



Foel Fach Wind Farm Limited.

Foel Fach Wind Farm – Environmental Statement Volume III

Appendix 5.2: Protected Species

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**Energy for
generations**



Foel Fach Wind Farm

on behalf of Foel Fach Wind Farm Limited

Environmental Statement

Appendix 5.2: Protected Species



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EXECUTIVE SUMMARY

Baseline information gathered from desk study sources and protected species surveys is provided in this Appendix. Evidence of otter was recorded in the wider area (but not the Application Site (herein “the Site”). The watercourses onsite are typically considered suboptimal for supporting otter and water vole, although some watercourses are potentially suitable for commuting otter. The Site was found to support common lizard, but no other reptiles were recorded.

1 INTRODUCTION

- 1.1.1 This Appendix has been prepared to accompany the **Environmental Statement (ES) Volume II, Chapter 5: Terrestrial Ecology**, for the Proposed Development.
- 1.1.2 It presents detailed methodologies and results of desk study and field surveys completed to establish baseline conditions with regards protected and notable species (bats which are considered separately in **ES Volume III, Appendix 5.3: Bats**) and should be read with reference to the following figures (presented in **ES Volume IV**):
 - **Figure 5.1:** Ecological Statutory Designated Sites
 - **Figure 5.2:** Ecological Non-Statutory Designated Sites (Confidential)
 - **Figure 5.3:** Existing Ecological Records (Sensitive) (Confidential)
 - **Figure 5.4:** Phase 1 Habitat Survey Plan
 - **Figure 5.6:** Terrestrial Mammal Survey Results
 - **Figure 5.7a:** Reptile Survey Plan, and
 - **Figure 5.7b:** Reptile Survey Results.
- 1.1.3 Information considered sensitive **ES Volume IV, Figure 5.2: Ecological Non-Statutory Designated Sites (Confidential)** and **ES Volume IV, Figure 5.3: Existing Ecological Records (Confidential)** will not be made publicly available but will be provided to Natural Resources Wales (NRW) and Gwynedd Council.
- 1.1.4 The objective of the baseline studies was to establish the presence and spatial distribution of protected and notable species of conservation concern which may be impacted by the Proposed Development. Dedicated surveys of protected and notable mammal species were conducted within the Site and appropriate buffers.
- 1.1.5 Only common species names are used throughout this Appendix. Scientific names for all species referenced are supplied in **Annex 1**.

2 METHODOLOGY

2.1 Desk Study and Consultation

- 2.1.1 A desk study was undertaken to identify existing information on the presence of sites of nature conservation importance designated for their faunal interests within a zone of influence of the Site. The desk study included a review of the key sources summarised in **Table 2.1**. Existing records of protected and notable faunal species are dated within the last 10 years since consultation (i.e. from 2013). Reviews of open data sources were restricted to records of

protected mammals only, to inform impact assessment, but information on all protected faunal species was obtained from the local record centre.

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
NRW's website https://naturalresources.wales/?lang=en DEFRA's 'MAGIC' website https://magic.defra.gov.uk/magicmap.aspx	February 2025	Proximity to statutory designated sites.	Within 10 kilometres (km) of the Site (ES Volume IV, Figure 5.1: Ecological Statutory Designated Sites).
Cofnod (the local environmental records centre for North Wales)	November 2023	Existing ecological (protected species) records. Proximity to non-statutory designated sites.	Within 2 km of the Site ¹ . The results of which are shown in ES Volume IV, Figures 5.2 and 5.3 .

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:

- Badger
- Water vole
- Otter, and
- Reptiles.

Protected Terrestrial Mammal Study Area

2.2.2 The protected mammal survey was conducted on 23 and 24 May 2023 and followed up on the 28 September 2023.

¹ Note, the Desk Study Search Area was based on an original application boundary which extended further than the final application boundary, so the search area used during the desk study was greater than 2 km from the Site.

2.2.3 The mammal study areas, as shown in **ES Volume IV, Figure 5.6: Terrestrial Mammal Survey Results** comprised areas within the footprint of the Proposed Development 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-c):

- Survey buffer of 50 metres (m) for water vole
- Survey buffer of 200 m for otter, and
- Survey buffer of 100 m for badger.

2.2.4 In the absence of Welsh-specific guidance, survey methodologies have made reference to key pieces of NatureScot industry guidance, which are used to inform surveys for wind farm applications in Wales.

2.2.5 Evidence of protected mammal species was also recorded within the application boundary during the course of extended Phase 1 Habitat surveys (**ES Volume III, Appendix 5.1: Habitats and Vegetation**); the results of which are included within this Appendix, where applicable.

Terrestrial Mammal Survey Methods

2.2.6 The surveys comprised an assessment of habitat suitability for terrestrial mammals, and a systematic search of habitat features within the mammal study 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**.

2.2.7 During the surveys a search was undertaken to record the location and distribution of field signs identifying the presence and/ or potential presence of protected terrestrial mammal species. The survey methodology followed industry standard guidance: Chanin (2003), Cresswell *et al.* (2012), Dean *et al.* (2016), Harris *et al.* (1989), NatureScot (2018) and NatureScot (2024a-c).

Table 2.2: Terrestrial mammal field survey methodology summary.

Species	Survey Methodology Summary
Badger	Walkover search of suitable habitat for signs of badgers, such as footprints, hair, snuffle holes, latrines and sett entrances.
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.

2.2.8 In addition, an extended Phase 1 Habitat Survey was carried out within the Site (**ES Volume IV, Figure 5.4: Phase 1 Habitat Survey Plan**) between 15 and 19 August 2022, with a Phase 1 Habitat Survey of the access track conducted between 15 and 17 October 2024, and a habitat validation survey on 11 and 12 September 2025. These surveys included the search for signs of terrestrial mammals.

2.2.9 All surveys were undertaken in conditions conducive to the survey of terrestrial mammals, including normal flow conditions of onsite watercourses and not undertaken after periods of heavy rain.

2.2.10 Any requirement for further targeted species-specific surveys were determined during the forementioned surveys.

Reptile Survey

2.2.11 A habitat appraisal of the Site was undertaken during the extended Phase 1 habitat surveys, where habitats were assessed for suitability for supporting reptiles. Although the grazed semi-improved acid grassland over much of the Site was considered largely sub-optimal for reptiles, those areas of bog, heathland and marshy grassland were considered potentially suitable.

2.2.12 Reptile 'presence/absence' surveys were undertaken in accordance with the methodology detailed in 'Froglife' Advice Sheet 10 'Reptile Survey' (Froglife, 2016). The objective of the survey was to identify the range of reptile species present and their relative abundance.

2.2.13 The method involved searching for reptiles by laying 96 'refugia' (combination of roofing felt and corrugated sheets/tins) at targeted locations across (or adjacent to) the Site (**ES Volume IV, Figure 5.7a: Reptile Survey Plan**). The survey effort targeted five distinct areas (A, B, C, D and E), located respectively at SH 92934 40940, SH 93557 41715, SH 93870 41842, SH 94403 42064 and SH 94952 41888. Note, due to evolution of the boundary of the Site, Area E now lies just outside the Site but provides useful information for context. The locations were selected on the basis of the presence of suitable habitat features, as recommended in the Froglife guidance (2016). The refugia were deployed on 31 August 2023, with at least a four-week period before the reptile survey checks commenced on 29 September 2023, to ensure there was a "bedding in period" to allow time for reptiles to find, habituate and use them. The refugia were subject to seven checks in autumn (September/October 2023), in weather conditions conducive to optimal survey. See **Table 2.3** for survey details.

Table 2.3: Reptile survey details.

Visit Number	Date	Time (24h)	Temperature (°C)	Cloud Cover (%)	Precipitation
1	29 Sep-23	11:00 – 16:00	14	75	None
2	7 Oct-23	08:15 – 13:00	15 – 17	87.5	None
3	8 Oct-23	08:30 – 12:30	14 – 17	37.5	None
4	10 Oct-23	09:20 – 13:00	15 – 17	37.5	None
5	12 Oct-23	10:00 – 13:10	9 – 11	25 - 50	None
6	16 Oct-23	10:15 – 13:30	8 – 9	75	None
7	17 Oct-23	10:15 – 13:45	9 – 11	75	None

Personnel

2.2.14 Terrestrial mammal surveys were undertaken by K. Love *MSc* and A. Tomlinson *MSc* in May 2023, as well as C. Bonnington *DPhil MCIEEM* and A. Hulme *BSc* in September 2023. The extended Phase 1 habitat survey was undertaken by S. Turner *MSc MCIEEM* and C Davies in August 2022, and A. Hulme *BSc (Hons)* between 15 and 17 October 2024. All surveyors are highly experienced field ecologists with considerable experience in the survey and identification of field signs of protected terrestrial mammal species in the UK.

2.2.15 Reptile surveys and refugia deployment were undertaken by C. Bonnington *DPhil MCIEEM* who is a highly experienced field ecologist with considerable knowledge of reptile survey and identification.

Limitations

2.2.16 During the protected mammal survey which was conducted on the 23 and 24 May 2023, three fields along the access track were not accessible due to the presence of bulls. Open terrestrial habitats within these fields were assessed from distance, however a short section a stream could not be surveyed closely. The majority of this watercourse was however surveyed downstream of these three fields and included in the survey effort.

2.2.17 Mammal surveys were conducted within species-specific buffers from the WFA, with extended Phase 1 habitats surveys conducted within the Preliminary application boundary and access track. As such, not all areas of the Site were surveyed. As habitats for notable mammals and reptiles were included in the survey effort within suitable buffers from the Proposed Development's WFA, it is considered that the results obtained are robust in relation to the objectives of the survey.

3 RESULTS

3.1 Desk Study

Statutory Designated Sites for Nature Conservation

3.1.1 A review of NRW and 'MAGIC' websites, together with data provided from Cofnod, identifies that the Site does not form part of a statutory designated site for nature conservation with ecological qualifying features for protected species.

3.1.2 The River Dee and Bala Lake / Afon Dyfrdwy a Llyn Tegid (Wales) Special Area of Conservation (SAC) and Afon Dyfrdwy (River Dee) Site of Special Scientific Interest (SSSI) are however both located directly adjacent to the western application boundary. These spatially overlapping sites are both designated for supporting otter populations.

3.1.3 Migneint-Arenig-Dduallt SSSI was also identified as a site with water vole and otter records. Migneint-Arenig-Dduallt SSSI is located approximately 805 m west of the Site and spatially overlaps the same geographical area as the Migneint-Arenig-Dduallt SAC.

3.1.4 In the wider area, Coedydd Dyffryn Alwen SSSI, which is located c.7.5 km north-east of the Site, was also identified as a site that supports otter populations.

3.1.5 No designated sites were identified within the search area with qualifying reptile species.

Non-statutory Designated Sites for Nature Conservation

3.1.6 The records provided by Cofnod indicated there are 79 non-designated sites for nature conservation within 2 km of the Site, classified as Candidate Wildlife Sites, and represent small parcels of land (usually 1 – 20 hectares (ha)) with potentially favourable habitat. Three of these records correspond to areas located within the application boundary. None of these sites were designated with regard to protected mammal or reptile species.

3.1.7 The Site also lies within non-statutory B-Lines and Snowdonia Important Invertebrate Area (IIA), which are both notable for invertebrate assemblages.

Existing Protected and Notable Species Records

3.1.8 A summary of the protected and notable species records from Cofnod is provided in **Table 3.1**. Records are presented in **ES Volume IV, Figure 5.3**.

Table 3.1: Desk study records returned by Cofnod.

Taxon Group	Species	No. of Records (and dates)	Status	Notes
Mammal	Otter	25 (2014 - 2020)	WCA, HabReg, S7	Sensitive (ES Volume IV, Figure 5.3).
Mammal	Badger	19 (2014 - 2021)	PBA	Sensitive (ES Volume IV, Figure 5.3).
Mammal	Brown hare	8 (2013 - 2021)	S7	Nearest record within the Site.
Mammal	Hedgehog	13 (2013 – 2021)	S7	Nearest record 137 m east of the Site.
Mammal	Polecat	7 (2014 – 2020)	S7	Nearest record 118 m south of the Site.
Mammal	Water vole	1 (2017)	WCA, S7	Nearest record 928 m south-west of the Site (River Tryweryn).
Amphibian	Common toad	1 (2020)	S7	Nearest record 1.9 km to west of the Site.
Reptile	Common lizard	2 (2019 - 2020)	WCA [†] , S7	Nearest within the Site in heather.
Reptile	Slow worm	1 (2018)	WCA [†] , S7	Nearest 1.2 km south from the Site
Mollusc	Freshwater pearl mussel	1 (2013)	WCA, S7	Nearest record 879 m south-west of the Site (River Tryweryn).
Insect - butterfly	Small pearl-bordered fritillary	1 (2014)	S7	Nearest record 864 m north-east of the Site.
Insect - butterfly	Small heath	1 (2020)	S7	Nearest record 207 m of the Site.

Taxon Group	Species	No. of Records (and dates)	Status	Notes
Insect - butterfly	Wall	1 (2017)	S7	Nearest record 174 m west of the Site.
Insect - moth	White ermine	2 (2014, 2017)	S7	Nearest record directly adjacent to the Site's south-eastern boundary.
Insect - moth	Buff ermine	1 (2017)	S7	Nearest record 1.8 km south of the Site.
Insect - moth	Cinnabar	2 (2019)	S7	Nearest record 922 m south-west of the Site.
Insect - moth	Lackey	1 (2017)	S7	Nearest record 1.8 km south of the Site.
Insect - moth	Small Phoenix	1 (2014)	S7	Nearest record 632 m east of the Site.
Insect - moth	Welsh Clearwing	2 (2016)	S7	Adjacent to the eastern application boundary.

WCA: *Wildlife and Countryside Act (1981) – full protection*, WCA[†]: *Wildlife and Countryside Act (1981) – protected against intention killing or injuring*; WCA[‡]: *Wildlife and Countryside Act (1981) – protected from intentional damage or destruction to a structure or place used for shelter or protection*; HabReg: *The Conservation (Natural Habitats, &c.) Regulations 2010*, S7: *Environment (Wales) Act 2016*, PBA: *Protection of Badgers Act (1992)*; SoCC: *Species of Conservation Concern = Global Red List, British Red Data Book, Nationally Rare & Scarce (but not S7 species)*.

3.2 Field Surveys

Protected Terrestrial Mammal Survey

- 3.2.1 During the first terrestrial mammal survey, two old otter spraints were recorded along the Afon Mynach located to the west of the Site. The river comprised of suitable otter foraging habitat, with shallow flowing water and deep pools present. The water quality of the river was considered to be high and to have potential for supporting otter prey (although the water levels were very low at the time of survey). The banksides included sections of riparian trees and woodland, with surrounding habitats dominated by pasture grassland.
- 3.2.2 No signs of protected terrestrial mammal species were identified in the second survey.
- 3.2.3 Watercourses within the Site were mostly considered to be sub-optimal for water vole and otter, given they were either rocky, fast-flowing, or very low in depth and likely subject to seasonal drying. The banksides were considered to be unsuitable for the establishment of water vole burrows or otter holts. However, several watercourses within the Site were considered to have potential for supporting commuting otters, particularly those with riparian trees and scrub that have potential to be functionally linked to suitable woodlands and watercourses in the wider area.
- 3.2.4 The habitats within the study area offered some foraging potential for badger, but the establishment of badger setts is considered unlikely within the majority of the Site itself, given the habitats present (mainly open upland moorland and lower pastoral grasslands, with few hedgerows and wooded areas).

Reptile Survey

3.2.5 The results of the reptile survey carried out are presented in **Table 3.2** and are illustrated in **ES Volume IV, Figure 5.7a** and **ES Volume IV, Figure 5.7b: Reptile Survey Results**. Over the course of surveys, 22 common lizards were recorded across four of these visits. These records were concentrated around Areas A and E.

Table 3.2: Reptile survey results.

Visit Number	Species	Refugia Number	Comment
1	Common lizard	1, 4, 17, 20, 57, 61 and 64	10 x juvenile
2	Common lizard	1 and 20	1 x adult (unknown sex); 1 x juvenile
3	Common lizard	3, 5, 19 and 57	1 x adult (female); 4 x juvenile
4	Common lizard	4, 13 and 79	1 x adult (female); 2 x juvenile
5	Common lizard	2 and 57	1 x adult (male); 1 x juvenile
6	-	-	-
7	-	-	-

'- means no reptiles recorded during that survey visit.

4 REFERENCES

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NatureScot (2024a) Standing Advice for Planning Consultations – Protected Species: Badger. NatureScot, Inverness.

NatureScot (2024b) Standing Advice for Planning Consultations – Protected Species: Otter. NatureScot, Inverness.

NatureScot (2024c) Standing Advice for Planning Consultations – Protected Species: Water Vole. NatureScot, Inverness.

ANNEX 1: SCIENTIFIC NAMES

Table A1.1 Common and scientific names of species included in this Appendix.

Common Name	Scientific Name
Otter	<i>Lutra lutra</i>
Badger	<i>Meles meles</i>
Brown hare	<i>Lepus europaeus</i>
Hedgehog	<i>Erinaceus europaeus</i>
Polecat	<i>Mustela putorius</i>
Water vole	<i>Arvicola amphibius</i>
Common toad	<i>Bufo bufo</i>
Common lizard	<i>Zootoca vivipara</i>
Slow worm	<i>Anguis fragilis</i>
Freshwater pearl mussel	<i>Margaritifera margaritifera</i>
Small pearl-bordered fritillary	<i>Boloria selene</i>
Small heath	<i>Coenonympha pamphilus</i>
Wall	<i>Lasiommata megera</i>
White ermine	<i>Spilosoma lubricipeda</i>
Buff ermine	<i>Spilarctia luteum</i>
Cinnabar	<i>Tyria jacobaeae</i>
Lackey	<i>Malacosoma neustria</i>
Small Phoenix	<i>Ecliptopera silaceata</i>
Welsh Clearwing	<i>Synanthedon scoliaeformis</i>