

CONTENTS

1	INTRODUCTION	1
2	METHODOLOGY	1
2.1	Desk Study	1
2.2	Field Surveys	2
3	RESULTS	3
3.1	Desk Study	3
3.2	Field Surveys	5
4	REFERENCES	5

ANNEXES

Annex 1: Scientific Names

Annex 2: Desk Study Records

1 INTRODUCTION

1.1.1 This Technical Appendix has been prepared to accompany **Chapter 7: Ecology** of The Repowered and Extended Ben Aketil Wind Farm ('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 7.3**) and should be read with reference to **Confidential Appendix 7.7** and the following figures presented in **Volume 2** of the EIA Report:

- **Figure 7.1:** Statutory Sites Designated for Ecological Interest; and
- **Figure 7.4:** 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**.

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	January 2023	Proximity to statutory designated sites, with terrestrial mammal interests.	Within 10 km of the 'Site' (as shown in Figure 7.1).
Highland Biological Recording Group (HBRG)	June 2022	Existing terrestrial mammal records (since, and including, 2012). Non-statutory designated sites.	Within 5 km of the Site.
Ben Aketil Wind Farm Environmental Statement (Planning Reference: 02/00275/FUL)	January 2023	Terrestrial mammal records from baseline surveys in 2002.	Operational Development which is in the north of the Site.
Gleann Eoghainn Wind Farm Baseline Ecology and Ornithology Report 2014-16 (Planning Reference: 16/01793/SCOP;	January 2023	Terrestrial mammal records from baseline surveys in 2014-16.	Northern and eastern part of the Site which was previously investigated for the

Key Source	Date of Consultation	Information Sought	Search Area
provided as Confidential Appendix 7.7)			Gleann Eoghainn Wind Farm.

2.2 Field Surveys

2.2.1 Field survey effort and methodologies were agreed with NatureScot prior to commencement, including the scoping out of water vole, badger and wildcat from surveys (see **Chapter 7, Table 7.1**).

2.2.2 As agreed with NatureScot (see **Chapter 7, Table 7.1**) 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; and
- Pine marten.

Terrestrial Mammal Survey Area

2.2.3 The mammal Survey Area, as shown in **Figure 7.4**, comprised much of the Site plus 250 m, in accordance with NatureScot guidance (2020a and b), but see *Limitations* section.

2.2.4 This meant that the watercourses draining the Site (Caroy River, Rageary Burn, Aketil Burn, Allt a Choire watercourses and their tributaries) were surveyed for signs of otter where they fall within the mammal Survey Area including where the mouth of the Caroy River enters the sea at Glen Heysdal.

Terrestrial Mammal Survey Methods

2.2.5 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 Survey Area as summarised in **Table 2.2**. The survey methodology followed industry standard guidance (Chanin, 2003 and Cresswell *et al.* 2012).

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.
Pine marten	Walkover search of suitable habitats within the mammal Survey Area for scats and potential den sites.

2.2.6 The survey was undertaken on 14th to 16th September 2021.

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

Personnel

- 2.2.8 The field survey was undertaken by Mr P. Higginson, who is a highly experienced field ecologist with considerable experience in the survey and identification of field signs of protected mammal species in Scotland.

Limitations

- 2.2.9 Design iterations meant that the original Site boundary used to determine the mammal Survey Area has differed from the final Site boundary. This has meant that there are minor gaps in survey coverage in the south on the land west of Cnoc a' Chrochaire and an area west of the Caroy River. Additionally some areas within the mammal Survey Area which may be suitable for holt establishment (including the gorges associated with Rageary Burn and Aketil Burn) were inaccessible to the surveyor on health and safety grounds (for further details see **Chapter 7**). These areas with limited survey coverage are however generally at least 400 m from the nearest proposed infrastructure.
- 2.2.10 The only exceptions are the infrastructure, including the borrow pit, in the vicinity of the Rageary Burn and the access route which passes through the area west of the Caroy River. As a precaution it has therefore been assumed in **Chapter 7** that otter may be present in the areas of the Rageary Burn that could not be accessed for survey, and assessment has been undertaken on this basis.
- 2.2.11 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. Given the remoteness of Skye and difficulty in obtaining accommodation, surveys occasionally had to go-ahead in sub-optimal conditions, although surveys were abandoned if it was considered that the weather would invalidate the survey results obtained. The day before the survey there was rain, and so water levels within the Site were slightly raised which may have resulted in fewer rocks in watercourses being visible, and in some otter spraints having been washed away.

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 does not form part of any statutory designated site for nature conservation with terrestrial mammal qualifying features.
- 3.1.2 Furthermore, there are no designated sites with qualifying terrestrial mammal interests within 10 km of the Site.

Non-statutory Designated Sites for Nature Conservation

- 3.1.3 In consultation with the HBRG, there are no non-statutory designated sites within the Search Area.

Existing Protected and Notable Terrestrial Mammal Species Records

HBRG

- 3.1.4 Records of eight protected or notable terrestrial mammal species were returned from the HBRG.
- 3.1.5 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.

- 3.1.6 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
Common shrew	1 (2013)	Bern - A3
Hedgehog	11 (2013-17)	Bern - A3, BAP - 2007, RedList-vul, SBL
Otter	8 (2012, 2014-15, 2017-18 & 2020)	Bern - A2, ECCITES, HabDir, WCA, BAP - 2007, SBL
Red deer	7 (2014, 2016 & 2018)	Bern - A3
Roe deer	1 (2015)	Bern - A3
Stoat	1 (2013)	Bern - A3
Water shrew	1 (2020)	Bern - A3
Weasel	3 (2013-14 & 2017)	Bern - A3

WCA: Wildlife and Countryside Act (1981) – full protection, HabDir: The Conservation (Natural Habitats, &c.) Regulations 2010, BAP – 2007: UK action plan priority species, RedList-vul: IUCN (2001) – vulnerable, SBL: Scottish Biodiversity List (2022), Bern – A3: Bern Convention Appendix 3, Bern – A2: Bern Convention Appendix 2, ECCITES: CITES Annex A.

Ben Aketil Wind Farm Environmental Statement (Planning Ref: 02/00275/FUL)

- 3.1.7 A review of the Environmental Statement documentation which supported the operational Ben Aketil Wind Farm within the Site reported a total of 30 otter spraint during targeted walkover surveys on 21st to 23rd July 2002. This consisted of 19 spraints along the Caroy River and 11 spraints along the Red Burn. One otter resting place was also recorded along the Red Burn.
- 3.1.8 No large otter spraint sites, runs or holts were recorded.
- 3.1.9 No evidence of any other protected terrestrial mammal was recorded.

Gleann Eoghainn Wind Farm (Planning Ref: 16/01793/SCOP)

- 3.1.10 A review of the ecology baseline report which supported the previously investigated Gleann Eoghainn Wind Farm application within the Site revealed a total of 16 otter records, observed during walkover surveys carried out in 2014-16 (see **Confidential Appendix 7.7**). A period of camera trapping was also undertaken between July 2014 and August 2015, but no protected mammal species were recorded during camera trap filming.
- 3.1.11 **Table 3.2** summarises the results of the walkover surveys.

Table 3.2: Otter Records – Gleann Eoghainn Baseline Surveys.

Date	Grid Reference	Details
25 th June 2015	NG 30714 48348	Fresh spraint on large rock in stream.
25 th June 2015	NG 30880 48705	Old spraint on boulder beside drain under track.
21 st July 2015	NG 30878 48704	Old spraint on rock beside drain under track.
21 st July 2016	NG 30185 44106	Old spraint on boulder on river edge.
21 st July 2016	NG 30226 44305	Old spraint on boulder in river.
21 st July 2016	NG 30230 44459	Old spraint on boulder in middle of river.
21 st July 2016	NG 30197 44518	Otter prints on muddy riverbank.
21 st July 2016	NG 30156 44578	Otter spraint on muddy riverbank, potential temporary resting place.

Date	Grid Reference	Details
21 st July 2016	NG 30273 43955	Fresh otter spraint.
21 st July 2016	NG 30197 44111	Fresh otter spraint.
21 st July 2016	NG 30206 44151	Fresh otter spraint.
21 st July 2016	NG 30222 44188	Two otter spraints on rock.
21 st July 2016	NG 30221 44279	Fresh otter spraint.
21 st July 2016	NG 30207 44387	Fresh otter spraint.
21 st July 2016	NG 30221 44401	Fresh otter spraint.
21 st July 2016	NG 30237 44426	Fresh otter spraint.

3.1.12 No large otter spraint sites, runs or holts were recorded.

3.1.13 No evidence of any other protected terrestrial mammal was recorded.

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 within the mammal Survey Area.

3.2.2 Evidence of otter was recorded as summarised in **Table 3.3**.

Table 3.3: Otter Field Survey Records.

Grid Reference	Details
NG 30268 43935	Spraint on rock under old road bridge.
NG 30172 45573	Old spraint on rock.
NG 30708 48356	Spraint on rock.
NG 30720 48066	Spraint on rock.
NG 30711 47114	Spraint on rock.

3.2.3 Evidence of red deer, roe deer and shrews were recorded during the survey within the mammal Survey Area.

3.2.4 No further evidence of protected terrestrial mammals was recorded.

4 REFERENCES

Chanin, P. (2003) Monitoring the otter *Lutra lutra*. Conserving Natura 2000 Rivers Monitoring Series No 10, English Nature, Peterborough.

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 Mitigations. The Mammal Society, Southampton.

NatureScot (2020a) Standing Advice for Planning Consultations – Otters. NatureScot, Inverness.

NatureScot (2020b) Standing Advice for Planning Consultations – Pine Martens. NatureScot, Inverness.

NatureScot (2022) *Sitelink*. Available at: <https://sitelink.nature.scot/home>

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>
Common shrew	<i>Sorex araneus</i>
Hedgehog	<i>Erinaceus europaeus</i>
Otter	<i>Lutra lutra</i>
Pine marten	<i>Martes martes</i>
Red deer	<i>Cervus elaphus</i>
Roe deer	<i>Capreolus capreolus</i>
Stoat	<i>Mustela erminea</i>
Water vole	<i>Arvicola amphibius</i>
Weasel	<i>Mustela nivalis</i>
Water shrew	<i>Neomys fodiens</i>
Water vole	<i>Arvicola amphibius</i>
Wildcat	<i>Felis silvestris</i>

Table A1.2 provides common and scientific names of non-mammal species listed in Annex 2.

Common Name	Scientific Name
Palmate newt	<i>Lissotriton helveticus</i>
Common Frog	<i>Rana temporaria</i>
Calvadosia campanulata	<i>Calvadosia campanulata</i>
Dead-man's fingers	<i>Alcyonium digitatum</i>
Edible Sea Urchin	<i>Echinus esculentus</i>
Small Heath	<i>Coenonympha pamphilus</i>
Grayling	<i>Hipparchia semele</i>
Moss Carder Bee	<i>Bombus muscorum</i>
Harbour Seal	<i>Phoca vitulina</i>
Large Black Slug	<i>Arion ater</i>
Dog Whelk	<i>Nucella lapillus</i>
Common Lizard	<i>Zootoca vivipara</i>

ANNEX 2: DESK STUDY RECORDS (NON-SENSITIVE)

Common Name	Date	Grid Reference	Status
Palmate Newt	11/08/2012	NG2947	Bern-A3, WCA (Sch5, Section 9.5a) - Animals which are protected from being sold, offered for sale or being held or transported for sale either live or dead, whole or part.
Common Frog	25/06/2014	NG2742	Bern-A3, HabDir-(Annex 5) - Animal and plant species of Community interest whose taking in the wild and exploitation may be subject to management measures., WCA (Sch5, Section 9.5a) - Animals which are protected from being sold, offered for sale or being held or transported for sale either live or dead, whole or part.
Common Frog	17/08/2016	NG3349	
Common Frog	20/07/2019	NG2840	
<i>Calvadosia campanulata</i>	18/09/2020	NG284412	BAP-2007, SBL
Dead-man's fingers	19/09/2020	NG298409	SBL
Dead-man's fingers	20/09/2020	NG276402	
Dead-man's fingers	02/03/2021	NG276402	
Edible Sea Urchin	07/06/2016	NG299390	RedList- lower risk, near threatened (IUCN 1994)
Edible Sea Urchin	19/09/2020	NG298409	
Edible Sea Urchin	02/03/2021	NG276402	
Edible Sea Urchin	28/04/2021	NG305412	
Small Heath	14/06/2013	NG3150	BAP-2007, RedList- lower risk, near threatened (IUCN 2001), SBL
Small Heath	14/06/2013	NG3151	
Small Heath	10/07/2013	NG3550	
Small Heath	28/06/2017	NG3052	
Small Heath	30/05/2018	NG3449	
Small Heath	30/05/2018	NG3450	
Grayling	19/08/2018	NG3039	BAP-2007, RedList- vulnerable (IUCN 2001), SBL
Moss Carder Bee	22/04/2017	NG307450	BAP-2007, SBL
Harbour Seal	25/06/2014	NG2842	Bern-A3, BAP-2007, Convention on Migratory Species (Appendix 2), HabDir-A2*, HabDir-A5, HabReg-Sch4, SBL
Large Black Slug	16/07/2013	NG278513	RedList- data deficient (IUCN 2001)
Large Black Slug	25/06/2014	NG2842	
Dog Whelk	20/04/2014	NG2570742571	OSPAR Convention – List of threatened or declining marine species or habitats
Dog Whelk	20/04/2015	NG273432	
Common Lizard	25/08/2016	NG29294916	BAP-2007, Bern-A3, SBL, WCA (Sch5, Section 9.1 (kill/injuring) - Animals which are protected from intentional killing or injuring. WCA (Sch5, Section 9.5a) - Animals which are protected from being sold, offered for sale or being held or transported for sale either live or dead, whole or part.
Common Lizard	19/04/2019	NG265496	
Common Lizard	25/04/2019	NG307426	
Common Shrew	02/11/2013	NG2751	Bern-A3
Otter	23/10/2012	NG333512	Bern - A2, ECCITES, HabReg, WCA, BAP - 2007, SBL
Otter	23/09/2014	NG345517	
Otter	22/06/2015	NG3040243478	
Otter	20/10/2015	NG304435	
Otter	10/01/2017	NG315407	

Common Name	Date	Grid Reference	Status
Otter	02/09/2017	NG3183551038	
Otter	08/11/2018	NG318405	
Otter	19/09/2020	NG298409	
Water Shrew	09/08/2020	NG28003967	Bern-A3
Red Deer	16/02/2014	NG2849	
Red Deer	06/05/2014	NG3648	
Red Deer	01/07/2014	NG2644	
Red Deer	13/07/2014	NG3151	
Red Deer	03/10/2014	NG2749	
Red Deer	03/11/2016	NG3350	
Red Deer	30/05/2018	NG3449	
Roe Deer	01/08/2015	NG2850	
Stoat	13/06/2013	NG3041	
Weasel	20/07/2013	NG2843	
Weasel	11/06/2014	NG2751	
Weasel	13/10/2017	NG2751	
Hedgehog	15/04/2013	NG3140	Bern - A3, BAP - 2007, RedList-vulnerable (IUCN 2001), SBL
Hedgehog	22/04/2013	NG3140	
Hedgehog	24/06/2013	NG2751	
Hedgehog	16/07/2013	NG2647	
Hedgehog	13/09/2013	NG3042	
Hedgehog	22/09/2013	NG3043	
Hedgehog	13/09/2014	NG2647	
Hedgehog	20/04/2015	NG3240	
Hedgehog	14/08/2015	NG3043	
Hedgehog	26/08/2016	NG3141	
Hedgehog	26/09/2017	NG2647	