Redshaw 400kV Substation

Environmental Impact Assessment Report

Ecological Appraisal Report

May 2025

Land & Planning

Contents

Chapter 1
Introduction

Background

1.1 LUC was commissioned in 2019 by Scottish Power Transmission plc ('**SPT**') (hereafter referred to as the '**Applicant**') to conduct an initial strategic optioneering study to identify potential substation search areas within South Lanarkshire based on technical and environmental considerations.

1.2 The Applicant is required to reinforce the network to facilitate future connections and ensure the network remains fit for purpose. The new substation will accommodate the planned and potential generation in the area and provide security to existing electricity supplies and will give more reliability to the network and ensure power continuity.

1.3 The optioneering process identified several potentially suitable sites within the Redshaw area which were taken forward for a substation siting study (Redshaw 400kV Substation Siting Study[1]) undertaken in March 2023 and a further technical review and an appraisal (Redshaw 400kV Substation Appraisal Supplementary Report[2]) undertaken in May 2023. All proposed options were subject to detailed technical, environmental, and economic assessment. The Redshaw site (See **EIA Figure 1.1: Site Location**) in South Lanarkshire emerged as the preferred option.

1.4 LUC was subsequently commissioned to prepare an Environmental Impact Assessment Report ('**EIA Report'**) and supporting technical reports to be submitted alongside a planning application under Section 32 of the Town and Country Planning (Scotland) Act 1997 as amended[3], to construct and keep installed, a new 400 kilovolt ('**kV**') /132kV substation at Redshaw, South Lanarkshire (the 'Proposed Development') to meet the requirement for future expansion and accommodation of planned renewable energy projects and potential connections in the area.

1.5 The Proposed Development will help to reinforce the transmission network in the area, of which an anticipated 2 gigawatts ('**GW**') of renewable energy will be connected to the

[1] A document which outlines the methodology and findings of the siting study which has been undertaken to inform consultation, as well as the details of the public consultation process (2023). Available [online] at: https://www.spenergynetworks.co.uk/userfiles/file/11980_Redshaw%20400kV_Substation_%20Siting%20Study_03_04_23_inc_Figures_pdf_compressed.pdf [accessed 02/05/2025]. Available [online] at

[2] A supplementary document that details the methodology and findings relating to the identification of Substation Siting Area 4 (SS4) (2023). Available [online] at: https://www.spenergynetworks.co.uk/userfiles/file/Redshaw_400kV_Appraisal_Report_Supplementary_Report.pdf [accessed 02/05/2025]

[3] Town and Country Planning (Scotland) Act 1997 as amended https://www.legislation.gov.uk/ukpga/1997/8/contents [accessed 26/05/2025]

area in the future, and provide a more reliable fit for purpose and economical transmission network.

1.6 An EIA Scoping Report[4] was submitted to South Lanarkshire Council ('**SLC**') in December 2023 to request a Scoping Opinion under the Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017 ('the **EIA Regulations'**), as to the environmental effects to be considered in the Environmental Impact Assessment ('**EIA**'). This process confirmed that no likely significant effects of the Proposed Development on Ecology were predicted, therefore this topic has not been subject to further detailed assessment in relation to the EIA process.

1.7 This Ecological Appraisal has been prepared as a standalone Report (separate to the EIA Report) to support the application for planning permission to demonstrate legal and policy compliance during the design process, and to identify appropriate mitigation measures for the construction stage. In addition, Section 5 of this report provides an appraisal of Likely Significant Effects of the Proposed Development on the Favourable Conservation Status of the Special Areas of Conservation ('**SAC**'), Special Protection areas ('**SPA**') and Ramsar sites in line with the Habitats Regulations Appraisal process.

1.8 Further background information is provided within **Redshaw 400kV Substation EIA Report EIA Volume 2: Chapter 1 – Introduction**.

Supporting Information

1.9 The Ecological Appraisal has been undertaken by LUC and is informed or supported by the following reports:

- **Redshaw 400kV Substation EIA Report:**
  - **EIA Volume 2: Chapter 1 – Introduction.**
  - **EIA Volume 2: Chapter 2 – Site Selection and Design Strategy.**
  - **EIA Volume 2: Chapter 3 – Development Description.**
  - **EIA Volume 2: Chapter 6 – Hydrology and Hydrogeology.**
- **Redshaw 400kV Substation EIA figures:**
  - **EIA Report - Figure 1.1: Location Plan.**
  - **EIA Report - Figure 1.2: Cumulative Developments.**
  - **EIA Report - Figure 3.1: General Existing Site Plan.**
  - **EIA Report - Figure 3.2: Proposed Site Plan.**
  - **EIA Report - Figure 3.3: Outline Landscape Mitigation and Biodiversity Enhancement Plan ('OLMBEP').**

1.10 This Ecological Appraisal should also be read in conjunction with the following appendices and figures:

- **Appendix A: Figures:**
  - Figure 1: Statutory and Non-Statutory Designated Nature Conservation Sites.
  - Figure 2: Phase 1 Habitat Map.
  - Figure 3: Protected Species Map.
  - Figure 4: Badger Survey Map (Confidential).
- **Appendix B: Ecology Survey Site Photographs.**
- **Appendix C: Confidential Badger Survey Results.**
- **Redshaw 400kV Substation Biodiversity Net Gain Report[5].**

Key Legislation, Policy and Guidance

1.11 The protections afforded to ecological features in Scotland are enshrined in the following key legislation:

- The Conservation of Habitats and Species Regulations 2017 (as amended)[6];
- The Conservation (Natural Habitats, &c.) Regulations 1994 (as amended)[7];
- The Wildlife and Countryside Act 1981 (as amended)[8]; and
- The Protection of Badgers Act 1992 (as amended)[9].

1.12 This appraisal is carried out in accordance with the principles contained within the following relevant nature conservation policy that creates a mechanism for locally-

[4] LUC (2023) Redshaw Substation Scoping Report. Available [online] at: https://www.spenergynetworks.co.uk/userfiles/file/SCOPING_REPORT-5440750.pdf [accessed 20/05/2025]
[5] LUC (2025) Redshaw 400kV Substation Biodiversity Net Gain Report
[6] The Conservation of Habitats and Species Regulations 2017 (as amended). Available [online] at: https://www.legislation.gov.uk/uksi/2017/1012/contents [accessed 20/05/2025]
[7] The Conservation (Natural Habitats &c.) Regulations (1994) (as amended). Available [online] at: https://www.legislation.gov.uk/uksi/1994/2716/contents [accessed 20/05/2025]
[8] The Wildlife and Countryside Act 1981 (as amended). Available [online] at: https://www.legislation.gov.uk/ukpga/1981/69/contents [accessed 20/05/2025]
[9] Protection of Badgers Act 1992 (as amended). Available at: https://www.legislation.gov.uk/ukpga/1992/51/contents [accessed 20/05/2025]

designated sites, habitats, and species of conservation interest:

- The Scottish Biodiversity List ('**SBL**')[10]; and
- South Lanarkshire Biodiversity Strategy 2024 – 2030[11].

1.13 Relevant guidance that has informed the methods adopted in this appraisal includes:

- NatureScot (2023) Advising on peatland, carbon-rich soils and priority peatland habitats in development management[12]; and
- SEPA (2024) Guidance on Assessing the Impacts of Developments on Groundwater Dependent Terrestrial Ecosystems[13].

Scope of Appraisal

1.14 This Ecological Appraisal report details the baseline ecological conditions, based on desk-based studies and a comprehensive field survey. A description of potential ecological effects, together with proposed mitigation and enhancement measures, are also provided.

1.15 The following construction phase effects were identified for consideration in the appraisal:

- Direct habitat loss of, disturbance to, and/or severance of statutory and non-statutory designated sites for nature conservation purposes;
- Direct habitat loss/severance and/or disturbance of habitats of conservation concern (defined as Annex I Habitats[14], habitats listed on the SBL[10], habitats listed on the South Lanarkshire Biodiversity Strategy[11], priority peatland habitats[12] and habitats with potential to be Groundwater Dependent Terrestrial Ecosystems ('**GWDTE**')[13].; and
- Direct habitat loss/severance, disturbance and/or, mortality of protected species (as defined by legislation[7,8,9]).

1.16 The operational effects on terrestrial ecology were not considered during this appraisal as operational activities will not result in additional loss or disturbance of habitats of conservation concern, and it is unlikely that disturbance/mortality of protected species will be experienced as a consequence of the Proposed Development's operation.

1.17 The effects of decommissioning are not considered in this report; however, they are likely to be similar in nature to construction effects. A method statement will be prepared and agreed with the relevant statutory consultees prior to decommissioning. **EIA Volume 2 - Chapter 3** provides further commentary regarding decommissioning.

1.18 This Ecological Appraisal has been prepared to demonstrate compliance with legislation in relation to terrestrial ecology. The appraisal also uses baseline ecological data, and the assessment of potential effects with associated mitigation and enhancement measures, to demonstrate compliance of the Proposed Development with national and local planning policy and guidance regarding biodiversity.

1.19 Ornithological interests are scoped out of the EIA (See **EIA Chapter 1**).

Site Description

1.20 The proposed site (the '**Site**') is located in proximity to the existing 400kV Scotland to England interconnector (ZV route) at Redshaw, approximately 3.5 kilometres ('**km**') south-east of Douglas within SLC area. The Site location is shown on **EIA Figure 1.1**.

1.21 The Site is bound to the east by the M74 motorway, to the west by the B7078 public road. Several wind farms are present in the landscape around the Site, including Andershaw and Middle Muir to the south-west, and further wind farms beyond the village of Douglas to the north-west.

1.22 The Site is dominated by improved grassland that appears to have been subject to grazing. The south-east of the Site includes a small water course/field drain that is largely covered by over-hanging vegetation dominated by soft rush. In places the vegetation around the channel is more open and exposes small pools of open water. A small area of marshy grassland is also present in the south-east corner of the Site.

1.23 Within the west of the Study Area (external to the Site) a coniferous plantation dominated by Norway spruce was recorded, and this is included in the Ancient Woodland

[10] NatureScot (2020) Scottish Biodiversity List. Available [online] at: https://www.nature.scot/scotlands-biodiversity/scottish-biodiversity-strategy/scottish-biodiversity-list [accessed 20/05/2025]
[11] South Lanarkshire (2024) South Lanarkshire Biodiversity Strategy 2024 – 2030. Available [online] at: https://www.southlanarkshire.gov.uk/downloads/file/16574/biodiversity_strategy_2024_-_2030 [accessed 20/05/2025]
[12] NatureScot (2023) Advising on peatland, carbon-rich soils and priority peatland habitats in development management. Available at: https://www.nature.scot/doc/advising-peatland-carbon-rich-soils-and-priority-peatland-habitats-development-management [accessed 20/05/2025]
[13] SEPA (2024) Guidance on Assessing the Impacts of Developments on Groundwater Dependent Terrestrial Ecosystems. Available [online] at: https://www.sepa.org.uk/media/i2cnr03k/guidance-on-assessing-the-impacts-of-developments-on-groundwater-dependent-terrestrial-ecosystems.docx [accessed 20/05/25]
[14] List of Annex I Habitats available [online] at: https://sac.jncc.gov.uk/habitat/ [accessed 20/05/2025], as per The Conservation (Natural Habitats &c.) Regulations (1994) (as amended)

Inventory ('**AWI**')[15] as being Long Established of Plantation Origin ('**LEPO**'). The wider landscape is dominated by improved and semi-improved grasslands and there also appear to be heath habitats present.

Proposed Development

1.24 The Proposed Development comprises the following:

- A new 400kV Gas Insulated Switchgear ('**GIS**') substation building which will house gas insulated electrical switchgear and plant (approximately 91m x 30m x 12m).
- A new 132kV GIS substation building which will house gas insulated electrical switchgear and plant (approximately 56m x 17.5m x 10.8m).
- A small distribution 33kV Grid Supply Point ('**GSP**') substation building to provide ancillary power, lighting, heating and ventilation.
- External grid transformers.
- A new permanent access track from local public road (B7078) to the substation compound.
- Internal access roads and parking provision.
- Security fence around the live compound.
- Drainage works.
- Landscaping works.
- Temporary construction compound, laydown areas and associated temporary construction works; and
- Proposed farmers access track.

1.25 Approximately 6 years are anticipated to be required for construction of the Proposed Development including phased commissioning. An indicative construction programme can be found in **EIA Volume 2 - Chapter 3.** It is anticipated that construction of the Proposed Development will commence in November 2025 (following successful receipt of consent). Following the operational period, the Proposed Development will be fully decommissioned, or an application may be made to extend its operational life or to re-equipped with new upgraded equipment and refurbished.

1.26 Full details of the Proposed Development are provided in **EIA Volume 2 - Chapter 3.**

Study Area

1.27 The Study Area adopted in this appraisal varies by desk and field survey and ecological feature, as defined by best practice[16]. Study Areas are detailed in **Table 1.1.**

Table 1.1 Ecological Study Area Description

Ecological Feature	Buffer from Site Boundary
Desk Study	
Statutory Designated Sites To include: ■ European Sites (SACs and SPAs). ■ Ramsar Sites. ■ National Nature Reserves ('**NNRs**'); and ■ Sites of Special Scientific interest ('**SSSIs**').	Redline boundary of the Site and 5km buffer (See **Appendix A, Figure 1**).
Non-Statutory Designated Sites To include: ■ Local Nature Conservation Sites ('**LNCS**'). ■ Local Nature Reserve ('**LNR**').	Redline boundary of the Site and 1km buffer (See **Appendix A, Figure 1**).

[15] NatureScot 'Ancient Woodland Inventory'. Available [online] at: https://opendata.nature.scot/datasets/ancient-woodland-inventory/explore [accessed 05/05/2025]

[16] CIEEM (2021) Good Practice Guidance for Habitats and Species. Version 3. Available [online] at: https://cieem.net/wp-content/uploads/2021/05/Good-Practice-Guide-2023-edit.pdf [accessed 05/05/2025]

Ecological Feature	Buffer from Site Boundary
■ Royal Society for the Protection of Bids ('**RSPB**') and Scottish Wildlife Trust Reserves; and ■ Ancient/Long-Established Woodland.	
Existing Records of Deep Peat and Carbon Rich Soils	Redline boundary of the Site and 1km buffer (See **Appendix A, Figure 1**).
Existing Records of Protected Species[7,8,9].	Redline boundary of the Site and 1km buffer (See **Appendix A, Figure 1**).
Field Survey	
Habitat and Vegetation Surveys (including GWDTEs)	Redline boundary of the Site and a buffer up to 250m where survey methods dictate.
Protected Species[7,8,9]	Redline boundary of the Site and a buffer up to 200m where survey methods dictate.

Chapter 2
Methodology

Desk Study

2.1 A desk study was conducted to identify existing records of designated sites, protected species and notable species (defined as those species listed on the SBL[10] and/or on the South Lanarkshire Biodiversity Strategy[11]) within the Study Area. SLC is not currently covered by a Local Environmental Records Centre; therefore, the following information sources were used during the desk study:

- NatureScot Site Link tool[17].
- Scotland's Environment Web[18].
- Multi-Agency Geographic Information for the Countryside ('**MAGIC**'))[19].
- South Lanarkshire Council Biodiversity Strategy[20].
- South Lanarkshire Council list of Local Nature Conservation Sites (Non-statutory designated sites)[21].
- National Biodiversity Network ('**NBN**')) Atlas Scotland under CC-BY licence[22].
- Ancient Woodland Inventory[23].

Field Survey

Extended Phase 1 Habitat Survey

2.2 An Extended Phase 1 Habitat Survey was completed by an experienced ecologist in accordance with Phase 1 Habitat Survey methodology[24] on 17th August 2023 in warm, sunny, and dry weather conditions. An update survey was completed

[17] NatureScot. 'SiteLink' Available [online] at: https://sitelink.nature.scot/home [accessed 05/05/2025]
[18] Scottish Government 'Scotland's Environment Web Map' Available [online] at: http://map.environment.gov.scot/sewebmap/ [accessed 05/05/2025]
[19] Department for Environment, Food and Rural Affairs *et al* (n.d.). Multi-Agency Geographic Information for the Countryside Available [online] at: http://magic.defra.gov.uk [accessed 07/01/2025]
[20] South Lanarkshire Council 'Biodiversity Strategy 2024-2030 Available [online] at: https://www.southlanarkshire.gov.uk/downloads/file/16574/biodiversity_strategy_2024_-_2030 [accessed 05/05/2025]
[21] South Lanarkshire Council 'Conservation Sites' Available [online] at: https://www.southlanarkshire.gov.uk/info/200191/conservation/1566/conservation_sites [accessed 05/05/2025]
[22]NBN Atlas Partnership 2024 'NBN Atlas Scotland' Available [online] at: https://scotland.nbnatlas.org/ [accessed 05/05/2025]
[23]Scottish Government (19 June 2024) 'Ancient Woodland Inventory (Scotland)' Available [online] at: https://www.data.gov.uk/dataset/c2f57ed9-5601-4864-af5f-a6e73e977f54/ancient-woodland-inventory-scotland [accessed 05/05/2025]
[24] JNCC (2010) Handbook for Phase 1 Habitat Survey – a technique for environmental audit. Available [online] at: https://data.jncc.gov.uk/data/9578d07b-e018-4c66-9c1b-47110f14df2a/Handbook-Phase1-HabitatSurvey-Revised-2016.pdf [accessed 20/05/2025]

on 11th September 2024 in overcast but mild weather conditions.

2.3 The survey was undertaken to identify and record all natural and semi-natural habitats located within the Study Area with particular attention given to habitats of conservation concern[14]. The Phase 1 Habitat Survey method provides a rapid and standardised approach to documenting and classifying broad habitat types and recording associated floral species (including Invasive Non-Native Species ('**INNS**')).

2.4 Where potential habitats of conservation concern were identified, a National Vegetation Classification ('**NVC**') survey should be conducted; this survey method is also used to identify habitats which are potentially GWDTE. However, no habitats of conservation concern were noted, and therefore no NVC survey was required.

2.5 The survey was extended to include an assessment of the habitats within the Study Area to support notable and/or protected species[7]. Where direct evidence of protected species was identified, this was recorded and photographed, in line with species-specific survey best practice.

2.6 Where potentially suitable habitats for protected species were identified, surveys were undertaken for these species. Methods adopted are provided below.

Preliminary Bat Roost Assessment

2.7 A Preliminary Bat Roost Assessment ('**PBRA**') survey was undertaken on all trees within the Study Area and comprised two components: a desk study and a field study. The survey was designed to identify and assess features which may provide suitable roosting opportunities for bats, and therefore require targeted survey effort.

2.8 The desk study for the PBRA involved a search of publicly available records of bats as previously outlined.

2.9 The field survey included a Daytime Bat Walkover ('**DBW'**) and a Ground Level Tree Assessment ('**GLTA**') of trees within the Study Area. These were completed on 17th August 2023 in accordance with the Bat Conservation Trust standard guidelines ('**BCT**')[25]. An update survey was undertaken on 11th September 2024.

2.10 This method considers the range of roosting conditions required by bats throughout the year and follows assessment criteria. No buildings or structures were present within the survey area. The criteria used to categorise Bat Roost Potential ('**BRP**') in relation to trees are summarised in **Table 2.1** below. The table also summarises what actions, if any, are required following classification.

Table 2.1 Bat Roost Suitability Categories - Trees

Suitability	Description	Survey requirement
Potential Roost Feature – Individual ('**PRF-I'**') *[Previously Low category]*	PRF is only suitable for individual bats or very small numbers of bats either due to size or lack of suitable surrounding habitats.	No further surveys. Provide appropriate compensation for all PRF-Is.
Potential Roost Feature – Multiple ('**PRF-M'**') [*Previously Moderate or High category*]	PRF is suitable for multiple bats and may therefore be use by a maternity colony.	Three visits between May and September, with at least two of the surveys between May and August.

[25] Collins, J. (ed.) (2023) Bat Survey Guidelines for Professional Ecologists: Good Practice Guidelines (4th Edition). The Bat Conservation Trust, London. Available [online] at: https://cdn.bats.org.uk/uploads/pdf/Resources/For-professionals/Bat-Survey-Guidelines-4th-edition-AMENDED-27.03.24.pdf?v=1711530492 [accessed 20/05/2025]

Badger

2.11 A badger survey was undertaken on 17th August 2023 within the Study Area in accordance with best practice guidelines[16,26]. An update survey was undertaken on 11th September 2024. Surveys sought to identify suitable habitat for, and direct evidence of, badgers. Suitable habitat included sheltered areas with free-draining soils; normally woodland, scrub or mosaics that incorporate these habitat types. Where suitable habitat was identified, direct evidence was searched for, including:

- Badger setts (as defined in **Table 2.2**).
- Tracks, prints, and paths (including scratched logs and fallen wood).
- Guard hair.
- Latrines and dung pits (categorised as fresh, recent, or old).
- Snuffle holes (i.e., surface foraging); and
- Feeding remains.

Table 2.2 Badger Sett Definitions

Sett Type	Definition
Main	These usually have a large number of entrances with large spoil heaps. The sett generally looks well used. They may have well used paths to and from the sett and between sett entrances.
Annexe	These usually have a large number of entrances with large spoil heaps. The sett generally looks well used and is connected to the main sett by clear tracks and paths.
Subsidiary	These setts often only have a few entrances and are located at least 50m from a main sett. They are not continuously active, and evidence may be limited.
Outlier	These setts may have only one or two entrances with little spoil. Used sporadically, these setts often show little signs of use.

2.12 Where setts were identified, the total number of entrances were recorded, and the above-ground area occupied by the sett mapped. Each entrance was inspected for signs of current use.

2.13 According to current legislative provisions, 'badger setts' are legally defined as active when they show multiple 'signs of current use.' Signs of current use include:

- Well used sett entrances (smooth, well-worn, and lacking vegetation);
- Fresh or maintained spoil heaps (i.e. lacking vegetation growth);
- Fresh or maintained tracks and paths in and around the sett;
- Accumulations of bedding material in sett entrance or spoil heaps;
- Guard hair in sett entrance or spoil heaps;
- Fresh prints on tracks, paths, spoil heaps and sett entrances; and
- Feeding remains.

2.14 Following an investigation of each sett and its entrances, surveyors determined the 'active current use' status of the sett. Based on evidence and professional judgement, setts were either:

- Well used.
- Partially used (i.e., only some entrances show signs of current use).
- Disused (evidence suggests that the sett has not been used recently and/or has been abandoned.

2.15 It should be noted that badgers use a number of setts across their territorial area. It is common that smaller, outlier setts may not be used for prolonged periods of time and, as such, field evidence may be lacking. Applying the precautionary principle, setts are only classified as 'disused' if

[26] Scottish Badgers (2018) Surveying for Badgers: Good Practice Guidelines. Version 1. Available [online] at: Surveying-for-Badgers-Good-Practice-Guidelines_V1-2020-2455979.pdf [accessed 20/05/2025]

they showed structural decay that would prevent badgers from entering and sheltering in them without significant excavation.

Red Squirrel and Pine Martin

2.16 Due to similarities in the habitat requirements for these species, field surveys for pine marten and red squirrel were conducted simultaneously.

2.17 A survey for red squirrel was undertaken on 17th August 2023 in accordance with best practice guidelines[27,28], to assess suitability of habitats within the Study Area for the species. An update survey was undertaken on 11th September 2024

2.18 Suitable habitat includes cone-bearing coniferous plantation woodland located on free-draining soils, with good connectivity to other woodland habitats. Where suitable red squirrel habitat was recorded, searches for foraged cones, dreys and tracks/prints were undertaken.

2.19 A survey for pine marten was undertaken on all potentially suitable habitats within the Study Area in accordance with best practice guidelines[29,30] to assess habitats for their suitability to support the species, while searching for indicative field signs such as feeding remains, scat, footprints, and dens.

2.20 During the survey, competent field ecologists walked the Study Area, noting all habitat with potential to support each species. This extended to the conifer plantation in the west of the Study Area. Within suitable habitat, direct evidence of each species was searched for, as listed below in **Table 2.3**.

Table 2.3 Red Squirrel and Pine Martin Field Signs

Field Signs	Red Squirrel	Pine Marten
	Foraged cones (diagnostic)[31]	Scat (including age classification)
	Dreys (non-diagnostic)[31]	Dens
	Tracks and prints	Tracks and prints

Water Vole

2.21 Surveys for suitable habitat for, and direct evidence of, water vole was undertaken following good practice survey methods[32]. Surveys were undertaken on 17th August 2023, completed by competent field ecologists and all suitable watercourses and waterbodies within the Study Area were visited. An update survey was undertaken on 11th September 2024.

2.22 Watercourses were classified for their suitability to support water vole depending on a variety of characteristics including bankside composition, substrate, water flow rate and bankside vegetation. Descriptions of watercourse suitability categories are detailed in **Table 2.4**.

Table 2.4 Water Course Suitability for Water Vole

Suitability	Description
Optimal	These watercourses will typically have a very slow flow rate and will comprise peaty bankside and substrate. Banksides will also comprise tussocky vegetation, including rushes (a common food source of water vole). The watercourses will generally be deep to enable predatory escape.

[27]Gurnell, J., Lurz, P., McDonald, R. and Pepper, H. (2009). 'Practical Techniques for Surveying and Monitoring Squirrels'. Forestry Commission Available [Online] at: https://cdn.forestresearch.gov.uk/2009/09/fcpn011.pdf [accessed 05/05/2025].

[28] NatureScot (n.d.). 'Protected Species Advice for Developers: Red Squirrel' Available [Online]. at: https://www.nature.scot/sites/default/files/2018-09/Species%20Planning%20Advice%20-%20red%20squirrel.pdf [accessed 05/05/2025].

[29] Cresswell, W.J., Birks, J.D.S., Dean, M., Pacheco, M., Trewhella, W.J., Wells, D. and Wray, S. (2012). 'UK BAP Mammals: Interim Guidance for Survey Methodologies, Impact Assessment and Mitigation. The Mammal Society' Southampton.

[30] NatureScot (n.d.). 'Protected Species Advice for Developers: Pine Marten' Available [Online] at: https://www.nature.scot/sites/default/files/2018-09/Species%20Planning%20Advice%20-%20pine%20marten.pdf [accessed 05/05/2025].

[31] Foraged cones are diagnostic of squirrel presence as, where the foraging sign can be confidently assigned to squirrel activity as opposed to other small mammals, this demonstrates recent usage of the Site by squirrel. Potential dreys noted from the ground do not confirm squirrel presence as this does not in itself confirm recent activity.

[32] Strachan, R. & Moorhouse, T. (2006). 'Water Vole Conservation Handbook 2nd Edition' Wildlife Conservation Research Unit, University of Oxford, Oxford.

Suitability	Description
Sub-Optimal	Typically, these watercourses will have a relatively slow flow rate. Banksides may be peaty but may not be very steep, therefore not allowing burrows to account for varying water levels. Rushes will be present, providing foraging resource.
Suitable	Banksides may comprise earth allowing for some burrowing. Herbaceous vegetation will generally be lacking, and invertebrates, amphibians and fish will be sparse. Flow rate will be slow to moderate; however, watercourse may comprise rocky substrate.
Unsuitable	Watercourses will comprise rock and stone substrate and banksides. The flow rate will be moderate or fast flowing and rushes will be absent from bankside vegetation.

2.23 Where watercourses were considered suitable, these were surveyed with the aim of identifying and recording presence of water vole. Ecologists searched for evidence of suitable habitat for, and direct evidence of water voles as follows:

- Burrows and tunnel systems.
- Runs, tracks and slides.
- Latrines (with droppings categorised as fresh, recent, or old).
- Feeding stations and remains; and
- Physical sightings.

2.24 All survey evidence was collected and recorded using GIS-enabled field tablets for accuracy. Where appropriate field evidence was photographed for later analysis.

Other Observations

2.25 While surveys for other species were not specifically undertaken, incidental observations of other species were made, particularly where legislation protections were relevant.

Appraisal Method

2.26 The EIA scoping process[4] identified that effects on ecological receptors were unlikely to be significant in EIA terms. As such, the Proposed Development is not subject to the formal EIA process in relation to ecological receptors.

2.27 This appraisal therefore uses baseline ecological survey information to consider how the Proposed Development will interact with ecological receptors and subsequently establishes mitigation measures that will ensure ecological integrity is maintained and legal and policy compliance achieved. The habitat and species-specific survey methods and best practice guidelines outlined above, and professional judgement, form the basis for the Ecological Appraisal.

Effect Criteria

2.28 Effects on sensitive ecological receptors are appraised in relation to the likelihood of the Proposed Development resulting in changes to the:

- Qualifying features of locally, nationally, or internationally designated sites for nature conservation.
- Functionality of habitats of conservation concern.
- Favourable Conservation Status of local populations of potentially affected protected species[7].

Approach to Mitigation

2.29 Where appropriate, mitigation measures have been set out as a means of reducing the overall effect, or in order that legislative compliance can be achieved.

2.30 The standard mitigation hierarchy has been applied, whereby the following sequential measures are considered:

- **Avoidance:** the effect is avoided by removing its pathway, e.g. by changing the route via the design process wherever possible, micro-siting of towers to avoid ecological receptors.
- **Mitigation:** measures are taken to reduce the significance of the effect, e.g. scheduling works to maintain key commuting and foraging corridors.
- **Compensation:** where the effect cannot be reduced, alternative action is taken elsewhere within the Study Area, e.g. new planting proposals to replace lost vegetation, etc.

2.31 Mitigation measures included have been designed to be pragmatic and proportionate to the scale of the Proposed Development.

2.32 The Applicant is committed to delivering 'No Net Less' and has adopted a Biodiversity Net Gain ('**BNG**') metric to demonstrate this. A standalone BNG Report has been

submitted as part of the planning application and will detail the results of the BNG metric.

Assumption and Limitations to the Appraisal

2.33 All ecological surveys represent a 'snapshot' in time. Habitats and species assemblages are dynamic and change over time in response to a range of variables. Data presented in this report should not be considered a long-term interpretation of ecological data and should not be relied upon as such.

2.34 Evidence of protected species is not always discovered during a survey. This does not mean that a species is not present; hence the surveys also record and assess the ability of habitats to support protected species. The timeframe in which the survey is implemented provides a 'snapshot' of all activity within the Study Area and cannot necessarily detect all evidence of use by a species.

2.35 Please note that the guidelines for bat surveys were updated in September 2023 to a 4th edition[25]. Although the field survey was completed prior to this time, the survey results included within this report have been presented in line with the updated guidelines.

Chapter 3
Ecological Baseline

Desk Study

3.1 The desk study identified the following statutory sites designated for nature conservation purposes within 5km and non-statutory designated sites within 1km, which may have functional connectivity to the Proposed Development:

- Block of LEPO woodland listed on the AWI[15], located adjacent to the west of the Site.
- Red Moss SAC and SSSI, located approximately 200m to the south of the Site at its closest point (on the opposite side of the B7078 road). This is designated for its active raised bog habitat and assessed by NatureScot as being in unfavourable (recovering) condition[33].

3.2 The statutory and non-statutory designated nature conservation sites are provided in **Ecological Appraisal Appendix A, Figure 1** of this report**.**

3.3 No existing records of protected or notable species were recorded within the Study Area by the desk study.

Field Survey

Habitats

3.4 The Phase 1 Habitat Survey recorded a small number of common habitats within the Study Area, these are described below.

3.5 Field surveys did not identify any habitats of potential conservation concern or potential GWDTE habitats, therefore an NVC survey was not required.

3.6 Habitat descriptions should be read in conjunction with the Phase 1 Habitat Survey map in **Ecological Appraisal Appendix A, Figure 1** and site photographs in **Ecological Appraisal Appendix B** of this report.

A1.2.2 Coniferous Woodland (plantation)

3.7 A small area of semi-mature coniferous plantation dominated by Norway spruce was present within the Study Area, immediately to the west of the Site. This area is listed on the AWI as LEPO. The ground layer was covered by spruce

[33] NatureScot (2016) Red Moss SAC – Latest Assessed Condition. Available [online] at: https://sitelink.nature.scot/site/8350 [accessed 20/05/2025]

needles and largely devoid of vegetation (see **Ecological Appraisal Appendix B, Photo 1** and **2** of this report),

B4 Improved Grassland

3.8 Improved grassland was the dominant habitat present throughout the Study Area. This had been subject to extensive grazing (see **Ecological Appraisal Appendix B, Photo 3** of this report). This habitat was also present as a mosaic with marshy grassland to the east and south-east of the Study Area. This habitat was dominated by the following grass species: Yorkshire fog (*Holcus lanatus*), perennial ryegrass (*Lolium perenne*), with frequent tufted hairgrass (*Deschampsia cespitosa*). There was also localised presence of soft rush (*Juncus effusus*), sedge species (C*arex spp*), and bell heather (*Erica cinerea*) (see **Ecological Appraisal Appendix B, Photo 4** and **5** of this report).

B5 Marshy Grassland

3.9 Within the Study Area there were two small areas where the dominant habitat recorded was marshy grassland. These were present as a mosaic with improved grassland. Soft rush was locally dominant in these areas, and they were also heavily grazed.

3.10 The larger stand of marshy grassland was associated with a small watercourse that flowed downhill in the east and the lower lying ground in the south-east corner of the Study Area.

3.11 A second small stand of soft rush was identified in the north of the Study Area. This was present within a natural lower lying hollow in the hillside (see **Ecological Appraisal Appendix B, Photo 5** of this report).

D1 Dry Dwarf Shrub Heath

3.12 A small area of dry dwarf shrub heath/improved grassland was present within the south-west of the Study Area. This habitat was present on the sloped road verge. Within this habitat, bell heather was locally dominant with a ground cover of grasses including Yorkshire fog, perennial ryegrass, and tufted hairgrass (see **Ecological Appraisal Appendix B, Photo 6** of this report).

G2 Running Water

3.13 The east of the Study Area also included a small field drain/small water course that was largely covered by overhanging vegetation dominated by soft rush. In places the vegetation around the channel was more open and exposed small pools of slower moving water (see **Ecological Appraisal Appendix B, Photo 7** and **8** of this report). The habitat was heavily influenced by grazing.

Hard Standing

3.14 A small section of the B7078 road was present as hard standing immediately to the south of the Study Area.

Protected Species

Bats

3.15 The PBRA included an assessment of habitat suitability for bats. The Study Area was dominated by open grassland habitats that lacked linear features. The small coniferous plantation woodland was recorded immediately at the west boundary of the Study Area. This was sub-optimal for commuting and foraging bats due to it being isolated from other linear features in the wider landscape.

3.16 Due to the nature of the commercial conifer plantation (e.g. densely planted trees which are generally felled before roosting features develop), all trees within this area were noted to have either no BRP or PRF-I potential for roosting bats. Therefore, no further survey work was required within the commercial plantation.

Badger

3.17 The results of the badger survey are provided in **Ecological Appraisal Appendix C** and **Figure 4 (Confidential)** of this report**.**

Red Squirrel and Pine Martin

3.18 The survey identified a small area of conifer plantation to the west of the Study Area (see **Ecological Appraisal Appendix A, Figure 3** of this report). The plantation within the Study Area provided suitable resources for foraging and resting sites for red squirrel and pine marten. However, the plantation block was unsuitable for allowing commuting and dispersal of red squirrel and pine martin away from the plantation as it was isolated from any other potentially suitable habitat within the wider landscape.

3.19 No field signs of red squirrel (i.e. dreys or feeding remains) were recorded within the Study Area. However, feeding remains (stripped cones) were noted at several locations within the plantation immediately to the west of the Study Area; these are potential evidence of red squirrel foraging (see **Ecological Appraisal Appendix B, Photo 9** of this report). Red squirrels usually inhabit a large home range, therefore the lack of connectivity between the plantation and other suitable habitats suggests that the Study Area is likely to be part of the territory for a small remnant red squirrel population. See **Ecological Appraisal Figure 4 (Confidential)** of this report.

3.20 No field signs of pine marten were recorded within the Study Area during field surveys.

Water Vole

3.21 Suitable habitats for water vole were recorded in the east of the Study Area where marshy/improved grassland and running water habitats were. Several field drains were present within these areas (see **Ecological Appraisal Appendix A, Figure 3** of this report). However, this area was disconnected from other suitable habitats for the species.

3.22 The field survey did not record field signs of water vole.

Chapter 4
Good Practice Measures/Embedded Mitigation

Good Practice Measures

4.1 This section outlines the avoidance and embedded mitigation measures that will be adopted by the Proposed Development: Further detail is provided in **EIA Chapter 3**.

- The development and application of a Construction Environment Management Plan ('**CEMP**'), which will set out (amongst others) guidance on compliance with nature conservation legislation and policy. This will include adherence to Guidelines on Pollution Prevention[34] and construction best practice, incorporation of relevant measures in relation to lighting, waste management and minimisation of vegetation removal required.
- Production of a Species Protection Plan ('**SPP**') to set out the approach to the monitoring of protected species prior to and during construction. This will include undertaking a pre-construction survey to establish the current use of the Study Area by protected species (badgers and red squirrels) and careful timing of work to avoid effects on protected species.
- The appointment of an Advisory Environmental Clerk of Works ('**ECoW**') to advise, monitor and report on compliance with relevant legislation, policy, and project specific mitigation during construction.
- Pre-construction surveys to be completed to confirm the status of protected species prior to works commencing. This will include updating preliminary bat roost potential, badger, water vole and red squirrel surveys.
- Where possible, the Proposed Development will seek to protect sheltering and resting sites for badgers and red squirrel. If works are likely to happen within 30m of an active badger sett or red squirrel drey, the NatureScot mitigation licensing system will be engaged to ensure works are completed in full compliance with legislation. The ECoW will be on site during construction to advise on pre-works survey and licensing requirements as necessary.

[34] Guidance for Pollution Prevention documents available [online] at: https://www.netregs.org.uk/environmental-topics/guidance-for-pollution-prevention-gpp-documents/ [accessed 20/05/2025]

Enhancement Measures

4.2 A Biodiversity Enhancement Plan ('**BEP**') will be developed and implemented post consent to provide meaningful habitat enhancement appropriate to the scale of the Proposed Development. The key objective of the BEP will be to deliver the Applicant's 'No Net Less' objective for the Proposed Development. This will be measured by the use of the BNG metric, as set out within the standalone **Biodiversity Net Gain Report**[5]. The BEP will include proposals for on-site habitat management and off-site biodiversity enhancement as necessary.

Chapter 5
Appraisal of Effects

Construction Effects - Designated Sites

5.1 Red Moss SAC and SSSI is located approximately 200m to the south of the Proposed Development.

5.2 The habitats present within the Study Area do not include those for which Red Moss SAC/SSSI is designated.

5.3 There will be no direct habitat loss, disturbance, or fragmentation of habitats within Red Moss SAC/SSSI as a result of the Proposed Development.

5.4 The Study Area has some limited hydrological connectivity to the SSSI/SAC, via the un-named watercourse which is culverted under the B7078. However, the SAC/SSSI, which occurs adjacent to the Black Burn, is designated for active raised bog which is a rainfed habitat type and therefore not likely to have a significant surface water input.

5.5 The implementation of standard pollution prevention controls and best practice during the construction phase of the Proposed Development will prevent negative effects on water quality within Red Moss SAC/SSSI (see **Chapter 6** of the EIA Report). Therefore, upon implementation of standard best practice and mitigation measures, there will be no direct habitat loss, disturbance, or fragmentation of habitats within Red Moss SAC/SSSI or indirect effects as a result of the Proposed Development.

5.6 Therefore, there will be no Likely Significant Effects (in Habitats Regulations Appraisal terms[35]) on the integrity of Red Moss SAC as a result of the Proposed Development.

5.7 The plantation woodland present in the west of the Study Area is classified as a LEPO woodland on the AWI. No works are planned within, or adjacent to, this woodland. There will be no loss or fragmentation of this habitat during construction. Suitable root protection zones, in line with BS5837, will be implemented along the woodland edge, and standard pollution prevention controls and best practice will be in place during the construction phase to prevent indirect effects. With these measures in place, there will be no effect on the structural or functional integrity of the resource and no significant effects on this feature.

[35] NatureScot (2024) Habitats Regulations Appraisal (HRA). Available [online] at: https://www.nature.scot/professional-advice/planning-and-development/environmental-assessment/habitats-regulations-appraisal-hra [accessed 20/05/2025]

Construction Effects - Habitats

5.8 The Proposed Development is located within an area dominated by improved grassland, with a limited range of other habitats making up a small proportion of the overall Study Area.

5.9 The marshy grassland and dry heath habitats are habitats of conservation concern[14], although they are each limited in extent, occurring towards the boundaries of the Site and in mosaic with the improved grassland due to the land management history of the Site. As such, they are of relatively low quality having been impacted by agriculture.

5.10 Given the ubiquity and low ecological value of the habitats to be affected, all legislative and policy requirements can be met.

5.11 Furthermore, the Applicant's commitment to 'No Net Less' will mitigate the loss of the habitats of low ecological value resulting from the Proposed Development. Further details are provided within the **Biodiversity Net Gain Report**[5].

5.12 Therefore, there will be no significant adverse effects on habitats of conservation concern as a result of the Proposed Development.

Construction Effects - Protected Species

Bats

5.13 The Study Area lacks the network of linear features and roosting opportunities to provide optimal resources for commuting, foraging and roosting bats.

5.14 The plantation woodland on the west boundary of the Study Area provides very limited commuting and foraging potential. Potential roosting opportunities within the plantation are also very limited due to the density and age structure of the trees in this area. The plantation will not be removed to facilitate the Proposed Development.

5.15 The Proposed Development will include a series of precautionary embedded mitigation measures to safeguard bat species (including pre-construction surveys, supervision of an ECoW, and licensing if required). Therefore, there will be no adverse effects on the conservation status of the local bat population as a result of the Proposed Development.

Badger

5.16 The habitats within the Study Area provide suitable foraging and commuting habitats and sheltering habitats for badgers.

5.17 Field surveys identified badger setts within the Study Area; see **Ecological Appraisal Appendix C (Confidential)** of this report.

5.18 The Proposed Development will not directly adversely affect the setts recorded. However, there is potential for temporary disturbance of commuting routes and loss of a small area of foraging habitat.

5.19 The Proposed Development includes a series of embedded precautionary mitigation measures (including pre-construction surveys, supervision of an ECoW, and licensing if required) to safeguard the species; therefore it is unlikely there will be adverse effects on badger as a result of the Proposed Development.

Red Squirrel and Pine Martin

5.20 The conifer plantation within the Study Area provides limited sheltering, foraging and commuting habitats for red squirrel. Limited evidence of red squirrel was recorded within the Study Area during field surveys. The plantation is not functionally connected to other suitable habitats for the species.

5.21 No pine marten signs were recorded, although this species is likely to be present in the wider landscape. Individuals can have large home ranges and will exploit a range of habitats including woodland and rough grasslands[36]. However, the plantation is highly isolated and does not offer the structural diversity favoured by pine marten.

5.22 The plantation will not be removed as a result of the Proposed Development. The Proposed Development will include a series of embedded precautionary mitigation measures (including pre-construction surveys and licencing if required) to safeguard the species, therefore it is unlikely there will be adverse effects on red squirrel and pine marten as a result of the Proposed Development.

Water Vole

5.23 Marshy grassland habitats within the Study Area were identified as having some limited suitability for sheltering, foraging and commuting water voles. The marshy grassland habitats within the Study Area are small and disconnected from other suitable habitats, and therefore are unlikely to support a viable water vole population.

[36] Birks, J. D. S. (2002) 'The Pine Marten' The Mammal Society, London.

5.24 The lack of field evidence and habitat suitability suggests that the Study Area does not currently support water vole and is unlikely to be important within the context of a regional metapopulation[37].

5.25 The area of marshy grassland in the south-east of the Study Area, which has some limited potential suitability for water vole, is likely to be lost as a result of the Proposed Development. The Proposed Development will include a series of embedded precautionary mitigation measures (including pre-construction surveys, supervision of an ECoW, and licensing if required) to safeguard the species. Therefore, there will be no adverse effects on water vole as a result of the Proposed Development.

Cumulative Effects

5.26 The appraisal of cumulative effects has considered the following proposed developments of a similar nature within 1km of the Site:

- ZV Diversion[38] is a live application with ECU and interacts with the Proposed Development. ZV diversion will be implemented/constructed prior to the development of the Proposed Development.
- Glenmuckloch to Redshaw Overhead Line reinforcement[39] is currently at routeing stage and will connect directly into the Proposed Development.
- M74 West Renewable Energy Park[40]. Includes wind, solar and battery energy storage system ('**BESS**') elements and is located approximately 300m to the east of the Site boundary. This is a live application which interacts with the Proposed Development.
- Red Moss Battery Storage Scheme[41] is located approximately 30m to the southeast of the Proposed Development at its closest point. This is currently a live application which interacts with the Proposed Development.
- Redshaw Battery Storage System[42] is located close to the west boundary of the Proposed Development. This is a live application that partly interacts with the Proposed Development.

5.27 EIA Figure 1.2 provides further details of the spatial arrangement of the Proposed Development in relation to cumulative developments.

5.28 The EIA scoping process and this appraisal identified that cumulative effects on ecological receptors were unlikely to be significant in EIA terms in relation to the Proposed Development; further commentary on the ecological interactions between the Proposed Development and these cumulative developments is provided below.

ZV Diversion and the Glenmuckloch to Redshaw Overhead Line reinforcement

5.29 The Proposed Development, in combination with the proposed ZV Diversion immediately to the north and the Glenmuckloch to Redshaw Overhead Line reinforcement, has potential to have adverse effects on badgers and red squirrels at a Site level, due to the presence of suitable commuting and foraging habitat for these species. In addition, the Proposed Development in combination with the Proposed ZV Diversion and Glenmuckloch to Redshaw Overhead Line reinforcement has potential to have adverse effects on marshy grassland habitats suitable for sheltering, foraging and commuting water voles.

5.30 It is assumed that the proposed ZV Diversion and Glenmuckloch to Redshaw Overhead Line reinforcement will have the appropriate measures and, if necessary, licensing in place prior to commencement of works. On this basis local badger, water vole or red squirrel populations are unlikely to experience cumulative adverse effects in combination with Redshaw substation.

M74 West Renewable Energy Park

5.31 The M74 West Renewable Energy Park plans to install up to 22 wind turbines, solar photo-voltaic ('**PV**') generation and a BESS with associated infrastructure immediately to the south and east of the Study Area. An Ecological Impact

[37] A metapopulation is a group of connected populations, which may experience localised extinction and recolonisation, often in response to stochastic events such as rainfall.
[38] SPEN, 'ZV Route 400kV Diversion' (2024). Project Website. Available [online] at: https://www.spenergynetworks.co.uk/pages/zv_route_400kv_diversion.aspx [accessed 05/05/2025]
[39]SPEN 'Glenmuckloch to Redshaw Reinforcement Project' Project Website. Available [online] at: https://www.spenergynetworks.co.uk/pages/grrp.aspx [accessed 05/05/2025]
[40]Renewco Power 'M74 West Renewable Energy Park' Project Website. Available [online] at: https://www.renewcopower.com/portfolio/united-kingdom/uk-projects/m74-west-renewable-energy-park/ [accessed 05/05/2025]; and ECU Reference ECU00005019, available [online] at: https://www.energyconsents.scot/ApplicationDetails.aspx?cr=ECU00005019&T=5 [accessed 05/05/2025]
[41]Green Switch Capital 'Red Moss Battery Energy Storage Facility'. Project website, available [online] at: https://www.redmossbess.com/ [accessed 05/05/2025]; and ECU Reference ECU00004930, available [online] at: https://www.energyconsents.scot/ApplicationDetails.aspx?cr=ECU00004930&T=0 [accessed 20/05/2025]
[42] BayWa r.e 'Redshaw Battery Energy Storage System ' Project Website: https://www.baywa-re.co.uk/en/storage/redshaw-farm-battery-energy-storage-system [accessed 05/05/2025]; and ECU Reference ECU00005122, available [online] at: https://www.energyconsents.scot/ApplicationDetails.aspx?cr=ECU00005122 [accessed 20/05/2025]

Assessment was submitted to the Energy Consents Unit in September 2024[40].

5.32 The application states that mitigation measures will reduce the risk of direct and indirect impacts occurring as a result of the development, particularly in relation to Red Moss SSSI/SAC and protected species. The EIA report confirms that it is unlikely that there will be significant effects as a result of the proposed M74 West Renewable Energy Park development, either alone or cumulatively.

Red Moss Battery Storage Facility

5.33 A request for a screening opinion was made to the ECU for the proposed Red Moss Battery Storage Facility in May 2024[41]. The proposal expects a storage capacity of up to 342 MW.

5.34 The project was confirmed to be a non-EIA project in October 2024. As such, the potential effects of the proposed Red Moss Battery Storage Scheme were not deemed to be significant in EIA terms.

Redshaw Battery Storage System

5.35 The Redshaw Battery Storage System plans to install battery storage facility with a capacity of up to 500MW. An application for consent has been submitted to the Energy Consents Unit[42].

5.36 The project was confirmed to be a non-EIA project in November 2024. As such, the potential effects of the proposed Redshaw Battery Storage System were not deemed to be significant in EIA terms.

Summary

5.37 No significant effects have been identified in relation to the Proposed Development, nor in relation to any of the developments discussed. As such, it is considered that the Proposed Development, in combination with other developments within 1km (as outlined in EIA Figure 1.2), is unlikely to have an adverse cumulative effect on ecological receptors.

Proposed Additional Mitigation

5.38 No additional mitigation is required in addition to that already embedded in project design and construction. However, the implementation of the target that the Proposed Development will deliver 'no net loss' of biodiversity, supported by a BNG assessment within the **Biodiversity Net Gain Report**[5], will ensure the delivery of meaningful biodiversity compensation and enhancement measures.

Chapter 6
Summary and Conclusions

6.1 The desk studies and field surveys undertaken to inform this Ecological Appraisal confirmed that the proposed construction of the Proposed Development may result in small scale, mitigable effects on ecological features.

6.2 Red Moss SSSI and SAC are located approximately 200m to the south of the Study Area. There will be no direct habitat loss, disturbance, or fragmentation of habitats within SAC/SSSI. Although there is a limited hydrological connection between the Proposed Development and the SAC, upon implementation of standard best practice and mitigation measures there will be no indirect effects as a result of the Proposed Development. Therefore, there will be no Likely Significant Effects (in Habitat Regulations Assessment terms) on the integrity of Red Moss SAC as a result of the Proposed Development.

6.3 A block of LEPO woodland listed on the AWI is present in the west of the Study Area. However, this woodland is outwith the Site, and there will be no loss of the plantation as a result of the Proposed Development. A series of precautionary mitigation measures will be implemented to avoid and protect the plantation woodland resource.

6.4 Habitats within the Study Area were dominated by improved grassland of low ecological value. There are limited extents of habitats of conservation concern[10,11,12,13,14], such as marshy grassland and dry heath, although these occur in mosaic with improved grassland and are affected by agriculture, therefore of limited ecological value.

6.5 Habitats within the Study Area offered limited opportunities for bats, badger, and red squirrel. Low levels of badger and red squirrel activity were recorded within the conifer plantation in the west of the Study Area (outwith the Site). No signs of pine marten or water vole were noted, although some limited habitat potential is present.

6.6 On the basis of the information collated on non-avian ecology within the Study Area, and taking account of the small area of habitat that will be permanently lost, there will be no significant effects arising from the Proposed Development in isolation or cumulatively with other developments.

6.7 A series of embedded mitigation and good practice measures will be adopted within the design and construction to safeguard the conifer plantation and the low levels of protected species recorded within the Study Area (see **Ecological Appraisal Chapter 4**). Therefore, the integrity and

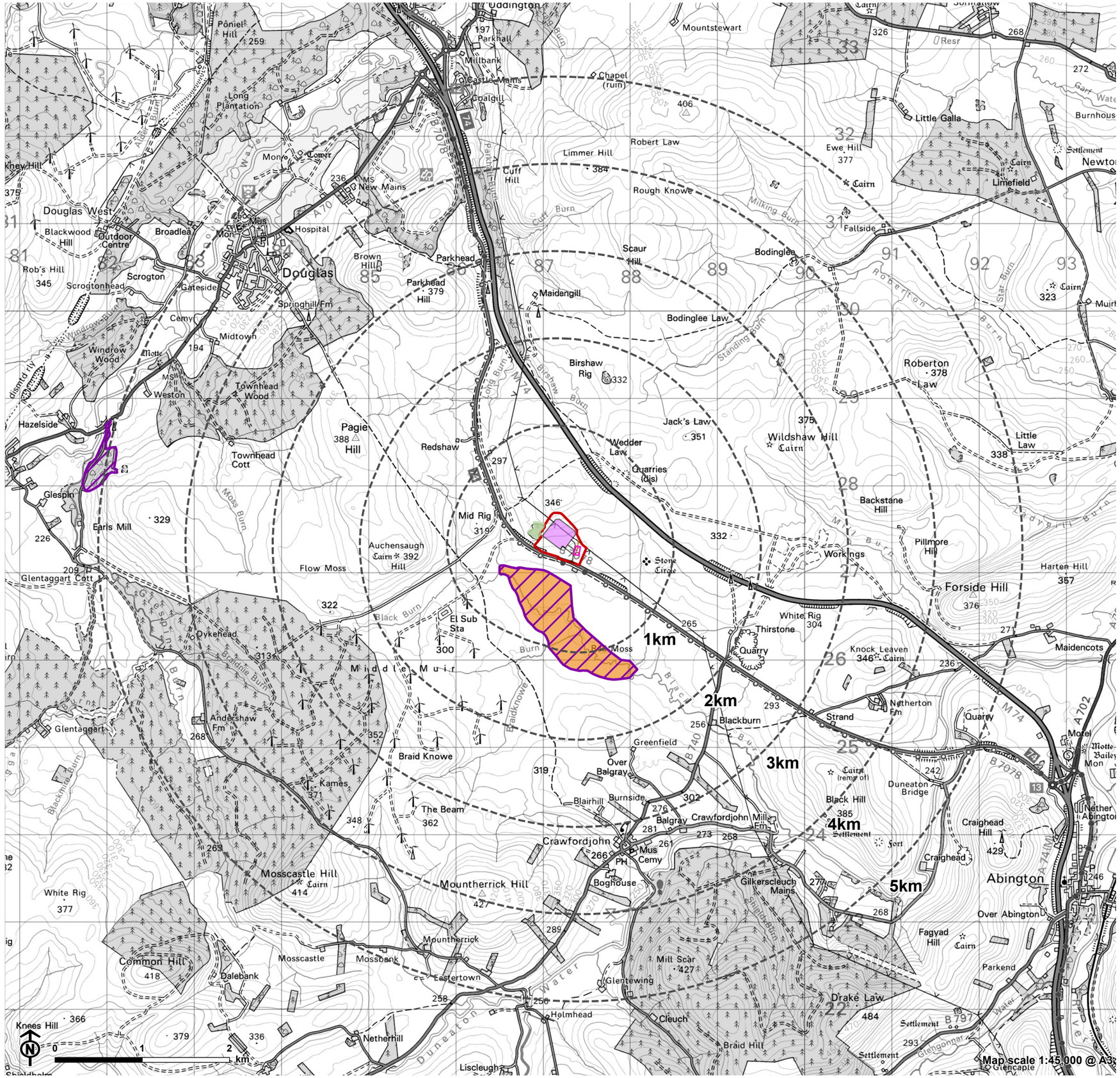
favourable conservation status of designated sites, habitats of conservation concern[10,11,12,13,14] and protected species within the Study Area will be maintained as a result of the Proposed Development and legislative compliance met.

Appendix A
Figures

Redshaw 400kV Substation
for SP Energy Networks

LUC

Figure 1: Designated sites



- Site boundary
- 1km interval from site boundary
- Proposed Redshaw substation
- Proposed temporary compound
- Proposed access road
- Proposed farmer's access track

Statutory designated site

- Special Area of Conservation (SAC)
- Site of Special Scientific Interest (SSSI)

Non-statutory designated site

- Ancient Woodland Inventory (AWI) – Long Established Plantation Origin (LEPO)

Redshaw 400kV Substation
for SP Energy Networks

LUC

Figure 2: Phase 1 habitat

Maxar, Microsoft

EB:cooper_h LUC 12595_Redshaw_Ecology 15/04/2025

Redshaw 400kV Substation
for SP Energy Networks

LUC

Figure 3: Protected species survey

- Site boundary
- Proposed Redshaw substation
- Proposed temporary compound
- Proposed access road
- Proposed farmer's access track

Protected species field signs

- Red squirrel feeding remains
- Habitat suitable for water vole

Maxar, Microsoft

EB:cooper_h LUC 12595_Redshaw_Ecology 15/04/2025

Appendix B

Site Photographs

Table B.1 Site Photographs

	
Photo 1: Conifer Plantation to the West of the Site.	**Photo 2: Example of Ground cover within Conifer Plantation.**
	
Photo 3: Example of Improved Grassland	**Photo 4: Heavily Grazed Heather within Improved Grassland**

Photo 5: Example of Localised Presence of Soft Rush within Improved Grassland.

Photo 6: Dry Dwarf Shrub Heath on Road Verge.

Photo 7: Example of Small Drainage Channel within the South of the Study Area.

Photo 8: Example of Small Pool within Drainage Channel within the South of the Study Area.

Photo 9: Example of Stripped Pine Cones Within Plantation.

Appendix C

Confidential Badger Survey Report