Chleansaid Wind Farm 132 kV OHL Connection

Environmental Appraisal (EA) Report

Appendix 7.2: Protected Species Technical Appendix

November 2024

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CONTENTS

LIST OF ABBREVIATIONS

CIEEM	Chartered Institute of Ecology and Environmental Management
EA	Environmental Appraisal
EPS	European Protected Species
FWPM	Freshwater Pearl Mussel
GIS	Geographical Information System
IIA	Important Invertebrate Area
INNS	Invasive Non-Native Species
LoD	Limit of Deviation
OHL	Overhead Line
PRA	Preliminary Roost Appraisal
PRF	Potential Roost Feature
SBL	Scottish Biodiversity List
WCA	Wildlife and Countryside Act 1981 as amended

1. INTRODUCTION

1.1 Project Background

1.1.1 WSP UK Ltd ('WSP') was commissioned by Scottish Hydro Electric Transmission plc (the 'Applicant'), operating and known as Scottish and Southern Electricity Networks Transmission (hereafter referred to as 'SSEN Transmission') to compile baseline protected species information to inform an Environmental Appraisal (EA) for a new 132 kV twin circuit overhead line (OHL) running between Chleansaid Windfarm 132 kV Substation to Dalchork Substation near Lairg, in the Sutherland region of the Highlands, Scotland (hereafter the 'Proposed Development'). The Proposed Development comprises of the proposed OHL alignment and temporary access tracks and construction areas. The Proposed Development encompasses a Limit of Deviation (LoD) of 100 m either side of the centreline of the proposed OHL alignment.

1.2 Purpose of this Baseline Report

1.2.1 This appendix presents baseline ecological information relevant to the Proposed Development. This Appendix should be read in conjunction with **Chapter 7: Ecology and Nature Conservation** of the EA Report for full details of the Proposed Development.

1.2.2 Baseline data have been collected from a desk-based review of existing information; habitat suitability site surveys; and species-specific detailed site surveys. Specifically, this Appendix presents the methods and results of the following ecology studies:

- desk-based review of existing protected species information;
- Alignment Selection protected species habitat suitability surveys;
- bat species site survey within 30 m of the Proposed Development LoD;
- badgers *Meles meles* site survey within 100 m of the Proposed Development LoD;
- red squirrel *Sciurus vulgaris* site survey within 50 m of the Proposed Development LoD;
- pine marten *Martes martes* site survey within 250 m of the Proposed Development LoD;
- otter *Lutra lutra* site survey within 200 m of the Proposed Development LoD;
- water vole *Arvicola amphibius* site survey within 100 m of the Proposed Development LoD; and
- incidental observations of other protected and/or notable species and invasive non-native species (INNS) recorded during the above species site surveys.

1.2.3 The ecological studies were conducted of the Proposed Development plus the above-defined survey buffers, safe public access permitting. The combined areas assessed are hereafter referred to as the 'Survey Area'.

2. METHODOLOGY

2.1 Desk Study

2.1.1 Initial desk-based studies were undertaken during Stage 1 Route Selection[1] and updated during Stage 2 Alignment Selection[2] of the Proposed Development. Desk study results were subsequently updated in October 2023 following the confirmation of the final alignment of the Proposed Development. Desk studies were undertaken to identify a broad range of potential constraints and opportunities within the Proposed Development and adjacent habitat. This included the following data which is of relevance to protected species:

- identification of records of protected species, and other constraints from National Biodiversity Network (NBN) Atlas[3], Buglife Important Invertebrate Areas (IIA)[4], and B-lines[5]; and
- review of the available survey information and Environmental Impact Assessment (EIA) Report for the Chleansaid Wind Farm[6] and nearby Creag Riabhach OHL EIA Report[7].

2.2 Protected Species Habitat Suitability Site Survey

2.2.1 A protected species habitat suitability survey was carried out between 10 and 21 April 2023, during the Proposed Development's Alignment Selection stage. The survey aimed to classify the suitability of terrestrial and aquatic habitats, within proximity of the Proposed Development, to support protected and notable species[8] likely to be present on or adjacent to site. The results of the surveys informed baseline conditions and informed the scope of any required detailed species surveys.

2.2.2 The protected species suitability surveys focused on the species/groups detailed in **Table 2-1**. These species/groups were potentially present on or adjacent to site based on results from the desk study undertaken in Section 2.1

Table 2-1: Suitability Criteria

Receptor	Criteria
Terrestrial Invertebrates	General suitability of terrestrial habitats for invertebrates such as butterflies, beetles, bees and moths, e.g., botanical diversity, habitat heterogeneity, food plants and food sources, dead wood. Incidental observations of adult or immature life stages, e.g., caterpillars.
Aquatic invertebrates and vertebrates	Potential suitability of standing and running water for fish, freshwater pearl mussel *Margaritifera margaritifera* and macro-invertebrate assemblage. Obvious signs of management, erosion, pollution, poaching. Substrate for spawning fish e.g., gravel beds.
Otter	General suitability of watercourses and water bodies to support otter, including depths, flow, bank and substrate material, food resources.

[1] SSEN Transmission (2022): Chleansaid Wind Farm Connection Route Selection Study Report

[2] WSP (2023). SSEN Transmission. Chleansaid Windfarm Connection. Alignment Selection Study Report

[3] NBN Atlas [online]. Available at: https://nbnatlas.org/ [Accessed January 2024].

[4] Buglife (2022). Important Invertebrate Areas. Available at: https://www.buglife.org.uk/our-work/important-invertebrate-areas/

[5] Buglife (2022). B-Lines. Available at: https://www.buglife.org.uk/our-work/b-lines /

[6] Chleansaid Wind Farm, Appendix 8.1: Habitats and Vegetation (2020). ESB Asset Development UK Limited.

[7] Creag Riabhach Wind Farm Grid Connection: Environmental Impact Assessment Report (2020), Scottish and Southern Electricity Network (SSEN).

[8] European Protected Species (EPS), protected under the Conservation (Natural Habitats &c.) Regulations 1994 (as amended)[8], those identified as priority species on the Scottish Biodiversity List[8] (SBL) and/or protected under national legislation such as the Wildlife and Countryside Act 1981[8] as amended (WCA) or Protection of Badger Act 1992[8] (PBA)

Receptor	Criteria
	Incidental otter signs: Spraints (faeces), footprints, otter laying up sites, e.g. holts – an underground structure which is deep enough that the back of the cavity cannot be readily seen[9].
Bats	Presence of woodland, scrub, hedgerows, watercourses and ponds for commuting and foraging. Presence of suitable buildings, trees or structures for roosting. Which were recorded and classified as 'low', 'moderate' or 'high' suitability following best practice guidance [10]. Incidental observation of roosts via evidence of droppings, urine stains.
Red squirrel and pine marten	General suitability of terrestrial habitats to support red squirrel or pine marten i.e., woodlands. Incidental red squirrel signs: drey (shelter), feeding evidence, prints or sightings. Incidental pine marten signs: den (shelter), prints or scat.
Badger	General suitability of terrestrial habitats to support badger, e.g., woodland, grassland. Incidental badger signs: setts, badger paths, footprints, fence push-ups, foraging marks, latrines, and hair[11].
Water vole	General suitability of watercourses to support water vole, including details of burn geomorphology and riparian and emergent vegetation. Incidental water vole signs: Droppings, burrows, footprints, chewed vegetation[12].
Birds	Presence of woodland, scrub and hedgerows, grassland, arable field margins, veteran trees, buildings (with potential suitability for barn owl *Tyto alba or* swallows *Hirundo rustica* and house martins *Delichon urbicum*), watercourses (bank substrate for kingfisher *Alcedo atthis or* sand martin *Riparia riparia*), wetlands and coastal areas. Incidental observations such as nests, visual and/or acoustic identification of birds[13].
Amphibians	The suitability of habitats (including ponds and waterbodies) for amphibians. The proximity, quality, and accessibility of surrounding terrestrial habitats. Incidental observations of adult or immature life stages, e.g., spawn or tadpoles[14].
Reptiles	General suitability of terrestrial habitats to support reptiles, e.g., embankments, slopes, potential natural and artificial refugia, interface or edge habitats, and shade free areas near dense vegetation. Linkages to off-site habitats. Incidental observations of reptile species.
Other species	General suitability of habitats to support any other protected or notable species.

2.2.3 The protected species habitat suitability survey was conducted in the field on foot, access permitting. Observed target species field signs or notable features, such as structures with bat roosting potential, were recorded as individual point locations using GIS software. Once recorded, the data was later quality assured utilising desktop GIS software.

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

10 Collins J. (ed.) (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd Edition). The Bat Conservation Trust, London.

11 Scottish Badgers (2018). Surveying for Badgers: Good Practice Guidelines. Version 1

12 Dean, M., Strachan, R., Gow, D. and Andrews, R. (2016). The Water Vole Mitigation Handbook (The Mammal Society Guidance Series), The Mammal Society, London.

13 Gilbert, G., Gibbons, D.W. and Evans, J. (1998). Bird Monitoring Methods: A Manual of Techniques for Key UK Species. RSPB

14 Sewell, D, Griffiths RA., TJC. Beebee, Foster, J. and Wilkinson, JW (2013). Survey protocols for the British herpetofauna. Version 1.0.

2.2.4 The assessment of the habitat's suitability to support the targeted species and identification of field signs was based on standard sources of guidance on habitat suitability and field sign assessment. This was supplemented by professional experience and judgement. The applicable guidance included:

- Bat species (Collins, 2016[15]);
- Badger (Scottish Badgers, 2018[16] and NatureScot, 2018[17]);
- Red squirrel (Gurnell et al., 2009[18] and NatureScot, 2020a[19]);
- Pine marten (Cresswell et al., 2012[20] and NatureScot, 2020b[21]);
- Reptile Species (Gent et al., 2003[22] and NatureScot, 2020c[23]);
- Otter (Chanin, 2003[24] and NatureScot, 2020d[25]); and
- Water vole (Dean et al., 2016[26] and NatureScot, 2020e[27]).

2.3 Species-Specific Site Surveys

2.3.1 A suite of species-specific site surveys was carried out in July 2023, to inform the baseline biodiversity aspects of the Proposed Development's EA. The scope of these surveys was informed by the results of the habitat suitability site surveys, the layout of the Proposed Development and consultation as described in **Chapter 7: Ecology and Nature Conservation**.

2.3.2 All surveys were carried out by WSP ecologists of 'Capable' or above competency, as per the CIEEM Competency Framework[28].

2.3.3 The resulting Survey Area for each species is presented in **Figure 7.2.1 Protected Species Results**.

2.3.4 The targeted protected species surveys were carried out following the methodologies described below for bat species; badger; squirrel species; pine marten; otter; and water vole. The recorded data for each species are presented in **Annex B**.

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15 Collins J. (ed.) (2016). Bat Surveys for Professional Ecologists, Good Practice Guidelines (3rd Edition). The Bat Conservation Trust, London.

16 Scottish Badgers (2018). Surveying for Badgers: Good Practice Guidelines, Version 1. Scottish Badgers, Forfar, Angus.

17 NatureScot (2018). Licensing Guidance. What is a badger sett? Available at: https://www.nature.scot/sites/default/files/2018-10/Guidance%20-%20Licensing%20-%20Badgers%20-%20What%20is%20a%20Badger%20sett_.pdf

18 Gurnell, J., Lurz, P., McDonald, R. and Pepper, H. (2009). Practical Techniques for Surveying and Monitoring Squirrels. Practice Note. Forestry Commission, Edinburgh.

19 NatureScot (2020a). Standing Advice for Planning Consultations, Protected Species: Red Squirrel. Available at: https://www.nature.scot/doc/standing-advice-planning-consultations-red-squirrels

20 Cresswell WJ, Birks J, Dean M, Pacheco M, Trewhella WJ, Wells D and Wray S (2012). UK BAP Mammals: Interim Guidelines for Survey Methodologies, Impact Assessment and Mitigation. The Mammal Society, Southampton.

21 NatureScot (2020b). Standing Advice for Planning Consultations, Protected Species: Pine Marten. Available at: https://www.nature.scot/doc/standing-advice-planning-consultations-pine-martens

22 Gent, A. and Gibson, S. (2003). Herpetofauna Workers' Manual. Joint Nature Conservation Committee (JNCC), Peterborough.

23 NatureScot (2020c). Standing Advice for Planning Consultations, Protected Species: Reptiles (Adder, Slow Worm & Common lizard). Available at: https://www.nature.scot/doc/standing-advice-planning-consultations-reptiles-adder-slow-worm-common-lizard

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

25 NatureScot (2020d). Standing Advice for Planning Consultations, Protected Species: Otter. Available at: https://www.nature.scot/doc/standing-advice-planning-consultations-otters

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

27 NatureScot (2020e). Standing Advice for Planning Consultations, Protected Species: Water Vole. Available at: https://www.nature.scot/doc/standing-advice-planning-consultations-water-voles

28 CIEEM (2022). Competency Framework. Available at: https://cieem.net/resource/competency-framework/

Bat Preliminary Roost Assessment

2.3.5 Bat surveys were undertaken in accordance with current industry[29] and NatureScot[30] guidance. Deviations to guidance are further discussed in **Section 2.4**.

Trees

2.3.6 A ground-level bat Preliminary Roost Appraisal (PRA) was undertaken across the targeted woodland habitats within the Survey Area. The survey aimed to identify and appraise Potential Roost Features (PRFs) for bats.

2.3.7 Trees in the targeted habitats were inspected to assess their suitability to support bat roosts and to search for evidence of their current or historic use by roosting bats. Definitive evidence of bat presence includes live sightings and droppings. Scratch marks and urine staining can also indicate their presence.

2.3.8 The trees were categorised for their bat roost suitability, taking into account the habitat surrounding the Proposed Development. Suitability is categorised as 'High'; 'Moderate'; 'Low'; or 'Negligible' according to the presence of PRFs which bats could use for roosting; and the relative value of these features for shelter and protection by single or colonies of bats at different times of year in the locality.

Structures

2.3.9 A ground-level bat Preliminary Roost Appraisal (PRA) was undertaken to accessible and incidentally encountered buildings within the Survey Area. The survey aimed to identify and appraise PRFs for bats.

2.3.10 Any buildings identified within the Survey Area were inspected to assess their suitability to support bat roosts and to search for evidence of their current or historic use by roosting bats. Definitive evidence of bat presence includes live sightings and droppings. Scratch marks and urine staining can also indicate their presence.

2.3.11 Any buildings identified were categorised for their bat roost suitability, taking into account the habitat surrounding the Proposed Development. Suitability is categorised as 'High'; 'Moderate'; 'Low'; or 'Negligible' according to the presence of PRFs which bats could use for roosting; and the relative value of these features for shelter and protection by single or colonies of bats at different times of year in the locality.

2.3.12 Any private dwellings and commercial buildings were not assessed where access was not arranged, and direct impacts were not envisioned.

Bat Activity Surveys

2.3.13 Bat activity surveys conducted in line with the guidelines[10], were undertaken on two nights between August and September 2023 on a barn building with 'moderate' roost suitability within the Survey Area. These surveys were undertaken by a team of Suitably Qualified Ecologists (SQEs) including one NatureScot-licensed surveyor.

2.3.14 A total of two bat activity surveys were undertaken on the barn building due to it being of moderate suitability to support roosting bats. Dusk emergence surveys commenced 15 minutes before sunset and concluded 90 minutes after sunset, while dawn re-entry surveys started 90 minutes before sunrise and finished 15 minutes after sunrise.

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[29] Collins, L. (ed) (2016). Bat Surveys for Professional Ecologist, Good Practice Guidelines (3rd Edition). The Bat Conservation Trust, London.

[30] NatureScot (no date). Planning and Development: Protected Species. Available at: https://www.nature.scot/professional-advice/planning-and-development/planning-and-development-advice/planning-and-development-protected-species [Accessed January 2024]

Two surveyors and one Infrared (IR) Camera were positioned around the building to ensure maximum coverage of each aspect.

Badger

2.3.15 The badger survey comprised a search for field signs across the targeted terrestrial habitats, following methods outlined by Scottish Badgers[31] and broadly aligning with standing advice for planning consultants from NatureScot[30]. Deviations to guidance are further discussed in **Section 2.4**.

2.3.16 Badger field signs that were searched for included:

- setts;
- prints;
- latrines (dung pits used as territorial markers);
- guard hairs; and
- foraging signs (snuffle holes).

2.3.17 Where sufficient field evidence and/or surround sett information has been identified, setts identified in the field were categorised based on the following criteria:

- Main setts – These usually have a large number of holes with large spoil heaps, and the sett generally looks well used. They usually have well used paths to and from the sett and between sett entrances. Although normally the breeding sett is in continual use, it is possible to find a main sett that has become disused because of excessive digging or for some other reason, in which case it is recorded as a disused main sett.
- Annex setts – These are always close to a main sett, usually less than 150 m away, and are usually connected to the main sett by one or more obvious, well-worn paths. They consist of several holes, but are not necessarily in use all the time, even if the main sett is very active.
- Subsidiary setts – These often have only a few holes, are usually at least 50 m from a main sett, and do not have an obvious path connecting them with another sett. They are not continuously active.
- Outlier setts – These usually only have one or two holes, often have little spoil outside the hole, have no obvious path connecting them with another sett, and are only used sporadically. When not in use by badgers, they are often taken over by foxes or even rabbits. However, they can still be recognised as badger setts by the shape of the tunnel (not entrance hole), which is at least 250-300 mm wide at the base with a rounded or flattened oval roof (roughly 200 mm high).

Red Squirrel

2.3.18 The survey involved a systematic search of all targeted woodland areas. Visual observations of red squirrels and squirrel field signs were searched for.

2.3.19 The surveyors walked transects (approximately 10-15 m apart) throughout woodland blocks and treelines stopping at least every 50 m to look for signs of dreys and/or red squirrels. The survey was completed in accordance with

[31] Scottish Badgers (2018). Surveying for Badgers. Good Practice Guidelines (V1). Available at: https://www.scottishbadgers.org.uk/wp-content/uploads/2020/12/Surveying-for-Badgers-Good-Practice-Guidelines_V1-2020-2455979.pdf

survey guidance for initial non-intrusive visual surveys[32] and NatureScot[30] guidance. Incidental sightings of grey squirrel *Sciurus carolinensis* were also recorded, if observed. Deviations to guidance are further discussed in **Section 2.4**.

2.3.20 The field signs typically associated with squirrel species include the following:

- Dreys - Distinctive bundles of twigs in trees that are usually 15 years or older and can be conifer or broadleaf species.
- Feeding signs – Frequently comprising chewed conifer cones. Often discarded on prominent features at 'feeding stations'.
- Footprints – Squirrel tracks may be found on soft mud, sand and snow etc. Often within, or at the edges or, woodland areas.
- Sightings – Direct sightings of red squirrels.

Pine Marten

2.3.21 The survey involved a systematic search of all targeted habitat areas for pine marten field signs and potential den sites. The survey was completed in accordance with survey guidance for initial non-intrusive visual surveys[32] and NatureScot[30] guidance. Deviations to guidance are further discussed in **Section 2.4**.

2.3.22 The field signs typically associated with pine marten include the following:

- Potential scats – Pine marten faeces are known be used to mark territories. Pine martens are elusive and largely nocturnal, which makes them difficult to see, but their scats (droppings) are often quite distinctive (in structure, smell and content) and are the most commonly encountered field sign. Often observed on prominent rock outcrops, mounds or tussocks; or at the edges of woodland blocks, rides or pathways.
- Footprints – Pine marten tracks may be found on soft mud, sand and snow etc. Often within, or within proximity of, dense coniferous woodland areas.
- Potential den sites.
- Sightings – Direct sightings of pine marten.

Otter

2.3.23 Field signs of otters were searched for along watercourses within the Survey Area and were surveyed on foot, in-channel, where flow rates and depths safely allowed. Otherwise, the watercourses were surveyed from 2 m back from the waters' edge due to health and safety requirements utilising binoculars, as required. The survey was undertaken broadly following methodologies from standard guidance documents[33, 34] with reference to NatureScot protected species advice for developers[30]. Deviations to guidance are further discussed in **Section 2.4**.

2.3.24 The field signs typically associated with otter include the following.

- Holts – These are underground or enclosed features where otters live. They can be, for example, tunnels within bank sides; underneath root systems or boulder piles; and even fabricated structures such as disused drains.

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[32] Cresswell WJ, Birks J, Dean M, Pacheco M, Trewhella WJ, Wells D and Wray S (2012). UKBAP Mammals: Interim Guidelines for Survey Methodologies, Impact Assessment and Mitigation. The Mammal Society, Southampton.

[33] Chanin, P. R. F. (2003a). Ecology of the European otter *Lutra lutra*. Conserving Natura 2000 Rivers Conservation Ecology Series No. 10, English Nature, Peterborough.

[34] Chanin, P. (2003b). Monitoring the Otter *Lutra*. Conserving Natura 2000 Rivers Monitoring Series No. 10, English Nature, Peterborough.

Holts are used by otters to rest up during the day and are the usual site of natal or breeding sites. Otters may use holts permanently of temporarily.

- Couches – These are above-ground resting sites. They may be partially sheltered or fully exposed. Couches may be regularly used, especially in reed beds and on in-stream islands. Couches can be very difficult to identify and may consist of an area of flattened grass or earth.
- Spraint – Otter faeces known as spraint may be used to mark territories, often observed on in-stream boulders. They can be present within or outside the entrances of holts and couches. Spraints have a characteristic smell and often contain fish remains. Features with two or more spraints of mixed age are considered to be spraint sites, with signs of regular use.
- Prints – Characteristic footprints of otter are often observed in soft ground and muddy areas.
- Anal jelly – Like spraint, anal jelly is often observed on prominent in-stream boulders.
- Feeding signs – Remains of prey items may be found at preferred feeding stations. Remains of fish, crabs, or skinned amphibians can indicate the presence of otter.
- Pathways – These are terrestrial routes that otters take when moving between resting sites and watercourses, or at high flow conditions when they will travel along bank sides in preference to swimming.

Water Vole

2.3.25 Field signs of water voles were searched for along watercourses within the Survey Area and were surveyed on foot, in-channel, where flow rates and depths safely allowed. Otherwise, the watercourses were surveyed from 2 m back from the waters' edge due to health and safety requirements utilising binoculars, as required. The survey was undertaken broadly following methodologies from standard guidance documents[35] with reference to NatureScot protected species advice for developers[30]. Deviations to guidance are further discussed in **Section 2.4**.

2.3.26 The field signs typically associated with water vole include the following:

- Droppings – Water vole faeces is recognisable by their size, shape and content. If not too dried-out these are also distinguishable from rat droppings by their smell.
- Feeding stations – Food items are often brought to feeding stations along pathways and hauled onto platforms. Recognisable as neat piles of chewed vegetation up to 10 cm long.
- Burrows – These appear as a series of holes along the water's edge, distinguishable from rat burrows by size and position.
- Lawns – These may appear as grazed areas around land holes.
- Nests – Where the water table is high, above ground woven nests may be found.
- Prints – Water vole footprints may be found at water's edge and lead into bankside vegetation. May be distinguishable from rat footprints by size.
- Runways – These are low tunnels pushed through vegetation near the water's edge, less obvious than rat runs.

[35] Strachan, R. (2011). The Water Vole Conservation Handbook. EA/EN/WildCRU, Oxford. Water vole Conservation handbook (3rd edition).

Invasive Non-Native Species

2.3.27 Incidental observations of INNS were recorded concurrently with the species-specific site surveys. The observations were focussed on the floral INNS species listed by NatureScot as potentially causing the most damage to biodiversity[36].

Other Species

2.3.28 Incidental observations of other protected or notable species and/or suitable habitat to support these species were also target noted (**Annex B**) where encountered in the Proposed Development area and within the Survey Area.

2.4 Limitations and Assumptions

2.4.1 Despite the aim to provide detailed baseline conditions, the following limitations apply to the assessments presented within this appendix. A precautionary approach has been applied within the EA and any recommended mitigation.

- Instances where sections of the site Survey Area were inaccessible due to access permissions or health and safety restrictions, remote surveying was carried out where possible. This involved using binoculars and / or interpreting suitability based on the surrounding habitat and conditions.
- Private buildings and maintained amenity gardens associated with private gardens were not accessed. However, the potential for private woodlands and housing to support protected species (such as roosting bats) was remotely recorded, where possible, due to the potential for disturbance during the Proposed Development's construction.
- At the time of surveying, bat surveys were undertaken with reference to 2016 BCT guidelines[15] which have now been superseded. In the interim, BCT have released the 4th edition of their guidelines[37]. The results and recommendations within this report are still valid. However, if any other bat surveys are to be undertaken, new guidelines will be adhered to.
- Where suitable features that can be used as resting sites (such as squirrel dreys; or pine marten dens) have been identified within the Survey Area, but the presence or current use by a protected species has not been confirmed, they have been recorded as 'potential' rest areas (i.e. 'potential squirrel drey'; or 'potential pine marten den site'). For the purposes of the EA Report, this allows the habitat suitability for the applicable species to be assessed and the availability of resting sites recorded. This information can then inform the potential impact and mitigation.
- DNA analysis is required to confirm potential pine marten scat provenance and to distinguish from similar sized mammals, such as fox *Vulpes vulpes*.
- The upper portions of broadleaved trees in leaf, or evergreen coniferous trees, may be obscured by the trees' foliage. This has the potential to prevent the visual observation of upper features such as squirrel dreys; or bat PRFs. Additionally, it is not always possible to distinguish a drey from a bird's nest from ground level, or its current activity/occupation. In these instances, a precautionary approach is applied, and the feature is recorded as a potential drey.

[36] NatureScot (no date). Invasive Non-Native Plants. Available at: https://www.nature.scot/professional-advice/protected-areas-and-species/protected-species/invasive-non-native-species/invasive-non-native-plants [Accessed January 2024].

[37] Collins J. (ed.) (2023). Bat Surveys for Professional Ecologists, Good Practice Guidelines (4th Edition). The Bat Conservation Trust, London.

- The likely classification applied to setts observed (if any) is based on the scale and activity identified at the time of survey. However, further study would be required to confirm the definitive badger sett classification for size and activity of the applicable badger clan.
- Ecological surveys are limited by factors which affect the presence species, such as the time of year and behaviour. The absence of field signs or visual observations should not be taken as conclusive proof that the species is not present or that it will not be present in the future.
- Ecological survey data will typically remain valid for up to 12 months, and up to 18 months with the following exceptions[38]:

– where a site may offer existing or new features which could be utilised by a mobile species within a short time frame;

– where a mobile species is present on-site or in the wider area, and can create new features of relevance to the assessment; and

– where country-specific or species-specific guidance dictates otherwise.

[38] Chartered Institute of Ecology and Environmental Management (2019). Advice Note on the Lifespan of Ecological Reports and Surveys. CIEEM, Winchester.

3. RESULTS

3.1 Desk Study

European Protected Species and Scottish Biodiversity List

3.1.1 The ecological desk study identified records of several European Protected Species (EPS), protected under the Conservation (Natural Habitats &c.) Regulations 1994 (as amended)[39], those identified as priority species on the Scottish Biodiversity List[40] (SBL) and / or protected under national legislation such as the Wildlife and Countryside Act 1981[41] as amended (WCA), the Salmon and Freshwater Fisheries (Consolidation) (Scotland) Act 2003[42] (SFF); or Protection of Badger Act 1992[43] (PBA). The identified species / species groups include:

- Bats (EPS and SBL); Several bat species (Common pipistrelle *Pipistrellus pipistrellus*, soprano pipistrelle *Pipistrellus pygmaeus*, Daubentons bat *Myotis daubentonii*, Natterers bat *Myotis nattereri*, and brown long-eared bat *Plecotus auritus*) are known to be present within the Highlands;
- Badger *Meles meles* (PBA); Badgers are known be present in the Highlands;
- Red squirrel *Sciurus vulgaris* (WCA and SBL); Records of red squirrel, two of which were sighted in 2015 and 2019, to the south of the Proposed Development near Lairg.
- Pine marten *Martes martes* (WCA and SBL); Various records of sightings were found during the desk study with the latest record being recorded in 2018;
- Otter (EPS and SBL); Various sightings within the Proposed Development have been recorded and they are known to be widespread throughout the Highlands;
- Water vole *Arvicola amphibius* (WCA and SBL); Water vole were identified within the Survey Area as part of a separate project relating to Creag Riabhach Wind Farm Grid Connection[44];
- Reptiles (WCA and SBL); Slow-worm *Anguis fragilis*, adders *Vipera berus*, common lizard *Zootoca viviparaare* known to be in the Highlands;
- Amphibians (EPS and SBL). Common toad *Bufo bufo*, common frog *Rana temporaria* and palmate newt *Lissotriton helveticus* have been recorded within the Proposed Development. Great crested newt *Triturus cristatus* are known to have small populations within the Highlands;
- Fish (sea trout *Salmo trutta* and Atlantic salmon SBL and SFF). Atlantic salmon are known to exist in the River Naver (designated as a SAC), 9 km north of the Proposed Development.
- Freshwater pearl mussel (FWPM) (SBL and WCA). A population of freshwater pearl mussel is known to exist in the River Naver (designated as a SAC), 9 km north of the Proposed Development. No records of FWPM were identified within 2 km of the Proposed Development.

3.1.2 In addition to above, a review of protected species data from Creag Riabhach OHL connection and Chleansaid Windfarm EIA identified several evidence records of otter, water vole and pine marten situated within woodland areas adjacent to the River Tirry, Feith Osdail, and Allt Chaisegail as well as along each watercourse. Feith Osdail, and Allt Chaisegail are crossed by the Proposed Development.

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[39] The Conservation (Natural Habitats, &c.) Regulations 1994. [online] Available at: *https://www.legislation.gov.uk/uksi/1994/2716/contents/made* (Accessed January 2024).
[40] The Scottish Biodiversity List is a list of animals, plants and habitats that Scottish Ministers consider to be of principal importance for biodiversity conservation in Scotland, as required by the Nature Conservation (Scotland) Act 2004.
[41] Wildlife and Countryside Act 1981. [online]. Available at: https://www.legislation.gov.uk/ukpga/1981/69 (Accessed January 2024).
[42] https://www.legislation.gov.uk/asp/2003/15/contents [Accessed January 2024]
[43] Protection of Badger Act 1992. [online]. Available at: https://www.legislation.gov.uk/ukpga/1992/51/contents (Accessed January 2024).
[44] SSEN (2020) Appendix 7.3: Protected Species Survey Results, Creag Riabhach Wind Farm Grid Connection: Environmental Impact Assessment Report.

3.2 Field Survey

Protected Species Suitability Survey

3.2.1 A protected species suitability survey was undertaken during Stage 2 Alignment[45] to inform optioneering of the Proposed Development, A survey of the Proposed Development LoD and up to 250 m survey buffer ('Survey Area') was undertaken. Suitable habitat to support protected / species along with evidence of protected species recorded within the Survey Area is summarised below.

- Bat: Linear features, including riparian corridors and woodland edge provided suitable foraging and commuting habitat for bats. Suitable roosting features for bats such as disused stone farming buildings were recorded to the north of the Proposed Development.
- Badger: The Survey Area was predominantly comprised of densely cropped coniferous woodland, areas of clear fell, with blanket bog and wet heath habitats to the north. Bog and heath habitats are of limited suitability for sett construction due to the waterlogged nature. The Survey Area was also suitable for foraging and commuting with no manmade barriers preventing access to the alignment options from the surrounding area.
- Red squirrel and pine marten: Coniferous woodland plantation and semi-mature mixed woodland within the Survey Area was considered suitable to support red squirrel and pine marten. Within the Survey Area, red squirrel are likely to utilise woodland (including linear woodlands and shelterbelts) for drey-building and foraging. Open heath areas to the north provide limited foraging opportunities (for example field voles *Microtus agrestis*) for pine marten.
- Otter: Generally, watercourses within the Survey Area contained optimal habitat for otter. Watercourses within the Survey Area included Feith Osdail to the south, River Tirry which intersects the centre of the Survey Area and Abhainn Sgeamhaidh to the north. These larger watercourses were found to include suitable banks and overhanging heathland vegetation for otter resting sites. These watercourses provided suitable commuting habitat for otter, and were well connected to surrounding suitable otter habitat, flowing southwards towards Loch Shinn.
- Water vole: Standing freshwater and riparian habitat within the Survey Area was considered suitable for water vole. Grassy banks provide suitable habitat for burrowing and slow-moderate flowing watercourses were considered suitable for wate vole foraging.
- Reptiles: The Survey Area contains habitat suitable for reptiles including stone walls, rock piles, woodland edge, dense tussocky grassland, heath and open areas for basking, shelter and foraging.
- Amphibians: Within the Survey Area, amphibian species are likely to utilise very slow-flowing running and standing freshwater and riparian habitat for shelter and foraging and stone walls, rock piles, woodland edge, tussocky grassland and heath for shelter (including over winter/hibernation).
- Fish: Burns and freshwater habitat within the Survey Area were deemed to have suitability for fish species such as sea trout and Atlantic salmon, with watercourses such as Feith Osdail, Al'lt a' Mhadaidh-ruaidh, Allt Chaiseagail, and Allt a' Breac-leathaid, hydrologically connected to the nearby River Tirry and River Brora.
- FWPM: Burns throughout the Survey Area were found to be suitable to support FWPM, with clear, unpolluted water.

[45] WSP (2023). SSEN Transmission. Chleansaid Windfarm Connection. Alignment Selection Study Report

Bat Preliminary Roost Assessment

Trees

3.2.2 No trees with PRFs were identified within the Survey Area. Most of the woodlands comprised commercial forestry plantation, which often present fewer opportunities for bat species than broadleaved trees.

3.2.3 However, suitable foraging and commuting habitat was found across the Survey Area, including watercourses; woodland edges; and hedge lines.

Buildings

3.2.4 One barn building with gaps in stonework and missing roof slates (**Figure 7.2.1: Ref. B1**) was identified with 'Moderate' summer roosting suitability, and 'Moderate' hibernation suitability during the PRA. No other buildings or structures were identified with bat roost potential throughout the Survey Area.

Bat Activity Surveys

Dusk emergence survey 1 – 8th August 2023

3.2.5 No roosts were identified during the first dusk emergence survey with no bat activity recorded by the surveyors undertaking the survey.

Dusk emergence survey 2 – 11th September 2023

3.2.6 During the second dusk emergence survey one pipistrelle species *Pipistrellus spp.* was recorded emerging from the barn door on the east aspect and a second common pipistrelle bat was seen emerging from the roofline on the south aspect of the building.

3.2.7 Both soprano pipistrelle and common pipistrelle were recorded foraging and commuting during the second dusk emergence survey.

3.2.8 Locations for the barn building identified with PRFs is displayed in **Figure 7.2.1: Protected Species Results**. Data tables and target notes relating to bats are described in **Annex B**.

Badger

3.2.9 No signs of badger were recorded within the Survey Area. The woodland habitat within the Survey Area is considered suitable for foraging and commuting, and for sett establishment. The habitats within the Survey Area have robust connectivity to other suitable habitats for badger out with the Survey Area.

Red Squirrel

3.2.10 No evidence of red squirrel was recorded within the Survey Area. However, red squirrel may still utilise the habitats present within the Proposed Development area, although the potential carrying capacity of these woodlands is low due to the woodland being predominantly immature Sitka spruce plantation. In addition, several areas of clear fell present within the Survey Area are likely to have reduced the overall connectivity of these woodland areas to the wider landscape.

3.2.11 Based on their natural range[46], red squirrels are considered to be present within optimal habitat along the Proposed Development.

Pine Marten

3.2.12 The majority of the Proposed Development falls within the known distribution range of pine marten within Scotland[47, 48]. Suitable areas within the Survey Area included areas of woodland with dense canopies and good connectivity to the wider landscape as well as a dilapidated/accessible barn building (**Figure 7.2.1: Ref. PM1**).

3.2.13 Incidental potential evidence of pine marten activity was recorded, including two potential scat droppings located, within or adjacent to woodland or on access tracks (**Figure 7.2.1: Ref. PM2,** and **PM3**).

3.2.14 Full results of pine marten observations are displayed in **Figure 7.2.1 Protected Species Results**. Data tables and target notes relating to pine martens are described in **Annex B**.

Otter

3.2.15 Otter evidence was identified within the Survey Area which included four individual spraining sites identified across Feith Osdail and Allt Chaiseagail watercourses (**Figure 7.2.1: Ref. O1, O2, O3,** and **O4**). No other evidence of otter was identified throughout the Survey Area.

3.2.16 Full results of otter observations are displayed in **Figure 7.2.1 Protected Species Results**. Data tables and target notes relating to otters are described in **Annex B**.

3.2.17 Otters are assumed to be present along substantial portions of the Proposed Development. In particular, riparian habitats along the Proposed Development provide suitable commuting, foraging and resting opportunities.

Water Vole

3.2.18 Five burrows of a suitable size and shape to support water vole were identified along Al'lt a' Mhadaidh-ruaidh along with feeding signs and latrines (**Figure 7.2.1: Ref. WV1**). The site contains suitable habitat across and adjacent to the numerous water courses that intersect it. Water voles are known to be present within the local area to the Proposed Development with records of water vole previously recorded in 2020[44] within the Survey Area.

3.2.19 The burrow location and field signs of water vole are displayed in **Figure7.2.1 Protected Species Results**.

Other

3.2.20 In addition to the above observations of target species, the following additional protected notable species observations were made during the Study.

Reptiles

3.2.21 Reptiles were recorded foraging and basking within the Survey Area during the survey. Common lizards were noted across the site along a stretch of watercourse to the northeast of the Proposed Development (**Figure 7.2.1: Ref. R2**).

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[46] The Mammal Society (no date). Species – Red Squirrel (online). Available at: https://www.mammal.org.uk/species-hub/full-species-hub/discover-mammals/species-red-squirrel/ [Accessed January 2024].

[47] Croose, E., Birks, J.D.S., Schofield, H.W. and O'Reill, C. (2014). Distribution of the pine marten (*Martes martes*) in southern Scotland in 2013. Scottish Natural Heritage Commissioned Report No. 740.

[48] The Vincent Wildlife Trust (2020). The Pine Marten. Available at: https://www.vwt.org.uk/species/pine-marten/ [Accessed January 2024].

One instance of a single adder recorded basking within the Survey Area (**Figure 7.2.1: Ref. R1**). The locations of reptile sightings are found in **Figure7.2.1 Protected Species Results.**

3.2.22 Reptiles prefer successional habitats with a degree of heterogeneity. Optimal habitat includes vegetated and / or rocky areas for shelter and open areas for warmth[49] which are noted across the Proposed Development. Additionally, habitat suitable to support reptiles was considered and target noted where appropriate; and included areas of grass and heathland (wet and dry), rough grassland, moorland, woodland (including clear fell and young plantation). Specifically, features such as dry-stone walls, rocky outcrops and log piles have been noted to provide optimal habitat for sheltering and basking reptiles.

Amphibians

3.2.23 Common frogs were recorded incidentally by surveyors during the survey.

3.2.24 The terrestrial requirements for most native species of amphibians are fairly generic, as they can occupy a variety of different habitat types. However, they are largely dependent on water and prefer areas that provide adequate levels of shelter. This includes wet woodland, scrub habitat and marshy / inundation vegetation. Standing waterbodies and the terrestrial habitat surrounding them have potential to support a variety of amphibian species.

Fish

3.2.25 Suitable fish habitat was identified within Allt a' Breac-leathaid, Feith Osdail and Allt Chaiseagail watercourses. In addition, incidental observations of salmonid species were regularly recorded within sections of these watercourses (**Figure 7.2.1: Ref. F1, F2, F3** and **F4**).

Freshwater Pearl Mussel

3.2.26 Suitable habitat was identified within Allt a' Breac-leathaid, Feith Osdail and Allt Chaiseagail watercourses. In addition, known populations are present in the River Tirry[50] which collects the above watercourses. Therefore, there may be a likelihood that populations exist within these watercourses due to the accessibility of these reaches to salmonid host species.

Invertebrates

3.2.27 The range of habitats present along the Proposed Development site, specifically areas of woodland, scrub and moorland habitat present optimal conditions for terrestrial invertebrates.

3.2.28 Aquatic invertebrates are likely to inhabit the majority of watercourses and waterbodies that overlap the Proposed Development.

Invasive Non-Native Species

3.2.29 No invasive, non-native plant species were recorded during the suite of species-specific site surveys.

3.2.30 No evidence or observations of invasive non-native animals were recorded during the suite of species-specific surveys.

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[49] Froglife (1999). Froglife Advice Sheet 10. Reptile Survey: *An introduction to planning, conducting and interpreting survey for snake and lizard conservation.* Available at: https://cieem.net/resource/froglife-advice-sheet-10-reptile-survey/ [Accessed January 2024]

[50] https://kylefisheries.org/current-projects/ [Accessed January 2024]

4. CONCLUSION

4.1.1 Existing ecological data and targeted protected species survey data were used to consolidate assumptions based on field evidence for a range of protected and notable species and their assumed or confirmed presence along the Proposed Development. The following species, or habitats to support them, have been identified along the Proposed Development:

- bats;
- badger;
- red squirrel;
- pine marten;
- otter;
- water vole;
- reptiles;
- amphibians;
- fish; and
- freshwater pearl mussel;

4.1.2 All assessments should be made with reference to the nature conservation legislation and policy that protects them, as outlined in **Chapter 7** of the EA.

Annex A- Figures

Figure 7.2.1: Protected Species Survey Results

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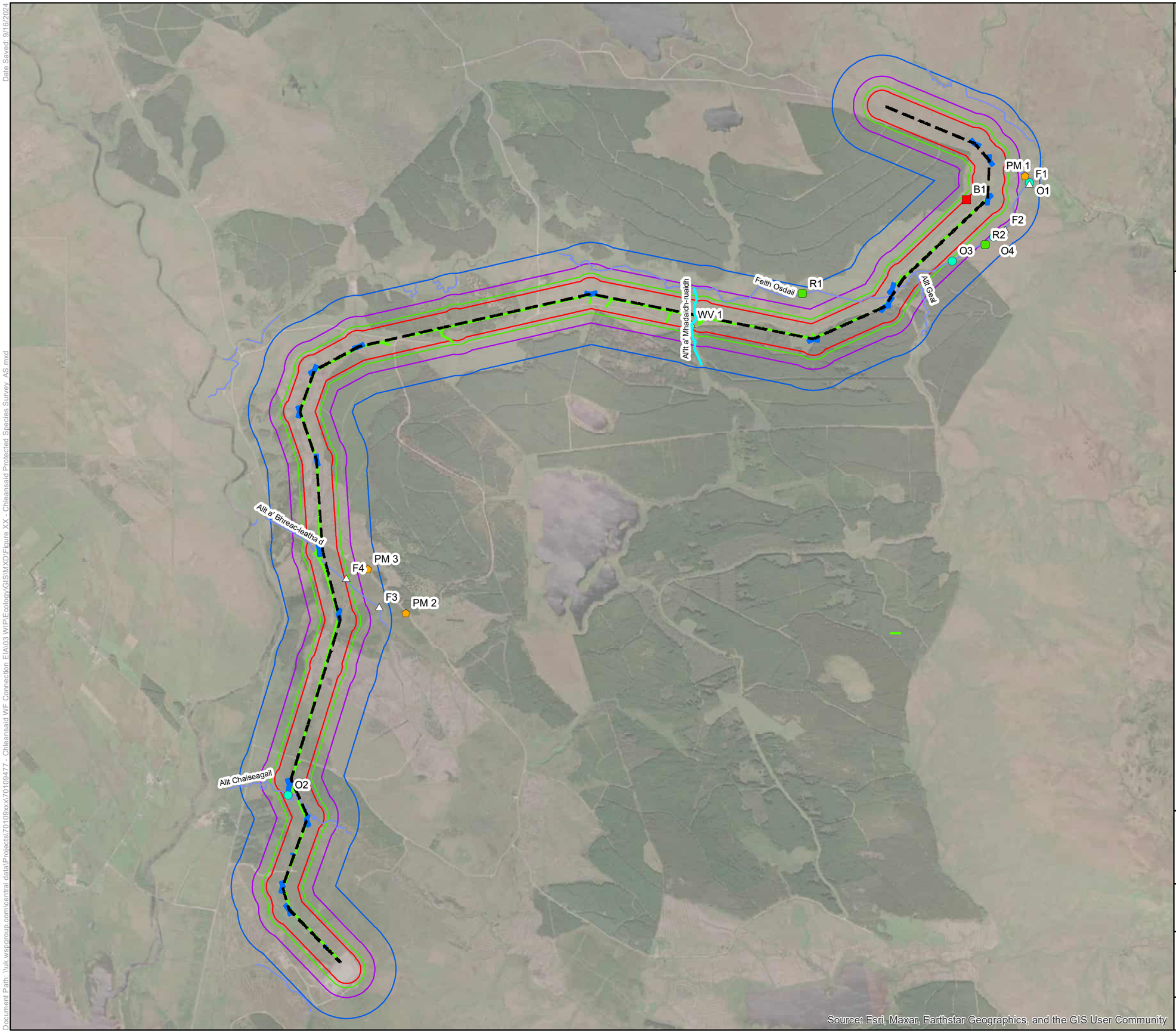

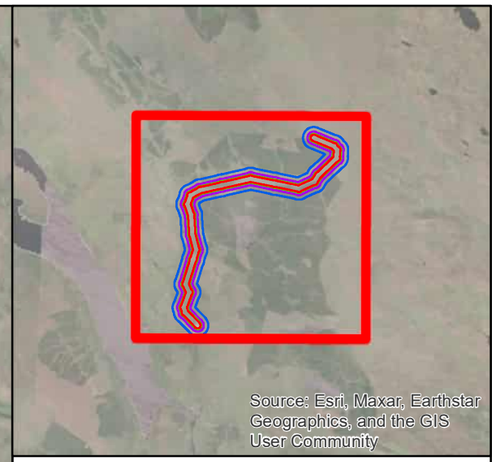

Key:

- Proposed Alignment
- Proposed Development LoD
- Proposed Pulling Position
- Temporary Access (proposed open ground/temporary trakway system)
- 250m buffer
- 100m buffer
- 30m buffer
- Fish
- Reptile
- Pine marten
- Water vole
- Bat
- Otter
- Watercourse

Client: Scottish & Southern Electricity Networks

Project: Chleansaid Wind Farm 132 kV OHL Connection

Title: Figure 7.2.1
Protected Species Results
Page 1 / 5

Date: Monday, September 16, 2024 Scale: 201,414 @ A3
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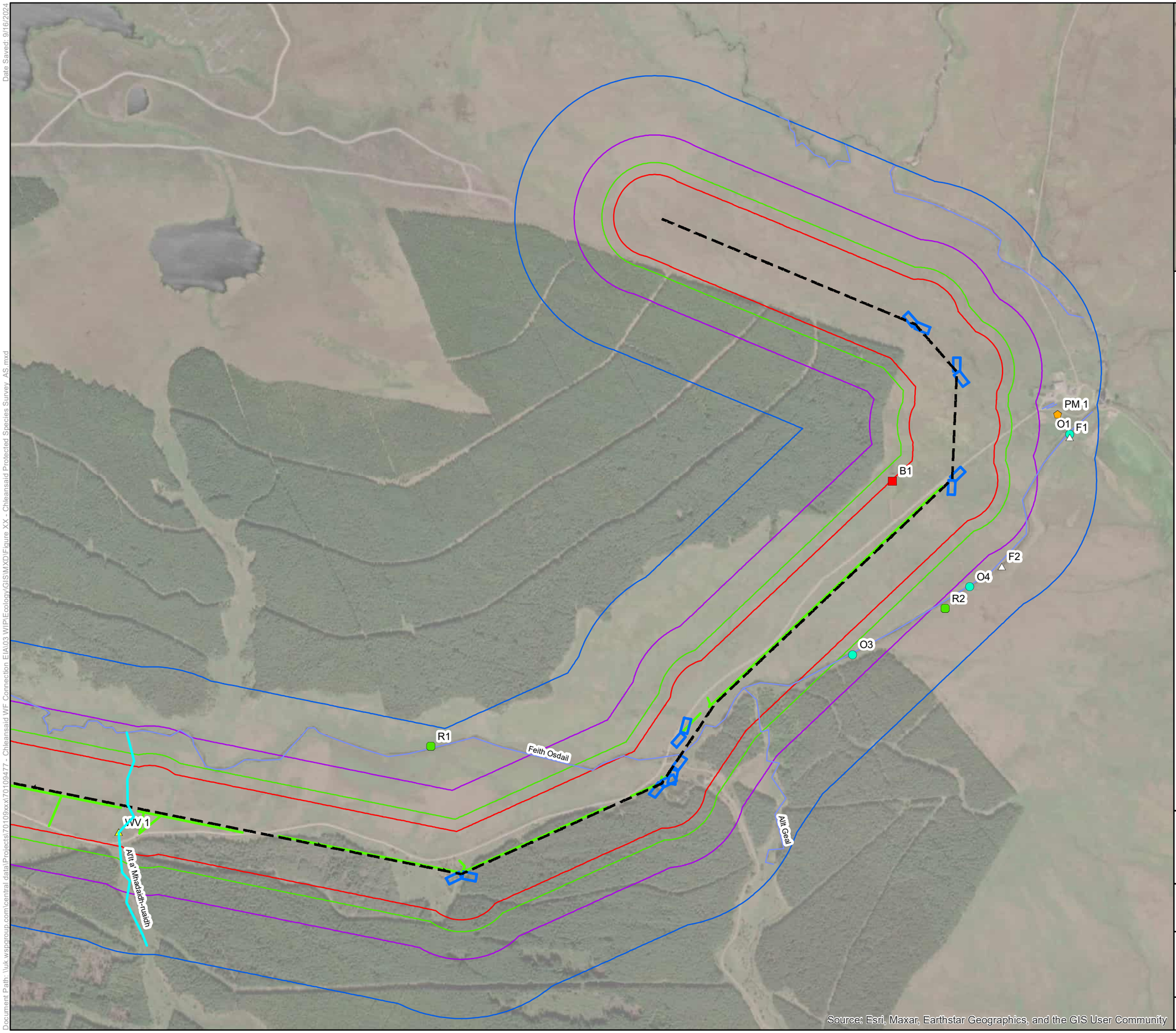

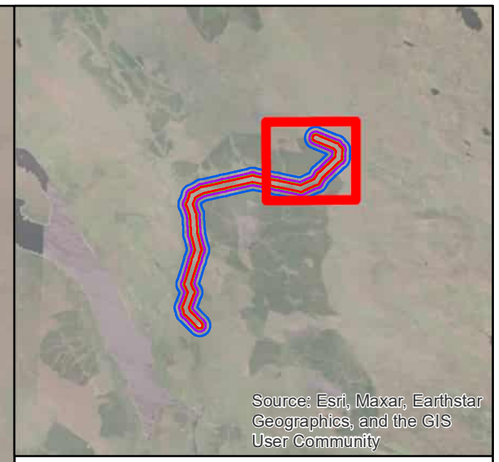

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Project: Chleansaid Wind Farm 132 kV OHL Connection

Title: Figure 7.2.1 Protected Species Results

Page 2 / 5

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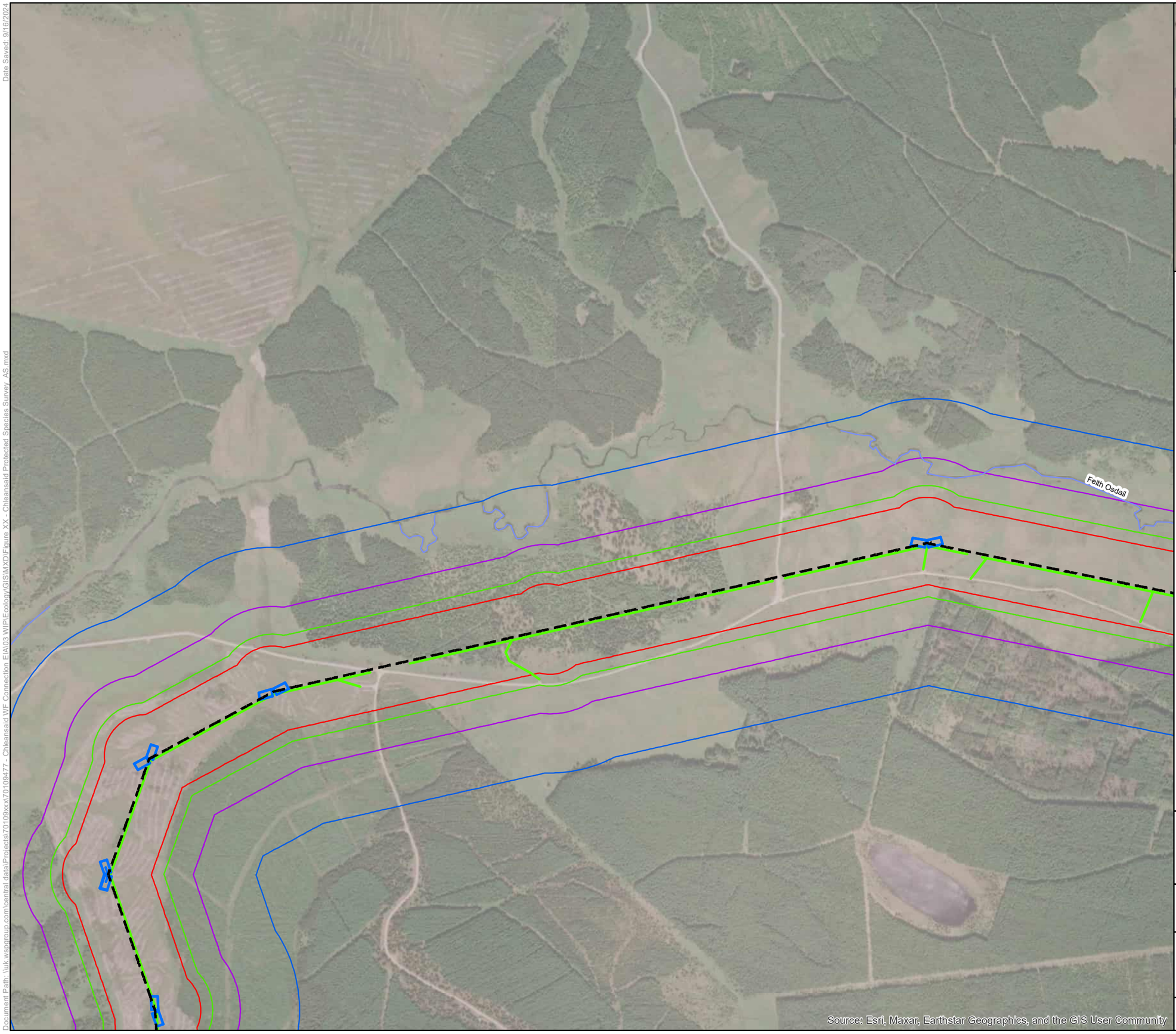

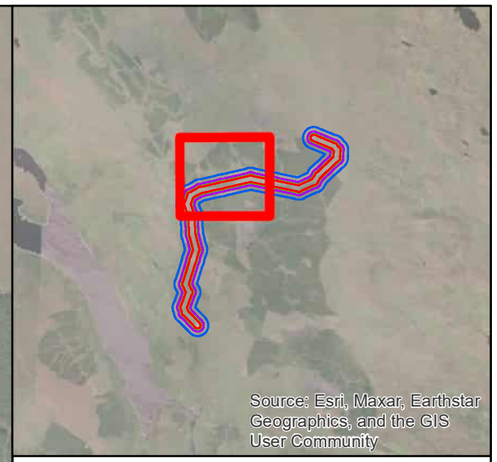

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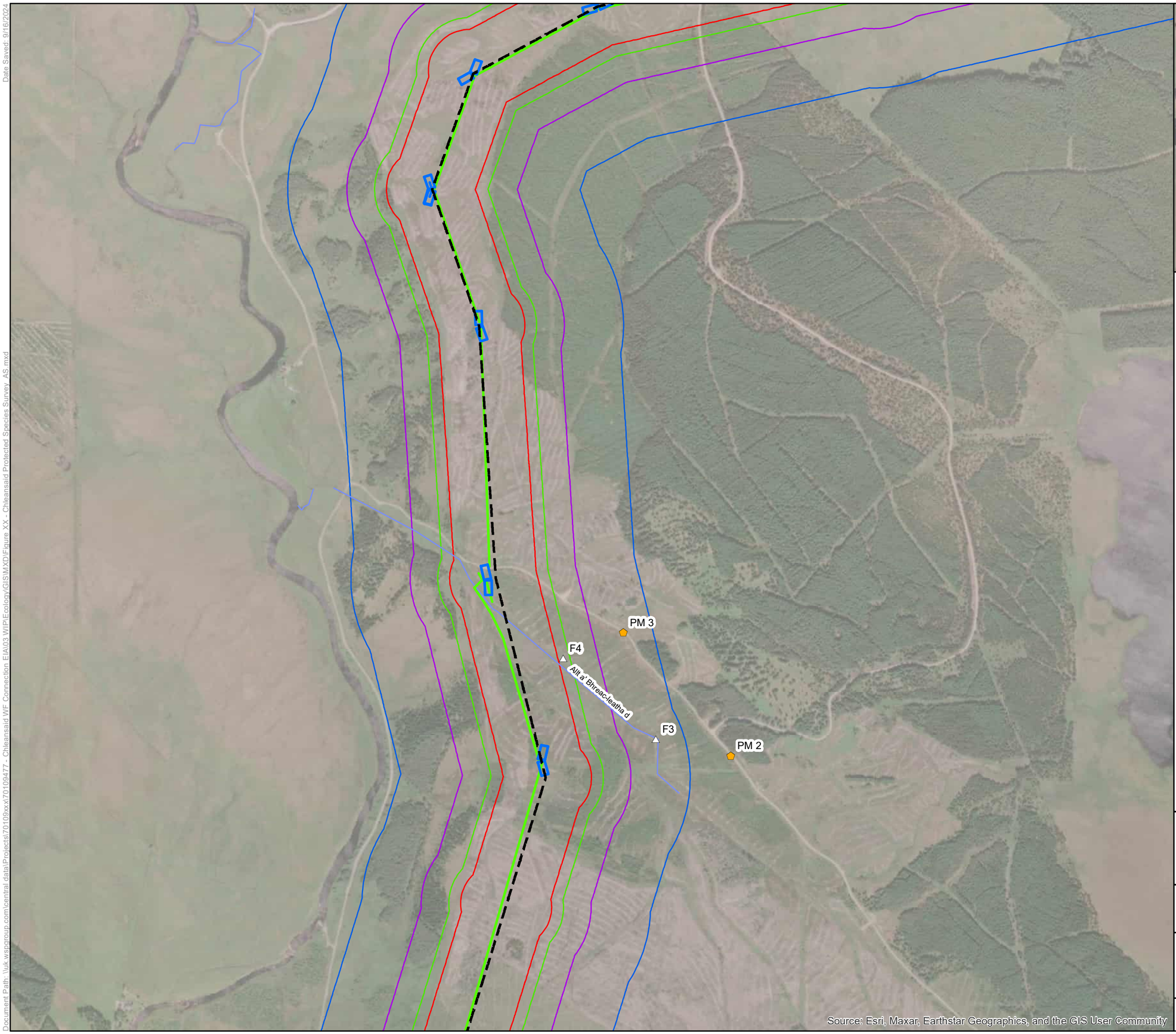

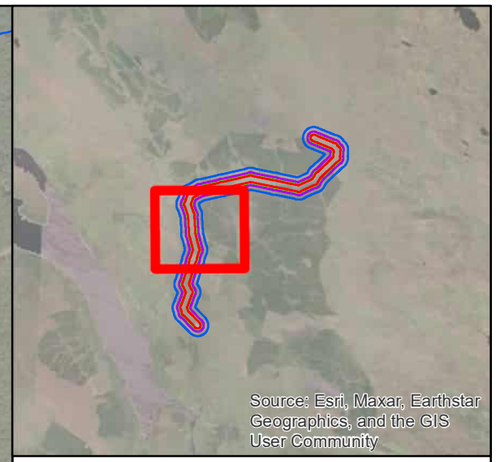

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Client: Scottish & Southern Electricity Networks

Project: Chleansaid Wind Farm 132 kV OHL Connection

Title: Figure 7.2.1
Protected Species Results
Page 4 / 5

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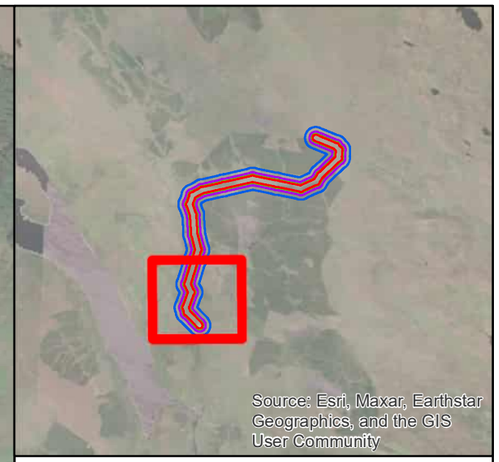
O2

Alt Chaiseagail



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- Pine marten
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- Bat
- Otter
- Watercourse

Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

Client: Scottish & Southern Electricity Networks

Project: Chleansaid Wind Farm 132 kV OHL Connection

Title: Figure 7.2.1 Protected Species Results

Date: Monday, September 16, 2024 Scale: 201,414 @ A3

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Annex B – Target Notes and Observation Data

Table A-1: Target Notes

Target Note	Details
B1	Two transitional roosts (common pipistrelle and pipistrelle species) within stone barn
O1	Single dry spraint on rock
O2	Two dry spraints on rock
O3	Two spraints on rock one dry one wet.
O4	Single dry spraint on rock
WV1	Five mammal holes of size and shape suitable for water vole with runs connecting the burrows to latrines and feeding stations
PM1	Disused barn associated with farm buildings with multiple entry points into the internal of the building
PM2	Potential pine marten scat on forestry track
PM3	Potential pine marten scat on forestry track
R1	Adder basking
R2	>30 basking lizards seen within 100 m stretch along canalised section of water course
F1	Trout feeding and using undercut banking for shelter.
F2	Weir with pool below holding a number of feeding fish including fish over parr size.
F3	Salmonid parr >10 seen in pool area.
F4	Undercut banking salmonid parr present.