
Carn Fearna Wind Farm

Technical Appendix 8.2: Terrestrial Mammals



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1 INTRODUCTION

- 1.1.1 This Technical Appendix has been prepared to accompany **Chapter 8: Ecology**, in **Volume 2**, of the Environmental Impact Assessment (EIA) Report for Carn Fearna Wind Farm (the Proposed Development).
- 1.1.2 It presents detailed methodologies and results of desk studies and field surveys completed to establish baseline conditions with regards protected and notable terrestrial mammal species (excluding bats which are considered separately in **Technical Appendix 8.3**) and should be read with reference to the following figures (presented in **Volume 3a** of the EIA Report):
- **Figure 8.1:** Ecological Statutory Designated Sites for Nature Conservation.
 - **Figure 8.5:** Protected Terrestrial Mammal Survey Results.
 - **Confidential Figure 8.9:** Protected Terrestrial Mammal Survey Results (Sensitive).
 - **Confidential Figure 8.10:** Protected Terrestrial Mammal Desk Study Results (Sensitive).
- 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**. For a description of the habitats present at the site, see **Technical Appendix 8.1**.
- 1.1.5 Survey results considered sensitive are presented in **Confidential Figure 8.9**, as listed above. Such information will not be made publicly available but will be provided to THC and NatureScot.

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 ¹	November 2024	Proximity to statutory designated sites, with terrestrial mammal interests.	Within 10 km of the site.
NatureScot's Open Data Geoportal ²	January 2025	Proximity to Biosphere Reserves, with terrestrial mammal interests.	Within 5 km of the site.

¹ <https://sitelink.nature.scot/home> (accessed January 2025).

² <https://opendata.nature.scot/datasets/biosphere-reserves/explore?location=57.631597%2C-4.815034%2C9.38> (accessed January 2025).

Key Source	Date of Consultation	Information Sought	Search Area
NatureScot's Open Data Geoportal ³	January 2025	Proximity to Wildcat Priority Areas.	Within 5 km of the site.
Highland Biological Recording Group (HBRG)	April 2023	Existing terrestrial mammal records (2013 onwards). Non-statutory designated sites.	Within 2 km of the site.
Saving Scotland's Red Squirrels website ⁴	November 2023	Red squirrel records.	Within the site and adjacent habitats.

2.2 Field Surveys

2.2.1 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 targeted for the following species:

- Red squirrel;
- Water vole;
- Otter;
- Badger;
- Pine marten; and
- Wildcat.

Terrestrial Mammal Survey Area

2.2.2 The mammal survey areas, as shown in **Figure 8.5**, comprised all accessible areas within the site, extended to include areas of suitable habitats where accessible by public rights of way (PRoW), if required, out to the following distances in accordance with NatureScot species-specific guidance (NatureScot, 2024a-f):

- the site plus 50 m buffer for red squirrel;
- the site plus 50 m for water vole;
- the site plus 200 m for otter;
- the site plus 100 m for badger;
- the site plus 250 m for pine marten; and
- the site plus 250 m for wildcat.

³<https://opendata.nature.scot/datasets/wildcat-priority-areas/explore?location=57.609178%2C-4.583533%2C9.38> (accessed January 2025).

⁴ <https://scottishsquirrels.org.uk/squirrel-sightings/> (accessed November 2023).

- 2.2.3 Evidence of protected mammal species was also recorded within the site and Off-site turning circle during the course of extended Phase 1 habitat surveys (see **Technical Appendix 8.1**); the results of which are included within this Technical Appendix, where applicable.

Terrestrial Mammal Survey Methods

- 2.2.4 The surveys comprised an assessment of habitat suitability for terrestrial mammals and a systematic search of habitat features within the mammal survey areas. The location and distribution of field signs identifying the presence and/or potential presence of protected terrestrial mammal species were recorded, as summarised in **Table 2.2**. The survey methodology followed industry standard guidance: Chanin (2003), Cresswell *et al.* (2012), Dean *et al.* (2016), Harris *et al.* (1989), Littlewood *et al.* (2014) and NatureScot (2018, 2024a-f).

Table 2.2: Terrestrial mammal field survey methodology summary.

Species	Survey Methodology Summary
Red squirrel	Walkover search of suitable habitats for potential dreys and feeding remains.
Water vole	Walkover search of suitable habitats for potential burrows, runs, footprints, feeding stations and feeding remains, droppings and latrines.
Otter	Walkover search of suitable habitat for spraints, paw prints, paths, slides, food remains, holts and places used for breeding and/or shelter.
Badger	Walkover search of suitable habitat for signs of badgers, such as footprints, hair, snuffle holes, latrines and sett entrances.
Pine marten	Walkover search of suitable habitat for scats, paw prints, paths, food remains, and dens and places used for breeding and/or shelter.
Wildcat	Walkover search of suitable habitat for scats, paw prints, food remains, dens and places used for breeding and/or shelter.

- 2.2.5 The mammal survey areas were surveyed from 22nd June 2023 to 23rd June 2023 and between 25th September 2023 to 26th September 2023.
- 2.2.6 In addition, an extended Phase 1 habitat survey was carried out of the site on 3rd August 2023, where signs of terrestrial mammals were searched for. An extended Phase 1 habitat survey was conducted at the Off-site turning circle on the 23rd July 2024.
- 2.2.7 All surveys were undertaken in conditions conducive to the survey of terrestrial mammals, including normal flow conditions of on-site watercourses and not undertaken after periods of heavy rain.

Personnel

- 2.2.8 Field surveys were undertaken by J. Morton, A. Albin, M. Wood, C. Watson and/or L. Carroll. All surveyors are highly experienced field ecologists with considerable experience in the survey and identification of field signs of protected mammal species in Scotland.

Limitations

- 2.2.9 Areas outside the survey areas where no access was agreed were surveyed from PROWs (where present), or from on-site and searching out into adjacent areas. The survey areas were appropriately

covered during surveys, and a robust appraisal of the terrestrial mammals present (or potentially present as a result of suitable habitats/features) was made.

- 2.2.10 The HBRG data search did not include the Off-site turning circle as it was not included in the search area. The Off-site turning circle is approximately 4.7 km north of the site and therefore data returned by the HBRG fully excluded records within 2 km of the Off-site turning circle. Given the limited extent of the habitats present, the unremarkable habitats present in terms of ecological value (mainly grazed grassland), and because field surveys were undertaken of the Off-site turning circle, omission of the area from the desk study is not considered a substantive constraint.
- 2.2.11 The desk study records were gathered based on an original (reduced) site boundary. Given the final site boundary has only modestly altered from the original boundary, the desk study results are considered robust and have identified records of relevant mammal species that may be present at the locality to supplement the field surveys.

3 RESULTS

3.1 Desk Study

Statutory Designated Sites for Nature Conservation

- 3.1.1 A review of NatureScot's Sitelink identified that the site does not form part of any statutory designated site for nature conservation with qualifying features relating to terrestrial mammals.
- 3.1.2 However, Ben Wyvis National Nature Reserve (NNR), which is noted for supporting mountain hare, is located approximately 1.36 km north-east of the site.
- 3.1.3 The location of statutory designated sites is shown in **Figure 8.1**.

Non-statutory Designated Sites for Nature Conservation

- 3.1.4 Consultation with HBRG indicated that the site does not form part of any non-statutory designated site for nature conservation and no such sites are located within 2 km of the site.
- 3.1.5 A review of NatureScot's Open Data Geoportal identified that part of the site (and the Off-site turning circle area) is located within the Transitional Zone of the Wester Ross Biosphere Reserve, which is recognised as an internationally world class environment for people and nature. The Wester Ross Biosphere Reserve, which overlaps with the north-western area of the site, is known to support otter, pine marten and red squirrel⁵.
- 3.1.6 A review of Nature Scot's Open Data Geoportal and Littlewood *et al.* (2014) also identified that the majority of the site is also located within the Strathpeffer Scottish wildcat priority area.

Existing Protected and Notable Terrestrial Mammal Species Records

- 3.1.7 No protected and notable terrestrial mammal records were returned by HBRG within the site since 2013. Species returned within 2 km of the site included red squirrel (26 records), water vole (2 records), badger (27 records) and pine marten (8 records). The majority of records were returned south-west of the site either along the River Black Water or in neighbouring woodland. Further details of records from the wider 2 km desk study search area are provided in **Annex 2**. Historical records

⁵<https://www.wrb.scot/why-wester-ross> (accessed January 2025).

dating pre-2013 also included hedgehog (11 records between 1986-2000), otter (4 records between 1913-1970) and wildcat (6 records between 1913-1970) in the wider 2 km buffer.

3.1.8 Dek study results from the HBRG are provided in **Confidential Figure 8.10**.

3.1.9 Review of the Saving Scotland's Red Squirrels website identified no records of red squirrel within the site since 2013. However, records were frequently returned in woodland habitats neighbouring the site between 2013-2024. Woodlands with red squirrel records were identified directly west, south and south-east of the site.

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. Field survey results are shown in **Figure 8.5**.

Water vole

3.2.2 Evidence of water vole recorded within the water vole survey area (summarised in **Table 3.1**) consisted of five latrines found within the site. Two of these latrines were identified during the September mammal survey along the Allt Calltuinne that flows from Loch na Gearra. Three latrines were identified during the extended Phase 1 habitat survey. Of these, two were located along a watercourse that flows into Loch a Bhealaich, with the third located along a watercourse flowing into Loch na Guailne.

Table 3.1: Terrestrial mammal (non-sensitive) survey results – Water vole.

Grid Reference	Description
NH42541 61483	Latrine along a watercourse flowing into Loch na Guailne. Recorded during the extended Phase 1 habitat survey in August 2023.
NH42437 63154	Latrine along a watercourse flowing into Loch na Bhealaich. Recorded during the extended Phase 1 habitat survey in August 2023.
NH42481 62886	Latrine along a watercourse flowing into Loch na Bhealaich. Recorded during the extended Phase 1 habitat survey in August 2023.
NH 43008 62243	Latrine along the Allt Calltuinne. Recorded during the mammal survey in September 2023.
NH 43028 62196	Latrine along the Allt Calltuinne. Recorded during the mammal survey in September 2023.

Otter

3.2.3 Watercourses within the otter survey area were typically considered to provide highly suitable foraging and commuting opportunities for otter, with habitat suitable for holt creation also likely to be present within woodland habitats surrounding the site (at the western and southern site boundaries).

3.2.4 No otter holts or other signs of species' presence were recorded during the surveys. However, woodlands neighbouring the site are considered to offer some potential for resting places or holt sites. On-site lochs and watercourses (such as Allt an Torra-bheithe and Allt Fearna) were also considered to provide suitable otter commuting (potentially foraging) habitat.

- 3.2.5 The River Black Water which flows along the western and southern boundary of the Off-site turning circle has potential to be used by otter at least for commuting (and potentially foraging).

Badger

- 3.2.6 A single potential badger sett was located within the site (see **Confidential Figure 8.9**), as well as a fresh latrine.
- 3.2.7 Some areas of habitat in the badger mammal survey area, such as neighbouring woodlands, watercourse banksides and farmland, are considered suitable for badger, with foraging, commuting and sett creation opportunities available.

Pine marten

- 3.2.8 Pine marten scat was recorded within the pine marten mammal survey area (summarised in **Table 3.2**). In September 2023, evidence of pine marten consisted of two scats found within the site along a stone wall and the Allt Fearná watercourse.

Table 3.2: Terrestrial mammal (non-sensitive) survey results – Pine marten.

Grid Reference	Description
NH 41457 63860	Scat located on a stone wall within the north-western section of the site.
NH 41583 61575	Scat located along the Allt Fearná within the site.

- 3.2.9 Woodlands neighbouring the site are considered to be potentially suitable habitats for foraging, commuting, resting and breeding pine marten. The woodlands bordering the site boundary were inaccessible during the surveys but were assessed from within the site.

Other mammals

- 3.2.10 In addition, a mountain hare was recorded north of Carn Loch an Tuirc in June 2023, with multiple sightings recorded across the site in September 2023. Mountain hare droppings were recorded across the site during both surveys.
- 3.2.11 No evidence of any other protected and/or notable terrestrial mammal species was recorded during surveys.

4 REFERENCES

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ANNEX 1 - SCIENTIFIC NAMES

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

Common Name	Scientific Name
Badger	<i>Meles meles</i>
Hedgehog	<i>Erinaceus europaeus</i>
Mountain hare	<i>Lepus timidus</i>
Otter	<i>Lutra lutra</i>
Pine marten	<i>Martes martes</i>
Red squirrel	<i>Sciurus vulgaris</i>
Water vole	<i>Arvicola amphibius</i>
Scottish wildcat	<i>Felis silvestris</i>
Scottish wildcat (hybrid)	<i>Felis silvestris x catus</i>

ANNEX 2 - DATA SEARCH RECORDS - HBRG

Table A2.1: Summary of records provided by HBRG for protected and notable terrestrial mammals recorded within 2 km of the site.

Common Name	Number of Records	Record Date Range	Closest Record to Site	Status
Red squirrel	26	2013 - 2017	100 m south-west	WCA, SBL, UKBAP, LBAP
Water vole	2	2016 - 2017	1.55 km west	WCA, SBL, UKBAP, LBAP
Badger	27	2014 - 2016	670 m south-west	PBA, LBAP
Pine marten	8	2014 - 2016	270 m south-west	HabReg, WCA, SBL, UKBAP, LBAP

WCA: Wildlife and Countryside Act (1981); HabReg: The Conservation (Natural Habitats, &c.) Regulations 2010, SBL: Scottish Biodiversity List, UKBAP: UK Biodiversity Action Plan, LBAP: Highland Local Biodiversity Action Plan, PBA: Protection of Badgers Act (1992)⁶.

⁶ <https://www.legislation.gov.uk/ukpga/1992/51/contents> (accessed January 2025).