

Technical Appendix

Lairdmannoch Energy Park

Technical Appendix 6-4: Protected Species Survey

Lairdmannoch Energy Park Limited

wind2

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Glossary of Terms

Term	Definition
The Applicant	Lairdmannoch Energy Park Limited
The Proposed Development	Lairdmannoch Energy Park
The Proposed Development Site	The full application boundary as per Figure 1.1
Designated Site	Nature sites and areas of countryside can be 'designated', which means they have special status as protected areas because of their natural and cultural importance
Natura 2000	An ecological network of protected areas designed to protect threatened species and habitats in territories of the European Union under EU legislation including both the Habitats Directive and the Birds Directive

List of Abbreviations

Acronym	Full Term
EclA	Ecological Impact Assessment
EIA	Environmental Impact Assessment
EIAR	Environmental Impact Assessment Report
EPS	European Protected Species
km	Kilometre
m	Metre
NS	NatureScot (formerly Scottish Natural Heritage (SNH))
SWSEIC	South West Scotland Environmental Information Centre
TA	Technical Appendix
UK BAP	UK Biodiversity Action Plan
WCA	Wildlife and Countryside Act

1 Introduction

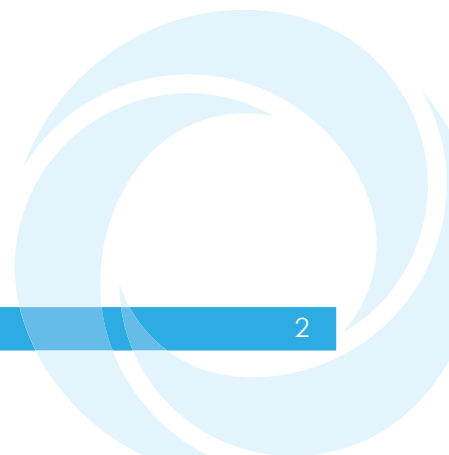
In April 2023 Atmos Consulting Ltd were commissioned by Lairdmannoch Energy Park Limited ('the Applicant') to carry out Protected Species surveys on land at Lairdmannoch.

The proposed Lairdmannoch Energy Park (the 'Proposed Development') would be located 7 km north-east of Gatehouse of Fleet and 10 km west of Castle Douglas in Dumfries and Galloway, centred on Grid Reference NX 65917 61697.

The surveys were undertaken to establish the non-avian ecological baseline condition as summarised in this Technical Appendix (TA). This TA should be read in conjunction with the following Technical Appendices:

- Technical Appendix 6-1: Extended Phase One Survey;
- Technical Appendix 6-2: National Vegetation Classification Survey;
- Technical Appendix 6-3: Bat Surveys; and
- Technical Appendix 6-5: Confidential Badger Annex.

This Technical Appendix (TA) has been prepared in support of **Chapter 6: Ecology** in **Volume 2** of this EIA Report and as such, does not comprise an assessment of impacts, but provides baseline information only.



2 Methods

2.1 Desk Study

The Proposed Development is located within an area covered by The South West Scotland Environmental Information Centre (SWSEIC), a local environmental records centre (LERC), which was contacted for the following information for the last ten years from the approximate centre of the Proposed Development;

- Protected species records/records of high conservation significance (Scottish Biodiversity List, Schedule species from the Wildlife and Countryside Act 1981, local Biodiversity Action Plan species for up to 3 km from the footprint of the Proposed Development); and
- Records of bats up to 10 km.

2.2 Protected Species Surveys

All field signs were marked on a map and notes were taken regarding findings. The protected species survey was completed over two days in June 2023 (27th and 28th).

Target species were otter *Lutra lutra*, water vole *Arvicola amphibius*, red squirrel *Sciurus vulgaris* and badger *Meles meles*. Bat roost potential within trees and/or buildings was also noted.

The Study Area for the Protected Species Survey was defined as the Proposed Development Site Boundary, to account for changes in infrastructure, plus the following buffers as per guidance detailed sections 2.2.1 – 2.2.5 below, or commonly used distances, as follows:

- Otter – 200 m;
- Water vole – 30 m;
- Red squirrel – 50 m;
- Badger – 30 m; and
- Bat roost potential (within trees/buildings) – 30 m.

2.2.1 Bat

All bat species found in Scotland are classed as European Protected Species (EPS). They receive full protection under the Conservation of Habitats and Species Regulations, 2010.

In accordance with NatureScot (NS) 2019 guidance static recording devices were deployed at nine locations over three visits between April and September 2023. The nine locations corresponded to the turbines as the design existed at that point. See **Technical Appendix 6-3: Bat Surveys** in **Volume 3** of this EIA Report for further information.

2.2.2 Otter

Otter is a European protected species under the Conservation of Habitats and Species Regulations, 2010.

Waterways within the Proposed Development were surveyed, where access was available. Additionally, a waterway to the southeast, within 200 m of the Proposed Development was surveyed from the public road bridge as it was identified as a good territorial marking location.

Survey methods followed standard methodologies (Purseglove, 1995; Chanin, 2003; Bang and Dahlstrøm, 2006; Muir and Morris, 2013). Any field signs observed were to be recorded and mapped and standard key parameters, including weather conditions, water levels and habitat suitability noted.

2.2.3 Water Vole

In Scotland water vole places of shelter or protection are protected under the Wildlife & Countryside Act 1981 (as amended).

Presence/absence level surveys were followed as in the 3rd Edition of the Water Vole Conservation Handbook (Strachan, 2011). The survey season for water voles is generally between April and September. The water vole survey was carried out in conjunction with the other surveys.

The survey comprised a thorough search of a strip approximately 10 m metres wide on each bank of ditches observed within the Proposed Development.

2.2.4 Red Squirrel

Red squirrels and their dreys (resting places) receive full protection under Schedules 5 and 6 of the Wildlife and Countryside Act 1981 (as amended). Visual surveys for dreys and dens were carried out, where accessible, within the Proposed Development Site and 50 m buffer which included commercial forestry and broad-leaved woodland.

2.2.5 Badger

Badgers and their setts are fully protected under the Protection of Badgers Act, 1992. The badger survey was conducted on the same day as the other protected mammal and habitat surveys and entailed searching for signs indicating presence/absence of badgers (e.g., setts and latrines) as per Harris et. al. 1989.

Badger survey results are not detailed in this report but are provided within **Confidential Appendix 6-5** in **Volume 5** of this EIA Report.

2.2.6 Limitations

For these surveys, areas outside of the Proposed Development Site could not be surveyed unless from a public road. Therefore, guidance could not be strictly followed due to this restraint. It was also not possible to access much of the commercial forestry which borders the Proposed Development to the west and north. The dense rows of trees did not afford consistently safe access. Areas outside of the boundary were only available for access via public roads and it was therefore not possible to follow the recommended guidance when surveying these areas in relation to appropriate survey

buffers. There are not considered to be any other limitations as the survey was carried out in good weather and access was fully available within the red line boundary as it was during the date of survey.

3 Results

3.1 Desk Study

3.1.1 Species records

Table 6-4-1 comprises European protected species and species of conservation interest within 3 km of the centre of the Proposed Development and up to 10 km for bat species from the last ten years. Species of conservation interest is defined as those on the Scottish Biodiversity List. Distances are approximate, and each species may be associated with multiple records within the data as provided by the Local Record Centre.

Table 6-4-1: SWSEIC Records from the last Ten Years within 3 km of the Proposed Development and up to 10 km for Bat Species

Species	Summary of Records
Adder <i>Vipera berus</i>	2 records 2016 & 2020, closest 3 km west
Common frog <i>Rana temporaria</i>	7 records 2013-2023, closest 2 km northeast
Common lizard <i>Zootoca vivipara</i>	11 records 2013-2023, closest 1.5 km southwest
Common toad <i>Bufo bufo</i>	7 records 2013-2019, closest 1 km east
Great crested newt <i>Triturus cristatus</i>	3 records from 2022, closest 3 km northeast
Badger <i>Meles meles</i>	9 records 2013-2023, closest 1 km northwest
Otter <i>Lutra lutra</i>	3 records from 2023, locations unknown
Red squirrel <i>Sciurus vulgaris</i>	68 records 2013-2021, mostly from Laurieston Forest
Common pipistrelle <i>Pipistrellus pipistrellus</i>	51 records 2013-2019, closest 2.5 km northeast
Soprano pipistrelle <i>Pipistrellus pygmaeus</i>	55 records 2013-2016, closest 0.5 km south
Nathusius' pipistrelle <i>Pipistrellus nathusii</i>	3 records from 2016, closes 6 km south
Pipistrelle bat species <i>Pipistrellus sp.</i>	51 records 2013-2017, closest 3 km north
Daubenton's bat <i>Myotis daubetonii</i>	26 records from 2016, closest 2.5 km southeast
Natterer's bat <i>Myotis nattererii</i>	32 records from 2016, closest 2 km northeast
Whiskered bat <i>Myotis mystacinus</i>	1 record from 2018, 7 km southwest
Whiskered/Brandt's bat <i>Myotis mystacinus/brandtii</i>	19 records from 2016, closest 3.5 km northeast
Myotis bat species <i>Myotis sp.</i>	28 records from 2016, closest 2 km northeast
Nyctalus bat species <i>Nyctalus sp.</i>	6 records from 2016, closest 6 km southwest
Leisler's noctule <i>Nyctalus leisleri</i>	42 records 2014-2022, closest 2.5 km northeast
Noctule <i>Nyctalus noctula</i>	21 records from 2016, closest 5.5 km southwest
Brown long-eared bat <i>Plecotus auritus</i>	19 records 2013-2016, closest 3 km northeast
Unidentified bat <i>Chiroptera</i>	2 records 2014 & 2018, closest 5 km east

Data came from seven sources: Amphibian and Reptile Conservation, Biological Records Centre, British Trust for Ornithology, National Trust for Scotland Species Records, NatureScot, SWSEIC and The Scottish Squirrel Database.

3.2 Protected Species

3.2.1 Amphibians and reptiles

A search of SWSEIC records showed only two records of adder within proximity of the Proposed Development although not within it. Common toad and common frog both had a similarly relatively low number of records (seven each) within proximity (but outside) the Proposed Development. Additionally, there were three records of great crested newt, and eleven records of common lizard, all within proximity but outside the Proposed Development.

Inspection of aerial mapping of the area 250 m – 500 m from proposed infrastructure identified four bodies of water which were potentially suitable for great crested newt. It was confirmed via habitat suitability survey that three of the bodies of water scored below average in habitat suitability criteria for this species. One pond, located at NGR NX 67607 60324 was considered to have good suitability for supporting a population of great crested newt.

No reptiles or amphibians were recorded during the protected species survey, although two potential reptile/amphibian hibernacula were noted, at NX 67592 61318 and at NX 67716 61087. Given the habitats on the Proposed Development, it is likely that reptiles and amphibians are present.

3.2.2 Bats

The desk study found that ten species of bat have been recorded within proximity to the Proposed Development. These were soprano pipistrelle (55 records), common pipistrelle (51 records), Leisler's noctule (42 records), Natterer's bat (32 records), Daubenton's bat (26 records), noctule (21 records), whiskered/Brandt's bat (19 records), brown long-eared bat (19 records), Nathusius' pipistrelle (three records) and whiskered bat (one record). There were a further 51 records of pipistrellus bats, 28 records of myotis bats and six records of nyctalus bats, not identified to species level, with an additional two records of unidentified bats not ascribed to any genus.

Four potential bat roost sites were found, with three lying within the Proposed Development Site Boundary. Three were assessed as having moderate bat roost potential and were located at NX 67641 61256 (several old oak trees), at NX 67708 61118 (old ash tree) and at NX 67726 61061 (old ash tree).

An old dead oak tree was assessed as having high bat roost potential located at NX 67369 60315 just outside the line of the Proposed Development Site. These potential roosts are indicated in **Figure 6-4-1**. Furthermore, the Proposed Development Site is bordered on its northern and western edges by mature plantation which has potential to contain further bat roosts not identified during the survey.

The combination of watercourses and ditches crossing the Proposed Development allow for bat foraging opportunities, as does the large waterbody of Loch Mannoch, and the Proposed Development is connected to the wider landscape by both watercourses and mature hedges. The wider landscape surrounding the Proposed Development contains large areas of mature plantation (to the north and west) and to the southeast, mature broadleaf woodland, with further potential for bat roosts. Please refer to **Technical Appendix 6-3: Bat Surveys** in **Volume 3** of this EIA Report for information on the results of the bat survey.

3.2.3 Otter and water vole

There were three records of otter within proximity to the Proposed Development noted in the SWSEIC records, and although their precise locations were unavailable it was noted that none of these records were within the Proposed Development Site. There were no records of water vole in the SWSEIC records.

Two signs of otter presence within the Proposed Development Site were recorded during the protected species survey, an otter spraint beside the Tarff Water at NX 67690 60689 and an otter print also beside the Tarff Water at NX 67704 60880. These are indicated in **Figure 6-4-1**. There were no signs of water vole recorded during the protected species survey.

3.2.4 Red squirrel

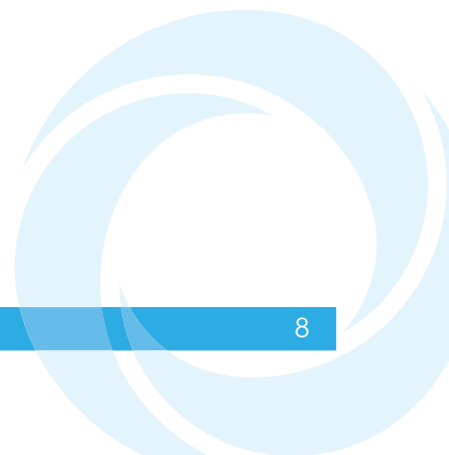
The results of the desk study showed that the wider area had a significant number of records of red squirrel, 68 within the last ten years. Most of these records were from Laurieston Forest to the north of the Proposed Development, and there were no records in the SWSEIC data from within the Proposed Development Site.

Two squirrel dreys were noted during the protected species survey, at NX 66960 61598 and at NX 67028 61596, both in a small area of plantation forestry in the centre of the Proposed Development. This plantation does not comprise part of the Proposed Development but is enclosed by it and the dreys lie within a 30 m buffer of the Proposed Development Site. The locations of these dreys are indicated in **Figure 6-4-1**.

3.2.5 Badger

Information on badger is regarded as confidential and therefore included in **Confidential Appendix 6-5** in **Volume 5** of this EIA Report.

There were nine records of badger noted in the desk study within the proximity of the Proposed Development.



4 References

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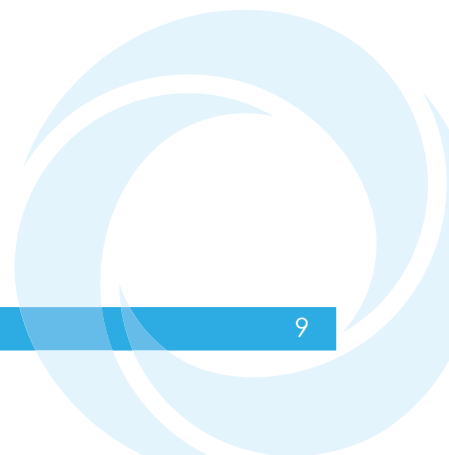
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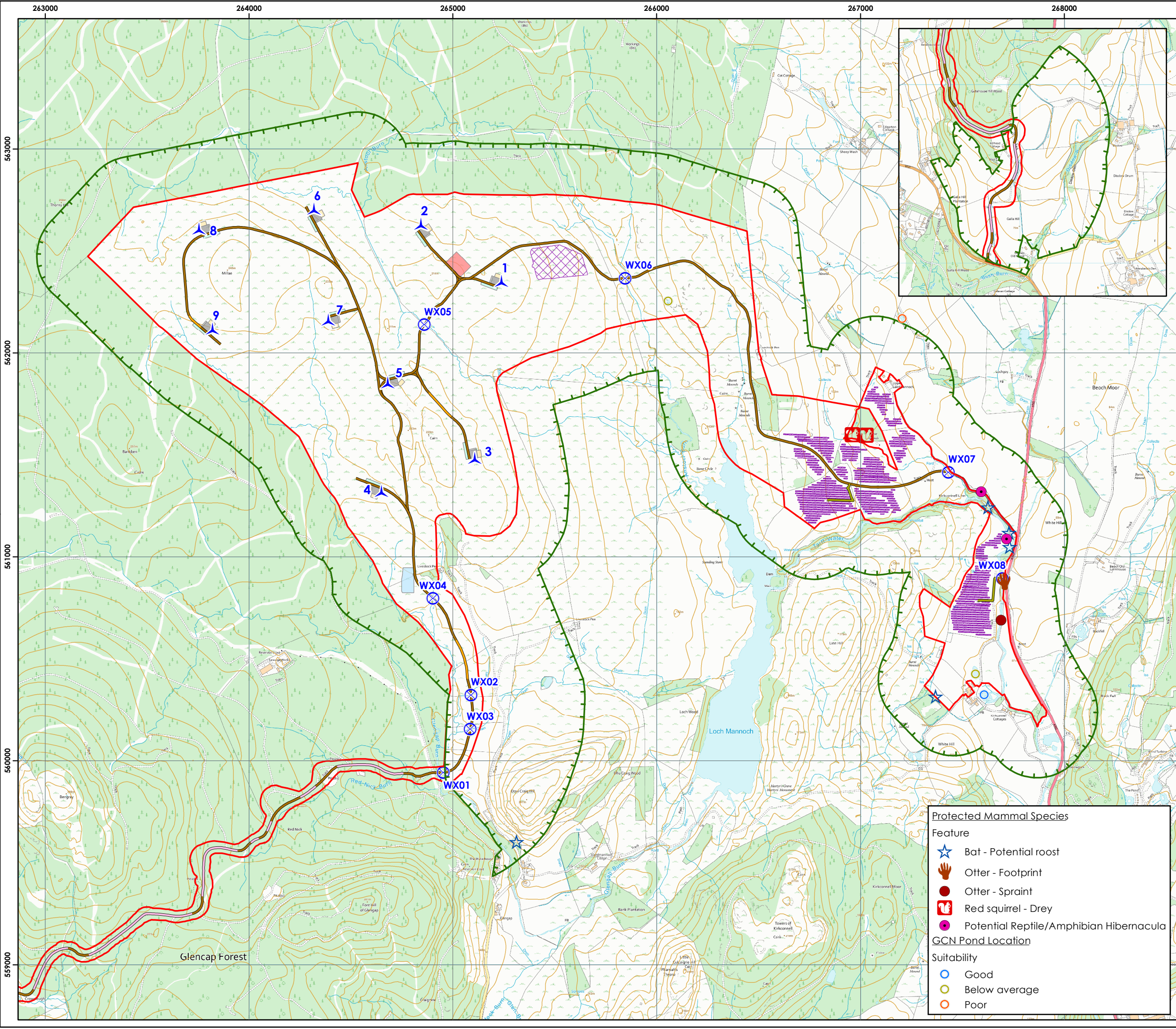
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Appendices

Appendix A. Figures

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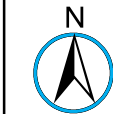
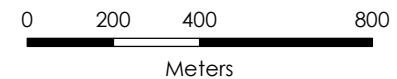
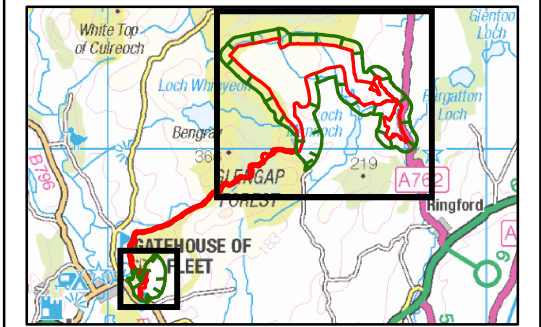


Lairdmannoch Energy Park



Figure 6-4-1
Protected Species

- Key**
- Site boundary
 - Watercourse crossing
 - Turbine Location
 - Survey Area
- Access tracks**
- Access track - cut
 - Access track - floating
 - Access track - upgraded / widened
 - Access track - solar
- Wind infrastructure**
- Crane hardstanding
 - Auxiliary crane area
 - Tower storage
 - Blade storage
 - Substation and BESS
 - Construction compound
 - Borrow Pit
- Solar infrastructure**
- Solar panel
 - Power Station
 - Switching and Breaking Station



Scale @ A3:
1:17,500



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Appendix B. GCN Habitat Suitability Index (HSI) Data

Table 6-4-2: ARG UK GCN HSI Calculator

Pond Name	1	2	A	3
Grid Ref.	NX 67205 62169	NX 67564 60426	NX 67607 60324	NX 66056 62253
Geographic location	0.5	0.5	0.5	0.5
Pond area	0.8	0.85	1	0.1
Pond permanence	0.9	0.1	0.9	0.5
Water quality	0.33	0.33	0.67	0.67
Shade	1	1	1	1
Water fowl effect	1	1	1	1
Fish presence	0.67	1	0.67	1
Pond Density	0.5	0.65	0.39	0.39
Terrestrial habitat	0.01	0.33	1	0.67
Macrophyte Cover	0.55	0.3	0.5	0.35
HIS SCORE	0.43	0.50	0.72	0.52
Pond Suitability	Below average	Below average	Good	Below average

Table 6-4-3: Categorisation of HSI Score

HSI Score	Pond Suitability
< 50	Poor
0.50 – 0.59	Below average
0.60 – 0.69	Average
0.70 – 0.79	Good
> 80	Excellent