

SHEIRDRIM RENEWABLE ENERGY DEVELOPMENT

Technical Appendix 8.4: Further Mammal Survey 2019

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1.0 Introduction

ScottishPower Renewables (SPR) intend to construct a renewable energy development at Sheirdrim, between Whitehouse and Clachan on the A83 in North Kintyre, Argyll and Bute. SLR Consulting Limited (SLR) was commissioned by SPR in May 2019 to undertake a range of non-avian ecological surveys at the Site including mammal surveys of an area of land not previously surveyed.

1.1 Survey Site

The proposed Sheirdrim Renewable Energy Development (the proposed Development) is located in the northern part of the Kintyre peninsula in Argyll and Bute, Scotland (the Site). The Site supports a mixture of habitats resulting from its present land-use, including commercial coniferous forestry, grazed wet grassland, heather moorland and numerous large lochans.

The focus of the further mammal survey is upon the south west area of the Site, which has been identified as a potential location for solar development. **Figure 8.4.1** illustrates the survey area covered, which included the area under consideration for solar development at the time of survey, plus a 250 m buffer.

1.2 Previous Survey Work

Previous survey work, undertaken by Arcus¹ in 2018, focused only on part of the Site. The 2018 surveys identified the presence of otter and pine marten within the site. An otter (*Lutra lutra*) was sighted on the bank of Loch Ciaran, and spraints were recorded at Loch Lurach, Lochan Fraoich and Larachmor Burn. Pine marten (*Martes martes*) scats were recorded at the site, mostly located within the forestry along the southern border of the site, but also at Loch Lurach and Larachmor Burn. Levels of bat foraging and commuting were recorded as low overall and dominated by common and widespread bat species such as soprano and common pipistrelle (*Pipistrellus pygmaeus* and *P. pipistrellus*).

In addition to confirming the presence of pine marten and otter, water vole (*Arvicola amphibius*) and red squirrel (*Sciurus vulgaris*) were considered likely to be present following the 2018 survey. Whilst no evidence of badger (*Meles meles*) could be identified, small areas of suitable habitat do exist and therefore their presence could not be discounted. It was considered that the site was of limited suitability for wildcat and that further surveys were not required for this species.

1.3 Relevant Legislation

1.3.1 Conservation (Natural Habitats, &c.) Regulations 1994

The Conservation (Natural Habitats, &c.) Regulations 1994 (the Habitats Regulations) (as amended in Scotland) transpose the operation of Council Directive 92/43/EEC on the Conservation of Natural Habitats and Wild Flora and Fauna (Habitats Directive) in Scotland. Under the Habitats Regulations it is an offence to deliberately capture, kill or disturb wild animals listed under Schedule 2 of the Regulations. It is also an offence to damage or destroy a breeding site or resting place of such an animal (even if the animal is not present at the time). Otter and all bat species are included on Schedule 2 of the Regulations.

1.3.2 Wildlife and Countryside Act 1981

The Wildlife and Countryside Act 1981 (as amended in Scotland) transposes the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) and Council Directive 79/409/EEC on the Conservation of Wild Birds (Birds Directive) into Scottish law. Under the Act, it is an offence to: Intentionally or recklessly kill, injure or take any wild animal listed under Schedule 5 of the Act; intentionally or recklessly damage, destroy or obstruct any place used for shelter or protection by any wild animal listed under Schedule 5 of the Act; intentionally or recklessly disturb certain Schedule 5 animal species while they occupy a place used for shelter or protection. Otter, water vole, pine marten, red squirrel and all bat species are included on Schedule 5 of the Act.

1.3.3 Nature Conservation (Scotland) Act 2004

The Nature Conservation (Scotland) Act 2004 places duties on public bodies in relation to the conservation of biodiversity, increases protection for Sites of Special Scientific Interest (SSSI), amends legislation on Nature Conservation Orders, provides for Land Management Orders for SSSIs and associated land, strengthens wildlife enforcement legislation, and requires the preparation of a Scottish Fossil Code and a Scottish Marine Wildlife Watching Code. It also amends the legislation for protected species, introducing new conditions to the 'incidental results of a lawful operation' defence for all wild birds and certain species of animal and plant.

The Act places a duty on every public body to further the conservation of biodiversity consistent with the proper exercise of their functions.

It also requires Scottish Ministers to designate one or more strategies for the conservation of biodiversity as the Scottish Biodiversity Strategy, and to publish lists of species of flora and fauna and habitats of principal importance.

1.3.4 The Wildlife and Natural Environment (Scotland) Act 2011

The Wildlife and Natural Environment (WANE) (Scotland) Act 2011 makes changes to existing legislation covering deer management, game management, species licensing, muirburn, snaring, otters, invasive non-native species and protected areas.

1.3.5 Protection of Badgers Act 1992

The Protection of Badgers Act 1992 (as amended in Scotland) makes it illegal to kill, injure or take a badger or to intentionally or recklessly interfere with a badger sett. Sett interference includes disturbing badgers whilst they are occupying a sett or obstructing access to it.

¹ Arcus Consultancy Services. 2018 *Achaglass Wind Farm Technical Appendix: Bats and Protected Species*.

2.0 Methodology

Surveys were undertaken on the 18th and 19th June 2019, by Nicola Faulks, Principal Ecologist, CEcol MCIEEM and Daniel Hulmes, Ecologist, Grad CIEEM both of SLR. Nicola has held Scottish and English bat survey licences for more than eight years (Scottish Natural Heritage bat licence number: 144854 (valid until 31st October 2023)) and has been actively working and surveying bats and other protected mammal species for over 14 years. Daniel has over two years' professional experience and has undertaken several surveys for protected mammal species previously.

All surveys were undertaken during suitable weather conditions. Surveys focussed on the habitats within the survey area most likely to support protected mammal species, including all mapped watercourses. Detailed survey methodology is presented below.

2.1 Otter

A detailed otter (*Lutra lutra*) survey, following standard methodology², was undertaken on all watercourses in the survey area. The watercourses were searched for signs of otter activity³ that included:

- Spraints – faeces left by otter, often found under tree roots, in or next to watercourses, beneath bridges, at crossing points of fences and walls, or on raised ground close to water;
- Tracks – footprints and other clearly defined signs of otter including slides where otters enter the water from the bankside;
- Feeding sites – where food remains are often found, typically fish or amphibians;
- Holts – underground shelters often found under tree roots, in rock piles, earth banks and other animal holes such as badger setts, rabbit burrows and fox earths as well as above ground shelters in dense scrubby vegetation; and
- Couches – lying up places above ground often found in long grasses or rushes near a watercourse or in wetland areas.

2.2 Water Vole

The survey methods used for water vole (*Arvicola amphibius*) were based on the current standard methodology detailed in the Water Vole Mitigation Handbook⁴. The Water Vole Mitigation Handbook recommends that up to two field survey visits are undertaken. However, in this case a single visit was considered sufficient based on the low suitability of habitat within the survey area (see Section 3.3 for further explanation).

All watercourses within the survey area were searched for signs of water vole activity including:

- Burrows;
- Latrines;
- Footprints;
- Runs in the vegetation;

- Grazed lawns;
- Feeding remains; and
- Sightings of water vole.

All watercourses within the survey area were also assessed in terms of their potential suitability for water vole. Habitats were classed as being unsuitable if they were heavily modified either by bankside engineering works or grazing; if they lacked suitable food plants such as a range of grasses, rushes and herbs; or if the banks were overly rocky or otherwise unsuitable for burrowing (including in heavily shaded forestry plantations).

2.3 Badger

The badger (*Meles meles*) activity survey broadly followed recommendations made in Neal and Cheeseman (2006)⁵.

The survey comprised a walkover of accessible land during daylight hours to search for evidence of badgers including, the presence of setts, pathways, paw prints, badger hairs, latrines and foraging signs.

The presence or absence of particular field signs and field sign combinations associated with any sett can help indicate the frequency with which badgers are currently using it. For example, the presence of freshly excavated spoil and discarded bedding materials on the spoil heap associated with the sett entrance may indicate a currently high level of activity, whereas the accumulation of leaf-litter within the tunnel mouth may indicate a lower frequency of activity. The season in which the badger survey is conducted will have an impact on the interpretation of such field signs, as badger activity fluctuates throughout the year. Badgers are capricious animals, moving between setts within their territory in response to environmental factors such as the availability of seasonal food resources, the accumulation of parasites, or territoriality.

For any setts identified, sett classification was undertaken in accordance with Table 2-1.

Table 2-1
Sett Classification

Sett Type	Definition
Main	Several holes with large spoil heaps and obvious paths emanating from and between sett entrances.
Annexe	Normally less than 150m from main sett, comprising several holes. May not be in use all of the time, even if the main sett is very active.
Subsidiary	Usually at least 50m from main sett with no obvious paths connecting to other setts. May only be used intermittently.
Outlier	Little spoil outside holes. No obvious paths connecting to other setts and only used sporadically. May be used by foxes and rabbits.

² Ward D, Holmes N and José P (1994) *The New Rivers and Wildlife Handbook*. RSPB, Bedfordshire.

³ Bang, P. and Dahlstrom, P. (2001) *Animal Tracks and Signs*. Oxford University Press.

⁴ Dean, M., Strachan, R., Gow, D. and Andrews, R. (2016). *The Water Vole Mitigation Handbook (The Mammal Society Mitigation Guidance Series)*. Eds Fiona Mathews and Paul Chanin. The Mammal Society, London.

⁵ Neal E. and Cheesman C. (2006) *Badgers*. Poyser Natural History, Cambridge, UK.

2.4 Pine Marten

All suitable habitat, within the additional survey site, was surveyed to determine the presence of pine marten (*Martes martes*). The survey area was searched for signs of pine marten activity that included:

- Scats – faeces left by pine marten, often found at prominent locations such as fallen tree stumps or rocks. Scats are usually dark in colour with a distinctively coiled shape;
- Tracks – footprints and other clearly defined signs of pine marten;
- Dens – a variety of habitats can be utilised as den sites including rocky outcrops, tree cavities, buildings, log piles and squirrel dreys. Where a potential den site is suspected, camera traps may be utilised to confirm the presence of pine martens;

2.5 Bats

Given the open nature of the habitats within the survey area (i.e. marshy/acid grasslands, wet heath and modified bog, which are unlikely to be of significant value to foraging and commuting bats) and the type of development proposed within the survey area (i.e. solar arrays, which is not likely to significantly affect foraging and commuting bats) bat activity surveys were not considered to be necessary. The survey area was searched for potential roost features however and a Preliminary Roost Assessment was undertaken for any potentially suitable structures or trees present.

2.5.1 Preliminary Roost Assessment

A single feature with some potential to support roosting bats was identified within the survey area, a former crofter's cottage (Scotmill). A Preliminary Roost Assessment (PRA) of this structure was undertaken following current best practice⁶. The PRA entailed an external inspection of the former crofter's cottage to identify potential bat roost locations and to assess the buildings potential to support roosting bats. It was not possible to undertake an internal inspection of the building due to Health and Safety concerns as the roof of the building was in a state of collapse.

The potential of the building to support roosting bats was assessed using criteria detailed in Table 2-2.

Table 2-2
Criteria for Assessing Building Suitability to Support Bat Roosts⁷

Category (Bat Potential)	Description
Negligible value	Building where surveyor has not identified any suitable potential roosting features, or where those that are present are of such poor quality or condition ⁸ , such that bats are highly unlikely to use them.
Low value	Building with one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats.

Category (Bat Potential)	Description
Moderate value	Building with one or more potential roost site that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but which are unlikely to support a roost of high conservation status (with respect to roost type only – the assessments in this table are made irrespective of species conservation status, which is established after presence is confirmed).
High value	Building with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat.

In addition to the PRA an SM2 static detector was left in the building overnight from 7pm on 18th June until 7am on 19th June to collect additional information as to whether the building was being used by bats during the PRA and to support the conclusions of the PRA.

2.6 Limitations

Immediately prior to the survey, the wider area around Sheirdrim Renewable Energy Development was subject to heavy overnight rain. It is therefore possible that some fresh field signs could have been washed away before the survey, particularly in regard to scats or spraints which are often deposited in intentionally exposed locations.

The section of the Clachan Burn which borders the western edge of the survey area was heavily vegetated, which reduced its level of accessibility for surveyors. Whilst every effort was made to survey this area thoroughly, there were some short sections of the burn which were considered inaccessible for health and safety purposes.

As noted above, it was not possible to undertake an internal inspection of the derelict cottage on Health and Safety grounds but additional information on the potential use of the building by bats was collected by the placement of an SM2 static detector within the building overnight. It is therefore considered that this is not a significant limitation and access to the inside of the building is not likely to have changed the conclusions reached in this report.

An ecological study provides only a “snapshot” of the conditions prevailing at the time of survey. Lack of evidence of any one protected species in particular does not necessarily preclude them from being present on site at a later date. Whilst it is considered unlikely that any significant evidence of protected or otherwise notable mammal species has been overlooked, due to the nature of the subjects of ecological surveys it is feasible that species that use the site may not have been recorded by virtue of their seasonality, cryptic behaviour, habit or random chance. It is considered unlikely however, that additional surveys of the site would materially alter the conclusions of this report.

⁶ Collins J. (ed) (2016) *Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn)* Bat Conservation Trust, London.

⁷ Based on: Collins (ed) (2016) *Bat Surveys for Professional Ecologists: Good Practice Guidelines*. Table 4.1, page 35.

⁸ For example, in terms of temperature, humidity, height above ground level, light levels or levels of disturbance.

3.0 Results

3.1 Otter

No otter field signs or resting places were recorded during the survey. Suitable habitat was present throughout the site however, most notably on the Clachan Burn and its subsidiary streams (Photograph 1). The majority of the watercourse is a fast-running stream with rocky banks. To the west of the site, the habitat on the Clachan Burn is highly vegetated and offers greater potential for the construction of an otter holt due to the greater shelter and privacy (Photograph 2).



Photograph 1

A view of the generally rock river banks present along the Clachan Burn



Photograph 2

A view of the vegetated riverbank of the Clachan Burn, located to the west of the survey site

Otters are highly mobile mammals and use different parts of their territories during different parts of the year, dependant on factors such as breeding condition and food availability. It is known that otter are present in the area and it is therefore likely that they use suitable habitat within the survey area occasionally for foraging and commuting, despite the lack of field signs recorded during the survey. The presence of holts or other resting places within the survey area is unlikely however.

3.2 Water Vole

No water vole field signs were recorded during the walkover survey. Most of the watercourses surveyed were considered unsuitable for water vole due to the large sections of rocky habitat which dominated the banks. However, there were some short sections of the Clachan Burn located outside of the site boundary which were considered potentially suitable for water vole due to the presence of muddy banks, such as Photograph 3. The banks of the Clachan Burn within the site were either peat or boulders and are not considered suitable for water vole.



Photograph 3

A view of a muddy riverbank on the Clachan Burn suitable for water vole burrows

3.3 Badger

Suitable foraging habitat is present within the survey area in the form of wet grassland, grazed by a combination of sheep and cattle in particular in the fields close to Target Note T2 on **Figure 8.4.1**. No badger field signs were recorded during the survey.

3.4 Pine Marten

No signs of pine marten were recorded during the survey and the habitats within the survey area have limited value for this species, being dominated by grassland, wet heath and wet modified bog. The survey area is bordered by conifer plantations to the north east and south east, and it possible that pine marten could traverse the survey area on occasion as they commute between areas of more favourable habitat such as the nearby woodland blocks.

3.5 Bats

There is only one building (Scotmill) within the survey area, a former crofter's cottage (see Building B1 on **Figure 8.4.1**), which appears to have been left derelict for at least the last 15-20 years (evidenced by historical aerial imagery). The building is located approximately 150 metres from the nearest woodland block, which is a conifer plantation, to the west. The conifer plantation is a commercial crop and the trees were estimated to be 20 – 30 years old, with no signs of bat roost potential noted. The building sits within an area of marshy grassland, with one mature sycamore tree (assessed as having negligible bat potential due to having no Potential Roost features), located 14 metres to the south east of the building. No other habitat connectivity is present between the building and the adjacent conifer plantations.

The building was formerly a pitch-roofed cottage, with slates overlying a wooden frame, underlain with wooden sarking. This has now collapsed and lies within the walls of the building. The walls of the building are made of stone, covered with a thick concrete like render. The building was generally well-sealed, despite the dereliction and the roof collapse. No significant gaps or potential roost access points were noted within the walls of the building. The wooden window frames, despite lacking their glass, were still well sealed, and no gaps were noted around these with the potential to provide suitable bat roosting habitat, see Photographs 4 and 5.



Photograph 4
Derelict crofter's cottage with concrete rendered walls



Photograph 5
Derelict crofter's cottage with water tank on outside of building

Inside the building, as viewed through the missing door and the windows, it was noted that the ceiling and roof had collapsed inwards, leaving a jumble of rafters and other materials (see Photograph 6). Evidence of use by sheep for sheltering was noted and two swallow (*Hirundo rustica*) nests were also noted. On approaching the building, six pigeons flew out, indicating that they are also using the structure for roosting. The building has two chimney breasts located at either end of the building. The one on the north west end of the building could be clearly seen. The stonework which forms the chimney breasts internally is exposed and is comprised of cobbles, blocks and mortar. Generally, the mortar appears to be quite solid with few gaps and no cracks noted. Using binoculars from the door and window, the chimney breasts were inspected, and no signs of droppings, smoothing or staining were noted.



Photograph 6
Internal view of crofter's cottage showing collapsed roof

The daytime inspection concluded that due to the location of the building in an area of open marshy grassland, with limited to negligible habitat connectivity to the adjacent conifer plantation, that the bat roost potential of the building was negligible to low.

As the presence of bats could not be completely ruled out a static bat detector was left in the building overnight. This recorded no bat activity during this time. It is therefore assessed that in its current state and location, the building has negligible bat roost potential.

3.6 Other Mammals

A mammal hole, resembling the characteristics of a fox (*Vulpes vulpes*) den, was observed within the survey area (see Photograph 7 and location T1 on **Figure 8.4.1**). Two red deer (*Cervus elaphus*) does were observed feeding in a field north of the Clachan Burn.



Photograph 7

A view of the fox den located along the edge of the Clachan Burn (T1, Figure 8.4.1)

4.0 Discussion and Conclusions

4.1 Bats

The Scotmill property was externally inspected for potential roost features for bats (an internal inspection of the building was not possible due to Health and Safety concerns). Further information on the possible usage of the building by bats was collected through the use of a static bat detector left overnight. The building is assessed as having negligible bat roosting potential based on its current condition and its location being isolated from suitable foraging/commuting habitat for bats. Therefore, no further survey work is required in respect of the derelict crofter's cottage at this time.

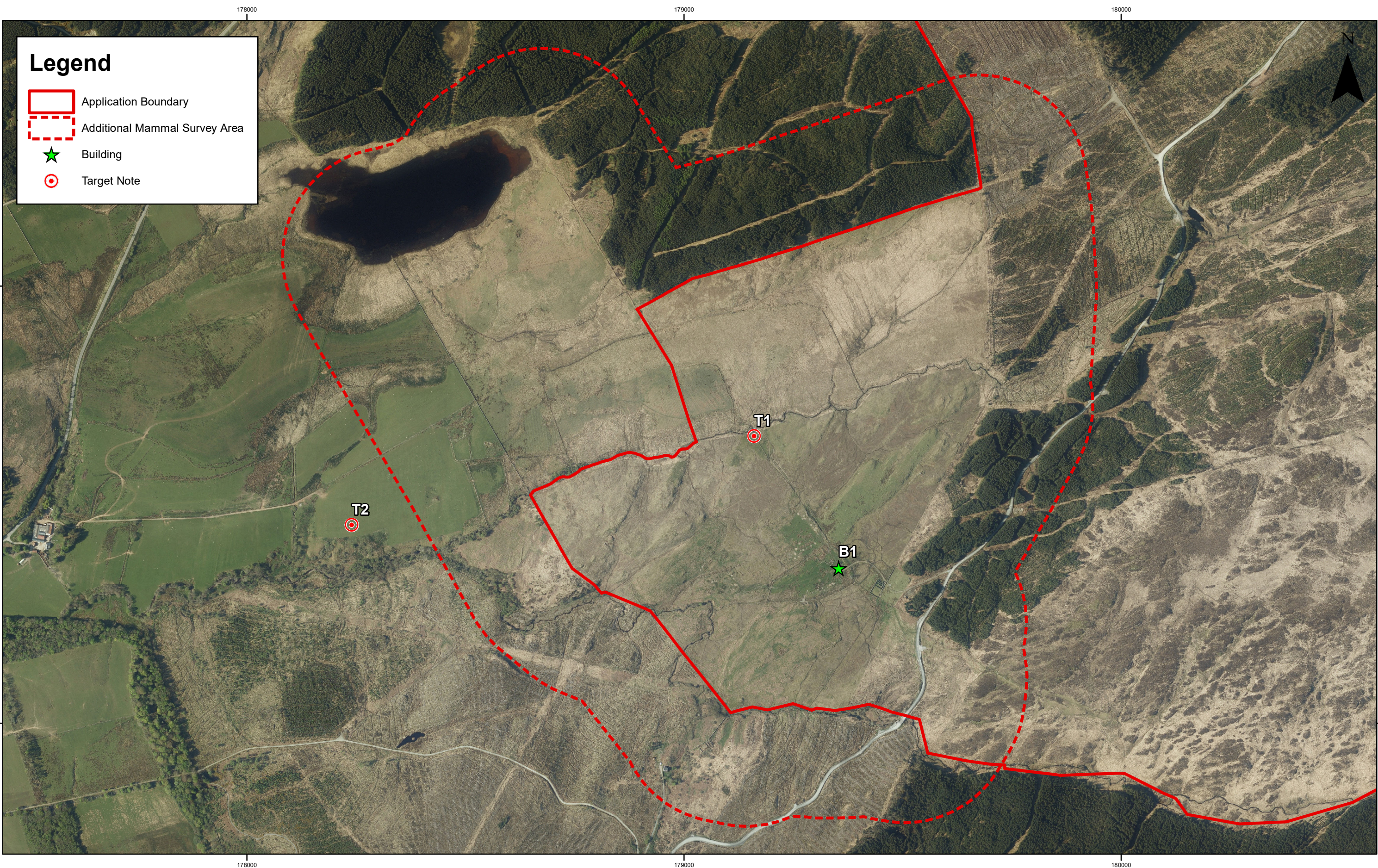
It should be noted that as the plantation woodland near the building matures and the building continues to deteriorate that the roost potential may change. Therefore, if the building is to be affected by proposed works, it should be re-checked at a suitable time of year, if works have not commenced within the next two years.

4.2 Other Mammals

The survey area offered potentially suitable habitat for a range of protected species including otter, water vole, badger and pine marten, albeit habitat suitability for water vole and pine marten was relatively low and/or limited to relatively small areas. No evidence of any of these species was recorded during the mammal surveys on 18th and 19th June 2019.

The results do not preclude the possibility of otter and pine marten s being present within the application boundary on an occasional basis and there are previous records of pine marten and otter within the wider Sheirdrim Renewable Energy Development site. Both species are highly mobile and territorial, and individual animals are likely to use the area on an occasional basis either for foraging as they disperse to new territories.

FIGURES



Legend

Application Boundary


Additional Mammal Survey Area

★

Building

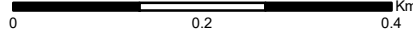
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Target Note



A	29/10/19	JRS	First Issue.
Rev	Date	By	Comment

1:8,000
Scale @ A3



00.20.4
Km

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Sheirdrim Renewable Energy Development - EIAR

Additional Mammal Survey

Additional Mammal Survey Results

Drg No	00481.00051.27.8.4.1.0		
Rev	A	Datum: OSGB36	
Date	29/10/19	Projection: TM	
Figure	8.4.1		

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