be abundant across the Site, particularly on higher ground.

3.2.9 No further evidence of protected terrestrial mammals was recorded.

4 REFERENCES

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NatureScot (2024c) Standing Advice for Planning Consultations – Badgers. NatureScot, Inverness.

NatureScot (2024d) Standing Advice for Planning Consultations – Pine Martens. NatureScot, Inverness.

NatureScot (2024e) Standing Advice for Planning Consultations – Red Squirrel. NatureScot, Inverness.Strachan, R., Moorhouse, T. and Gelling, M. (2011) Water Vole Conservation Handbook. Third Edition. Wildlife Conservation Research Unit, Oxford.

ANNEX 1: SCIENTIFIC NAMES

Table A1.1 provides common and scientific names of mammal species included in this Technical Appendix.

Common Name	Scientific Name
Otter	*Lutra lutra*
Red deer	*Cervus elaphus*
Water vole	*Arvicola amphibius*
Mountain hare	*Lepus timidus*
Red squirrel	*Scirius vulgaris*
Pine marten	*Martes martes*
Badger	*Meles meles*
Wildcat	*Felis sylvestris*
Sika deer	*Cervus nippon*

ANNEX 2: DESK STUDY RECORDS (NON-SENSITIVE)

Common Name	Date	Grid Reference	Conservation Status
Claviceps purpurea	28/10/2011	NH281111	
Amber Jelly	28/10/2011	NH281111	
Birch Jelly	28/10/2011	NH281111	
Heather (Girdled) Colletes	22/08/2006	NH316059	
Peltigera membranacea	19/04/2008	NH2907	
Water Earwort	19/04/2008	NH2907	
Marsh Forklet-moss	19/04/2008	NH2907	
Red Fox	04/03/2013	NH318079	
Red Fox	04/03/2013	NH321066	
Red Fox	26/02/2013	NH286113	
Palmate Newt	17/05/2008	NH327118	Bern-A3, WACA-Sch5_sect9.5a
Small Pearl-bordered Fritillary	15/06/1999	NH306050	BAP-2007, England_NERC_S.41, RedList_GB_post2001-NT, Scottish_Biodiversity_List
Flat-topped Bog-moss	19/04/2008	NH2907	HabDir-A5
Red Deer	14/01/2013	NH285102	Bern-A3
Red Deer	26/07/2015	NH279081	Bern-A3
Sika Deer	02/03/2013	NH323066	Bern-A3
Sika Deer	29/01/2013	NH319075	Bern-A3