Lorg Wind Farm Grid Connection

Environmental Impact Assessment Report

Chapter 8: Ecology and Ornithology

November 25

Land & Planning

Contents

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8 ECOLOGY AND ORNITHOLOGY

8.1 Introduction

8.1.1 This Chapter addresses the impacts of the Proposed Development on ecology, nature conservation and ornithology. This Chapter is supported by the following appendices and their accompanying figures:

- **Appendix 8.1: Habitats Baseline;**
- **Appendix 8.2: Protected Species Baseline;**
- **Appendix 8.3: Ornithology Baseline;**
- **Appendix 8.4: Fish Baseline;**
- **Appendix 8.5: Biodiversity Net Gain Baseline; and**
- **Appendix 8.6: 2025 Update Surveys**

8.1.2 This Chapter defines the Site as the location of the preferred Overhead Line (OHL) alignment and related infrastructure, e.g. access routes and laydown areas required to facilitate construction and maintenance of the OHL alignment, and a 25 m Infrastructure Location Allowance (ILA) around each infrastructure location. The ILA allows for elements of the Proposed Development to be microsited, which includes micrositing for environmental mitigation.

8.2 Legislation, Policy and Guidance

Legislation

8.2.1 This assessment has been compiled with reference to the following relevant nature conservation legislation, from which the protection of sites, habitats and species is derived in Scotland:

- UK Withdrawal from the European Union (Continuity) (Scotland) Act 2021[1];
- European Commission Directive 2009/147/EC on the Conservation of Wild Birds (as amended) (the Birds Directive)[2];
- Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Flora and Fauna (the Habitats Directive)[3];
- Conservation (Natural Habitats &c.) Regulations 1994 (as amended) (the Habitats Regulations)[4];
- Wildlife and Countryside Act 1981 (as amended)[5];
- Nature Conservation (Scotland) Act 2004 (as amended)[6];
- Wildlife and Natural Environment (Scotland) Act 2011 (as amended)[7];
- Protection of Badgers Act 1992 (as amended)[8];

[1] Scottish Parliament (2021). *UK Withdrawal from the European Union (Continuity) (Scotland) Act 2021*. Available online at: https://www.legislation.gov.uk/asp/2021/4/contents [Accessed: August 2025]

[2] European Union (2009). *The Birds Directive (2009/147/EC)*. Available online at: https://eur-lex.europa.eu/eli/dir/2009/147/oj/eng [Accessed: August 2025]

[3] European Union (2009). *Habitats Directive (92/43/EEC)*. Available online at: https://eur-lex.europa.eu/eli/dir/1992/43/oj/eng [Accessed: August 2025]

[4] UK Government (1994). *Conservation (Natural Habitats &c.) Regulations 1994*. Available online at: https://www.legislation.gov.uk/uksi/1994/2716/contents [Accessed: August 2025]

[5] UK Government (1981). *Wildlife and Countryside Act 1981*. Available online at: https://www.legislation.gov.uk/ukpga/1981/69/contents [Accessed: August 2025]

[6] Scottish Parliament (2004). *Nature Conservation (Scotland) Act 2004*. Available online at: https://www.legislation.gov.uk/asp/2004/6/contents [Accessed: August 2025]

[7] Scottish Parliament (2011). *Wildlife and Natural Environment (Scotland) Act 2011*. Available online at: https://www.legislation.gov.uk/asp/2011/6/contents [Accessed: August 2025]

[8] UK Government (1982). *Protection of Badgers Act 1992*. Available online at: https://www.legislation.gov.uk/ukpga/1992/51/contents [Accessed: August 2025]

- Salmon and Freshwater Fisheries (Consolidation) (Scotland) Act 2003[9];
- Water Environment (Controlled Activities) (Scotland) Regulations 2005 (as amended)[10];
- Wild Mammals (Protection) Act 1996 (as amended)[11];
- Animals and Wildlife (Penalties, Protections and Powers) (Scotland) Act 2020[12];
- The Electricity Works (Environmental Impact Assessment (EIA)) (Scotland) Regulations 2017[13];
- Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017 (as amended)[14]; and
- Planning (Scotland) Act 2019[15].

Policy

National Policy

8.2.2 National Planning Framework 4 (NPF4)[16] aims to secure beneficial effects for biodiversity, specifically including the following policies of relevance to this Chapter:

- Policy 3 Biodiversity, which intends to protect biodiversity, reverse biodiversity loss, deliver beneficial effects from development and strengthen nature networks; and is relevant to a proposed change to the baseline of the Site.
- Policy 4 Natural places, which intends to protect, restore and enhance natural assets making best use of nature-based solutions; and is relevant as it requires proposals that are likely to have an adverse effect on species protected by legislation to meet the relevant statutory tests, appropriate steps to be taken to establish presence, and the level of protection to be factored into the planning and design of the development. It also requires the precautionary principle to be applied.
- Policy 5 Soils, which intends to protect carbon-rich soils, restore peatlands and minimise disturbance to soils from development.
- Policy 6 Forestry, woodland, and trees, which intends to protect and expand forests, woodland and trees; and is relevant due to the presence of woodland and lines of trees at the Site.

[9] Scottish Government (2003). *Salmon and Freshwater Fisheries (Consolidation) (Scotland) Act 2003*. Available online at: Salmon and Freshwater Fisheries (Consolidation) (Scotland) Act 2003 [Accessed: August 2025]

[10] Scottish Government (2005 & 2021). *Water Environment (Controlled Activities) (Scotland) Regulations 2005* and amended *The Water Environment (Controlled Activities) (Scotland) Amendment Regulations 2021*. Available online at: The Water Environment (Controlled Activities) (Scotland) Regulations 2005 and The Water Environment (Controlled Activities) (Scotland) Amendment Regulations 2021 [Accessed: August 2025]

[11] UK Government (1996). *Wild Mammals (Protection) Act 1996*. Available online at: https://www.legislation.gov.uk/ukpga/1996/3/contents [Accessed: August 2025]

[12] Scottish Government (2020). *Animals and Wildlife (Penalties, Protections and Powers) (Scotland) Act 2020*. Available online at: https://www.legislation.gov.uk/asp/2020/14/contents [Accessed: August 2025]

[13] Scottish Government (2017). The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017. Available online at: https://www.legislation.gov.uk/ssi/2017/101/contents.

[14] Scottish Government (2017). *Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017*. Available online at: https://www.legislation.gov.uk/ssi/2017/102/contents/made [Accessed: August 2025]

[15] Scottish Parliament (2019) *Planning (Scotland) Act 2019*. Available online at: https://www.legislation.gov.uk/asp/2019/13/contents [Accessed: August 2025]

[16] The Scottish Government, (2024). National Planning Framework 4. [Online] Available at: https://www.gov.scot/publications/national-planning-framework-4/ [Accessed: April 2025].

8.2.3 Scottish Biodiversity Strategy (SBS) to 2045[17] which sets out an ambition for Scotland to be Nature Positive by 2030 and to have restored and regenerated biodiversity by 2045. This supersedes Scotland's Biodiversity: it's in your hands[18] - a strategy for conserving biodiversity in Scotland up to 2030; and the 2020 Challenge for Scotland's biodiversity[19] - a plan for how to achieve the outcomes of the European Biodiversity Strategy 2020 and United Nations (UN) Aichi targets, with reference to Scottish biodiversity strategy post-2020: statement of intent[20]. It also supersedes the Scottish Biodiversity List[21](SBL) of flora, fauna and habitats considered of principal importance for the conservation of biodiversity. The SBS to 2045 instead refers to a series of overarching targets and indicators. It references the Species on the Edge (SOTE) Programme[22] which aims to deliver nine species recovery projects. The following target species for the SOTE project area (Solway) relevant to the Proposed Development, based on the Site location, land-use, and habitats, are:

- Brown long-eared bat (*Plecotus auritus*);
- Common pipistrelle (*Pipistrellus*);
- Curlew (*Numenius arquata*);
- Daubenton's bat (*Myotis daubentonii*);
- Greenland white-fronted goose (*Anser albifrons flavirostris*);
- Lapwing (*Vanellus vanellus*); and
- Soprano pipistrelle (*Pipistrellus pygmaeus*).

Local Policy

8.2.4 The Dumfries and Galloway Local Development Plan 2 (LDP2)[23] has the following policies relevant to this assessment:

- Policy OP1(d): Development Considerations. Biodiversity and Geodiversity: Development proposals should respect, protect and/or enhance the region's rich and distinct biodiversity, geodiversity and sites identified for their contribution to the natural environment at any level, including ancient and semi-natural woodland. The guidance contained within the Local Biodiversity Action Plan (BAP), and any subsequent revised or amended document, will be a material consideration in the assessment of proposals.
- Policy NE4: Sites of International Importance for Biodiversity. Development proposals likely to have a significant effect on an existing or proposed Special Protection Area (SPA), existing or candidate Special Area of Conservation (SAC) or Ramsar Site, including developments outwith the Site, will require an appropriate assessment and will only be permitted where:
  - The development does not adversely affect the integrity of the Site; or
  - There are no alternative solutions; there are imperative reasons of overriding public interest, including those of a social or economic nature; and compensatory measures have been identified and agreed to ensure that the overall coherence of the natura network is protected.

[17] Scottish Government (2023). *Scottish Biodiversity Strategy to 2045: Tackling the Nature Emergency in Scotland*. Available online at: https://www.gov.scot/publications/scottish-biodiversity-strategy-2045-tackling-nature-emergency-scotland-2/ [Accessed: August 2025]

[18] Scottish Executive (2004). *Scotland's Biodiversity: It's In Your Hands. Edinburgh.* Available online at: Scotland's biodiversity: it's in your hands - gov.scot [Accessed: August 2025]

[19] Scottish Government (2013). *2020 Challenge for Scotland's Biodiversity. Edinburgh.* Available online at: https://www.gov.scot/publications/2020-challenge-scotlands-biodiversity-strategy-conservation-enhancement-biodiversity-scotland/documents/ [Accessed: August 2025]

[20] Scottish Government (2020). *Scottish biodiversity strategy post-2020: statement of intent*. Available online at: https://www.gov.scot/publications/scottish-biodiversity-strategy-post-2020-statement-intent/ [Accessed: August 2025]

[21] Scottish Ministers (2012). *Scottish Biodiversity List.* Available online at: https://www.nature.scot/doc/scottish-biodiversity-list [Accessed: August 2025]

[22] NatureScot (n.d.). *Species on the Edge.* Available online at: https://www.nature.scot/scotlands-biodiversity/species-edge-sote/species-edge-about-programme [Accessed: August 2025]

[23] Dumfries and Galloway Council (2019). *Dumfries and Galloway Local Development Plan 2.* Available online at: Local Development Plan 2 (LDP2) | Dumfries and Galloway Council [Accessed: August 2025]

- Policy NE5: Species of International Importance. Development proposals that would be likely to have an adverse effect on a European Protected Species (EPS) will not be permitted unless it can be shown that:
    - There is no satisfactory alternative; and
    - The development is required for preserving public health or public safety or for other imperative reasons of overriding public interest, including those of a social or economic nature and beneficial consequences of primary importance for the environment; and
    - The development would not be detrimental to the maintenance of the population of the species at a favourable conservation status in its natural range.
- Policy NE6: Sites of National Importance for Biodiversity and Geodiversity. Development that affects Sites of Special Scientific Interest (SSSI), not designated as International Sites, and other national nature conservation designations will only be permitted where:
    - It will not adversely affect the integrity of the area or the qualities for which it has been designated; or
    - Any such adverse effects are clearly outweighed by social, environmental or economic benefits of national importance.
- Policy NE7: Forestry and Woodland. The following policy will apply to those woodland/forestry felling, planting and replanting proposals which do not require planning permission but where the Council acts as a consultee to Forestry Commission Scotland. The Council will support the creation and protection of sensitively designed and managed forests and woodlands. Proposals should seek to ensure that ancient and semi-natural woodlands and other woodlands with high nature conservation value are protected and enhanced. In determining its response to individual forestry felling, planting and replanting consultations where Forestry Commission Scotland is the determining authority, the Council will:
    - Take into account environmental and other interests identified in the Forestry and Woodland Strategy including biodiversity, water (including flood risk management), soil and air, landscape setting, historic environment and land restoration;
    - Consider the scheme's location as set out in the Forestry and Woodland Strategy;
    - Seek to ensure an appropriate balance between both afforested and un-afforested areas in the locality;
    - Encourage planting of a type, scale, design, age, composition and species mix that is appropriate to the locality;
    - Actively encourage proposals to have a beneficial effect on nature conservation and/or natural and historic environment interest;
    - Encourage proposals to take account of possible recreational use in the design of any planting schemes and indicate how such recreational uses have been investigated; and ensure that proposals do not have an adverse impact on the road network.
- Policy NE15: Protection and Restoration of Peat Deposits as Carbon Sinks. The role of natural carbon sinks in retaining carbon dioxide will be maintained by safeguarding and protecting peat deposits, including those not already designated for habitat conservation. The Council will support peatland restoration, including rewetting. Developments proposed affecting peat deposits not already designated for habitat conservation reasons may be permitted in the following circumstances:

  (a) In areas of degraded peatland where all of the following apply:
    - The deposits have been significantly damaged by human activity; and
    - The conservation value is low; and
    - Restoration to functioning peatland is not possible.
    - In all such cases, appropriate Site restoration measures, to something other than functioning peatland, will be required; or

- Where renewable energy generating development is proposed and it can be demonstrated (in accordance with the Scottish Government's 'carbon calculator' or other equivalent independent evidence) that the balance of advantage in terms of climate change mitigation lies with the energy generation proposal; or
- Where surface coal extraction requires removal of peat as an overburden to access the coal and where, following extraction of the coal, the Site will be restored to a wetland habitat with a biodiversity value that is no less than the biodiversity value of the Site prior to development. Grassland and woodland should not be considered as restoration options. If these requirements cannot reasonably be achieved within the development Site, creation of a wetland within the vicinity of the Site may be an acceptable alternative.

Guidance

8.2.5 This assessment has been compiled with reference to the following relevant nature conservation guidance and advice, from which the protection of sites, habitats and species is derived in Scotland:

- Chartered Institute for Ecology and Environmental Management (CIEEM) (2024). Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine version 1.3. Chartered Institute of Ecology and Environmental Management, Winchester[24];
- NatureScot. Planning and development: standing advice and guidance documents.[25];
- Scottish Natural Heritage (2016). Assessing Connectivity with SPAs[26];
- NatureScot (2025). Assessment and mitigation of power lines and guyed meteorological masts on birds[27];
- NatureScot formerly Scottish Natural Heritage (SNH) (2017). Recommended bird survey methods to inform the impact assessment of onshore Wind Farms. SNH Guidance. SNH, Battleby.[28]
- NatureScot (2025). Recommended bird survey methods to inform the impact assessment of onshore Wind Farms. SNH Guidance. SNH, Battleby.[29]
- Gilbert, G et al. (1998). Bird Monitoring Methods: A Manual of Techniques for UK Key Species. Bird Monitoring Methods. RSPB, Sandy.[30];
- Hardey J et al. (2013). Raptors. A Field Guide for Surveys and Monitoring. The Stationary Office, Edinburgh.[31];
- Brown, A.F. and Shepherd, K, B. (1993). A method for censusing upland breeding waders. Bird Study, 40: 189-195[32];

[24] CIEEM (2024). *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine, Version 1.3.* Available online at: EcIA-Guidelines-v1.3-Sept-2024.pdf [Accessed: August 2025]

[25] NatureScot (n.d.). *Planning and development: standing advice and guidance documents*. Available online at: https://www.nature.scot/professional-advice/planning-and-development/planning-and-development-advice/planning-and-development-standing-advice-and-guidance-documents

[26] NatureScot (2016) formerly SNH(2016). *Assessing Connectivity with Special Protection Areas (SPAs).* Available online at: https://www.nature.scot/sites/default/files/2022-12/Assessing%20connectivity%20with%20special%20protection%20areas.pdf [Accessed: August 2025]

[27] NatureScot (2025*). Assessment and mitigation of power lines and guyed meteorological masts on birds*. Available online at: https://www.nature.scot/doc/guidance-assessment-and-mitigation-impacts-power-lines-and-guyed-meteorological-masts-birds [Accessed: August 2025]

[28] NatureScot (2017). *Recommended bird survey methods to inform impact assessment of onshore windfarms*. Available online at: https://www.nature.scot/doc/recommended-bird-survey-methods-inform-impact-assessment-onshore-windfarms [Accessed: August 2025]

[29] NatureScot (2025). *Recommended bird survey methods to inform impact assessment of onshore windfarms*. Available online at: https://www.nature.scot/doc/recommended-bird-survey-methods-inform-impact-assessment-onshore-windfarms [Accessed: August 2025]

[30] Gilbert, G., et al. (1998). *Bird Monitoring Methods: A Manual of Techniques for UK Key Species. Sandy: RSPB.* [Accessed: August 2025]

[31] Hardey, J., et al. (2013). *Raptors: A Field Guide for Surveys and Monitoring. 3rd edn. Edinburgh: The Stationery Office.* Available online at: https://raptormonitoring.org/need-advice-on-monitoring [Accessed: August 2025]

[32] Brown, A.F. and Shepherd, K.B. (1993). *A method for censusing upland breeding waders', Bird Study,* 40(3), pp. 189–195. Available online at: https://cieem.net/resource/a-method-for-censusing-upland-breeding-waders/ [Accessed: August 2025]

- Chanin, P. (2003). Monitoring the otter *Lutra lutra*. Conserving Natura 2000 Rivers Monitoring Series No. 10. English Nature, Peterborough[33];
- Harris, S et al. (1989). Surveying Badgers. Mammal Society.[34];
- Cresswell WJ et al. (2012). UKBAP Mammals: Interim Guidelines for Survey Methodologies, Impact Assessment and Mitigation. The Mammal Society, Southampton.[35];
- Collins, J. (2016). Bat Surveys: Good Practice Guidelines. 3rd edition. Bat Conservation Trust. London.[36];
- Strachan, R., et al. (2011) The water vole conservation handbook. 3rd Edition. WildCRU, Oxford.[37];
- Joint Nature Conservation Committee (JNCC) (2010). Handbook for Phase 1 Habitat Survey: A Technique for Environmental Audit. Joint Nature Conservation Committee.[38];
- Rodwell, J.S. (ed.) 1991. British Plant Communities. Volume 2. Mires and heath. Cambridge University Press.[39];
- Rodwell J. (2006). National Vegetation Classification (NVC) Users Handbook. JNCC, Peterborough.[40];
- UKHab Ltd. (2020). UK Habitat Classification, Version 1.1.[41];
- Young MR et al. (2003) Monitoring the Freshwater Pearl Mussel, *Margaritifera margaritifera*. Conserving Natura 2000 Rivers Monitoring Series No.2, English Nature, Peterborough.[42]
- Eaton et al (2021). Birds of Conservation Concern 5 (BoCC5). The fifth BoCC in the United Kingdom, Channel Islands and Isle of Man and second International Union for Conservation of Nature (IUCN) Red List assessment of extinction risk for Great Britain. British Birds 114 723–747.[43];
- CIEEM,(2019) Advice note of the lifespan of ecological reports and surveys.[44];
- Scottish Environmental Protection Agency (SEPA) (2024) Guidance on Assessing the Impacts of Developments on Groundwater Dependent Terrestrial Ecosystems.[45];

[33] Chanin, P. (2003). *Monitoring the otter Lutra lutra. Conserving Natura 2000 Rivers Monitoring Series No. 10. Peterborough: English Nature*. Available online at: https://publications.naturalengland.org.uk/publication/78009 [Accessed: August 2025]

[34] Harris, S. et al. (1989). *Surveying Badgers. Mammal Society*. Available online at: https://cieem.net/resource/surveying-badgers-the-mammal-society/ [Accessed: August 2025]

[35] Cresswell, W.J. et al. (2012). *UKBAP Mammals: Interim Guidelines for Survey Methodologies, Impact Assessment and Mitigation. The Mammal Society.* Available manual (on purchase) at: https://www.nhbs.com/uk-bap-mammals-book [Accessed: August 2025]

[36] Collins, J. (2016). *Bat Surveys: Good Practice Guidelines. 3rd edition. London: Bat Conservation Trust*. Available online at: https://cdn.bats.org.uk/uploads/pdf/Resources/Bat_Survey_Guidelines_2016_NON_PRINTABLE.pdf?v=1542281971&_gl=1*145qsdz*_ga*MTU3OTEyNTc1MC4xNzU4NjQ5MDIw*_ga_G28378TB9V*czE3NTg2NDkwMTkkbzEkZzEkdDE3NTg2NDkwNDkkajMwJGwwJGgw [Accessed: August 2025]

[37] Strachan, R. et al. (2011) *The Water Vole Conservation Handbook. 3rd edn. Oxford: WildCRU*. [Accessed: August 2025]

[38] 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: August 2025]

[39] Rodwell, J.S. (ed.) (1991). *British Plant Communities. Volume 2: Mires and Heaths*. Cambridge. [Accessed: August 2025]

[40] Rodwell, J. (2006). *National Vegetation Classification: Users' Handbook.* Peterborough: JNCC. Available online at: https://data.jncc.gov.uk/data/a407ebfc-2859-49cf-9710-1bde9c8e28c7/JNCC-NVC-UsersHandbook-2006.pdf [Accessed: August 2025]

[41] UKHab Ltd. (2020). *UK Habitat Classification, Version 1.1.* Available online at: https://www.ukhab.org/ [Accessed: August 2025]

[42] Young, M.R., et al. (2003). *Monitoring the Freshwater Pearl Mussel, Margaritifera margaritifera*. Conserving Natura 2000 Rivers Monitoring Series No. 2. Peterborough: Natural England. Available online at: https://publications.naturalengland.org.uk/publication/71037 [Accessed: August 2025]

[43] Eaton, M. et al. (2021). *Birds of Conservation Concern 5. British Birds*, 114, pp. 723–747. [Accessed: August 2025]

[44] CIEEM,(2019). *Advice note of the lifespan of ecological reports and surveys.* Available online at: https://cieem.net/wp-content/uploads/2019/04/Advice-Note.pdf [Accessed: August 2025]

[45] SEPA (2024). *Guidance on Assessing the Impacts of Developments on Groundwater Dependent Terrestrial Ecosystems.* Available online at: guidance-on-assessing-the-impacts-of-developments-on-groundwater-dependent-terrestrial-ecosystems.docx [Accessed: August 2025]

- NatureScot (2025). Assessment and mitigation of impacts of power lines and guyed meteorological masts on birds.[46];
- Warren, P. et al. (2012). Black Grouse *Tetrao tetrix* nest-site habitats and fidelity to breeding areas in northern England. Bird Study Volume 59, pages 139-143.[47];
- Goodship, N.M. and Furness, R.W (2022) (MacArthur Green) Disturbance Distances Review: An updated literature review of disturbance distances of selected bird species. NatureScot Research Report 1283.[48];
- NatureScot (2024) Standing advice for planning consultations–Badgers[49];
- NatureScot (2024) Standing advice for planning consultations – Bats[50];
- Shawyer, C. R. (2011). Barn Owl Tyto alba Survey Methodology and Techniques for use in Ecological Assessment: Developing Best Practice in Survey and Reporting. Wildlife Conservation Partnership[51]; and
- Prinsen, H.A.M., et al. (2012). Guidelines on How to Avoid or Mitigate Impact of Electricity Power Grids on Migratory Birds in the African-Eurasian Region. African-Eurasian Migratory Waterbird Agreement (AEWA) Conservation Guidelines No. 14, CMS Technical Series No. 29, AEWA Technical Series No. 50, CMS Raptors MOU Technical Series No. 3, Bonn, Germany. [52]

8.3 Consultation

8.3.1 The consultation responses include those that date back to 2017, but include updates from more recent years reflecting frequent pauses to the Proposed Development programme between 2017 and the current time.

8.3.2 Due to the changes to the Proposed Development comprising amendments to the Preferred Route, an EIA Scoping update was provided to the Energy Consents Unit (ECU) in May 2022. In addition, Scoping update letters were issued in May 2022 via email to consultees who provided an initial Scoping Response in 2019.

8.3.3 As there was not a substantive change to the EIA scope, it was proposed to continue in line with the Scoping Opinion previously obtained; however, consultees were offered the chance to update their response should they wish.

8.3.4 Further consultation was undertaken in July 2024 due to the length of time which had elapsed since the previous scoping consultation with the ECU was undertaken. The letter summarised the validity of the Environmental Baseline for each of the technical topics. It concluded that, as there had been no substantive change to the environmental baseline, the Scoping Opinion obtained in 2019 and updated in 2022 was still valid. Following consultation, the ECU confirmed that they were content with this approach.

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[46] NatureScot (2025). *Assessment and mitigation of impacts of power lines and guyed meteorological masts on birds*. Available online at: https://www.nature.scot/doc/guidance-assessment-and-mitigation-impacts-power-lines-and-guyed-meteorological-masts-birds [Accessed: August 2025]

[47] Warren, P., et al. (2012). *Black Grouse Tetrao tetrix nest-site habitats and fidelity to breeding areas in northern England*, *Bird Study*, 59, pp. 139–143. Available online at: Black Grouse Tetrao tetrix nest-site habitats and fidelity to breeding areas in northern England [Accessed: August 2025]

[48] Goodship, N.M. and Furness, R.W (2022). *Disturbance Distances Review: An updated literature review of disturbance distances of selected bird species*. NatureScot Research Report 1283. Available online at: https://www.nature.scot/doc/naturescot-research-report-1283-disturbance-distances-review-updated-literature-review-disturbance [Accessed: August 2025]

[49] NatureScot (2024). *Standing advice for planning consultations–Badgers.* Available online at: https://www.nature.scot/doc/standing-advice-planning-consultations-badgers [Accessed: August 2025]

[50] NatureScot (2024). *Standing advice for planning consultations – Bats.* Available online at: https://www.nature.scot/doc/standing-advice-planning-consultations-bats [Accessed: August 2025]

[51] Shawyer, C.R. (2011). *Barn Owl Tyto alba Survey Methodology and Techniques for use in Ecological Assessment*. Wildlife Conservation Partnership. Available online at: https://cieem.net/wp-content/uploads/2023/01/Barn-Owl-Survey-Methodology-Revised-2012Final.pdf [Accessed: August 2025]

[52] Prinsen, H.A.M. et al. (2012). *Guidelines on How to Avoid or Mitigate Impact of Electricity Power Grids on Migratory Birds in the African-Eurasian Region.* AEWA Conservation Guidelines No. 14. Available online at: https://www.unep-aewa.org/sites/default/files/publication/ts50_electr_guidelines_03122014.pdf [Accessed: August 2025]

8.3.5 A summary of Consultation responses relevant to ecology and ornithology interests is presented in **Table 8.1** below.

Table 8.1 : Consultation Responses of Relevance to Ecology and Ornithology

Consultee	Response and Date	Action
Scottish Environment Protection Agency (SEPA)	**29 March 2017. Routeing Consultation** No issues with the preferred route. Recommendations provided on construction practices considering watercourse crossings, peat and an invasive non-native species (INNS): American signal crayfish	The Environmental Impact Assessment Report (EIAR) sets out embedded mitigation in consideration of these topics.
SEPA.	**21 March 2019-Scoping response** All issues relevant to SEPA's remit appear to be scoped in. In response to SPEN's request to answer the questions within the Scoping Report we have outlined further information requests in the Appendix. Notwithstanding this to avoid delay and potential objection, the information outlined in the attached appendix must be submitted in support of any application. Site design may be affected by pollution prevention requirements and hence we strongly encourage The applicant to engage in pre-CAR application discussions with a member of the regulatory services team in your local SEPA office.	These topics are assessed in the EIAR, including within this Chapter and **Chapter 10: Hydrology, Hydrogeology, Geology and Soils.**
	Engineering activities which may have adverse effects on the water environment The Site layout must be designed to avoid impacts upon the water environment. Where activities such as watercourse crossings, watercourse diversions or other engineering activities in or impacting on the water environment cannot be avoided then the submission must include justification of this and a map showing: • All proposed temporary or permanent infrastructure overlain with all lochs and watercourses. • A minimum buffer of 50 m around each loch or watercourse. If this minimum buffer cannot be achieved each breach must be numbered on a plan with an associated photograph of the location, dimensions of the loch or watercourse and drawings of what is proposed in terms of engineering works.	Watercourses, watercourse buffers (50 m) and other sensitive hydrology related receptors are presented in **Figure 10.1: Hydrology Overview.** The avoidance of watercourses and water features (where possible) has been integral to the design evolution. Where access necessitates watercourse crossings, construction features have been limited in areas within 50 m of a watercourse as far as possible, for example, reducing the number of access tracks running parallel to watercourses and avoiding where possible track junctions being constructed in these zones. Any watercourse crossings will be in accordance with SEPA's guidance on Construction of River Crossings Good Practice Guide. It is highlighted that all water crossings structures required for access will be

Consultee	Response and Date	Action
	• Detailed layout of all proposed mitigation, including all cut off drains, location, number and size of settlement ponds.	temporary and limited to the construction phase.
	Disruption to Groundwater Dependent Terrestrial Ecosystems (GWDTE) GWDTE are protected under the Water Framework Directive and therefore the layout and design of the development must avoid impact on such areas. The following information must be included in the submission: a) A map demonstrating that all GWDTE are outwith a 100 m radius of all excavations shallower than 1 m and outwith 250 m of all excavations deeper than 1 m and proposed groundwater abstractions. If micro-siting is to be considered as a mitigation measure the distance of survey needs to be extended by the proposed maximum extent of micro-siting. The survey needs to extend beyond the site boundary where the distances require it. b) If the minimum buffers above cannot be achieved, a detailed site specific qualitative and/or quantitative risk assessment will be required. We are likely to seek conditions securing appropriate mitigation for all GWDTE affected.	A NVC survey has been completed and used to assess the potential for GWDTE within the Site, as outlined in **Table 8.5**. A figure illustrating potential GWDTE communities and their respective buffer zones for 10 m, 100 m and 250 m is presented as **Figure 10.4: Groundwater dependent terrestrial ecosystems**. The occurrence of GWDTE is discussed in **Chapter 10: Hydrology, Hydrogeology, Geology and Soils.**
	Pollution prevention and environmental management One of SEPA's key interests in relation to developments is pollution prevention measures during the periods of construction, operation, maintenance, demolition and restoration. A schedule of mitigation supported by the above site-specific maps and plans must be submitted. These must include reference to best practice pollution prevention and construction techniques (for example, limiting the maximum area to be stripped of soils at any one time) and regulatory requirements. They should set out the daily responsibilities of ECOWs, how site inspections will be recorded and acted upon and proposals for a planning monitoring enforcement officer. Please refer to Guidance for Pollution Prevention (GPPs).	Good practice mitigation and pollution prevention associated with the protection of sensitive hydrology and soils receptors is presented in **Chapter 10: Hydrology, Hydrogeology, Geology and Soils**. Further details are provided in **Appendix 12.1: Schedule of Commitments** and the Outline Construction Environmental Management Plan (CEMP) submitted as part of the Section 37 Application.

Consultee	Response and Date	Action
NatureScot, formerly SNH	**29 March 2017. Routeing Consultation** No issues with the preferred route. Survey methodologies discussed and collision risk for bird species will be a consideration. Existing data to inform Ecology and Ornithology assessment data available from surveys undertaken for other wind farm applications, where there are gaps we recommend additional surveys are undertaken to fill any gaps.	Collision risk has been considered in the EIAR and mitigated where appropriate. A combination of existing data and novel survey efforts has been used to inform this EIAR.
NatureScot, formerly SNH	**9 October 2019-advice on survey validity** Regards longevity of data in respect of changing project timescales delaying EIA (based on a predicted submission of the EIAR at the end of 2020); recommended updating black grouse surveys in 2020 to ensure appropriate mitigation in place before the construction phase.	Black grouse surveys updated in 2021, and valid data for this species are also available from a related project, Quantans Hill Wind Farm, for the period 2018-2019. In addition, a breeding bird verification survey to inform the assessment of the Proposed Development was undertaken in 2022. Although not a species specific survey, some of the survey visits were undertaken at a suitable time of the year and a suitable time of the day to record lekking black grouse.
NatureScot, formerly SNH	**11 January 2021-advice on survey validity** Regards longevity of data in respect of changing project timescales delaying EIA (based on a predicted submission of the EIAR for June 2021); recommended that the consultant use their professional judgement to determine if the ornithological data allows for a robust assessment.	Professional judgement has been applied in the context of data available from related projects with overlapping Study Areas and the likelihood of changing baseline conditions depending on the environmental topic. Where considered necessary, surveys have been updated. A breeding bird verification survey was undertaken in 2022 to provide comparison with the 2017 bird survey results. Flight activity surveys were updated in breeding season 2025 within a specific area informed by previous survey results.
Marine Scotland	**22 June 2017 Routeing Consultation** Provided a link to Marine Scotland Science guidelines considering potential impacts on fisheries related issues associated with onshore wind farms and transmission lines, and encouraged these issues to be considered throughout the proposal.	These issues have been considered in the EIAR.
Galloway Fisheries Trust (GFT)	**11 March 2019 Scoping Response** Generally agree with proposals. Can advise regarding fish and pearl mussel surveys.	The EIAR has scoped in the likely significant environmental effects of the Proposed Development on INNS, including American signal crayfish,

Consultee	Response and Date	Action
	Concerned about scoping out biosecurity for American signal crayfish.	on the surrounding important ecological features and provides mitigation in consideration of these features. GFT were commissioned to undertake electrofishing and freshwater pearl mussel surveys to inform the EIAR, the results of which are outlined in **Appendix 8.4: Fish Baseline.**
Royal Society for the Protection of Birds (RSPB) Scotland	**13 March 2019 Scoping Response** Generally agree with scope however migrating geese and swan species should be maintained in scope due to flight data provided by Wildfowl and Wetlands Trust (WWT) which indicates that the Proposed Development is in direct route of migrating Greenland white-fronted geese and whooper swans.	An assessment of the likely significant effects on migrating geese and swans has therefore been included in **Chapter 8: Ecology and Ornithology.** Geese and swans were considered as Target Species using standard survey effort from VPs of 72 hours per VP. Additional VP effort during spring and autumn migration periods was not considered necessary due to low likelihood of interaction with the OHL for these species.
NatureScot, formerly SNH.	**26 March 2025 Advice on survey validity** Agreed that data was becoming outdated, and gave recommendations for the following areas: Habitats – Agreed that re-surveying habitats which have experienced the greatest change, and combining with existing datasets was a proportionate approach. Protected species – For fish and freshwater pearl mussel, where no significant changes have been made to watercourses, exisiting data remain valid. For other protected species, given that extensive pre-construction surveys will occur, existing data would remain valid. Ornithology – Concern was raised about the age of VP data, stating that if re-surveys are not deemed necessary, this should be made clear why in the EIA report.	Habitats – UKHab and Habitat Condition Assessment (HCA) update surveys conducted in 2025, along with UKHab and NVC surveys on new areas of access track not previously surveyed. Protected species – No action taken, no significant changes deemed to have occurred. Extensive pre-construction surveys to be carried out. Ornithology – vantage point (VP) surveys at two locations completed in the 2025 breeding season (May – July inclusive). A total of 24 hours of coverage at each VP. Also, extensive pre-construction surveys to be carried out.

8.4 Assessment Methodology and Significance Criteria

Scope of the Assessment

8.4.1 The scope of this assessment has been established through a scoping process. Further information can be found in **Chapter 4: EIA Process and Methodology**.

8.4.2 The Chartered Institute of Ecology and Environmental Management (CIEEM) Guidelines for Ecological Impact Assessment[53] (EcIA) state: "*For the purpose of EcIA, 'significant effect' is an effect that either supports or undermines biodiversity conservation objectives for 'important ecological features' or for biodiversity in general*." Therefore, the assessment process does not require consideration of effects on ecological features deemed to be below a predefined nature conservation importance threshold.

8.4.3 The assessment focuses on Important Ecological Features (IEF), which are those which occur within the Proposed Development's Ecological Zone of Influence (EZoI) (see **Extent of the Study Area**), and which have been evaluated to be of Local or greater importance on a predefined geographical scale.

Extent of the Study Area

8.4.4 CIEEM Guidelines for EcIA define the EZoI as the area over which ecological features may be subject to significant effects because of the Proposed Development. This could extend beyond the footprint of the Proposed Development ('transboundary effects').

8.4.5 The EZoI will vary for each ecological feature due to the mobility range of the features being assessed. For example, the EZoI for birds, otters, and bats (which are more mobile) will generally be greater than the EZoI for habitats (which are static). Other factors, such as supporting habitat, connectivity, and sensitivity to disturbance, are considered when determining if a feature falls within the Proposed Development's EZoI.

8.4.6 The Study Areas which have been applied to collect relevant baseline information are summarised below. These have been informed by NatureScot's standing advice for planning consultations[54], relevant species-specific guidelines (**Table 8.8.2**), and consultations (**Table 8.1**). The Study Areas cover all baseline data collected, including data on ecological features scoped out above; in part, these features were scoped out based on the evidence provided by the baseline data.

8.4.7 With regard to designated sites, the Study Areas have been defined based on a combination of their statutory protection and geographical scale of importance (e.g., European, national, local), as well as considering the potential for effect pathways on qualifying interests (e.g., range of a qualifying species).

8.4.8 The original ornithology surveys in 2017-2018 were undertaken before the selection of the Preferred Route, therefore covering a larger Study Area than required for the Preferred Route. The Study Areas applied follow industry best practice:

- European and international designated sites – Site plus surrounding 10 km (20 km for European sites with geese as qualifying interests[55]);
- National and local designated sites and non-statutory designated sites – Site and up to surrounding 2 km area;
- Extended Phase 1 habitat survey-preferred route option corridor plus 50 m buffer;
- NVC Survey Area – Preferred route corridor plus an additional 100 m buffer, which was extended up to 250 m in places where excavations for works may be more than 1 m deep (2017) and Site plus surrounding 100 m area (2022). Update surveys were undertaken in September 2022 and again in 2025. During these surveys, the NVC survey data were updated to capture any changes in habitat, and the Phase 1 habitat survey was converted to the UK Habitat Classification system (UKHab). Following consultation with SEPA, it was agreed that, as the Proposed Development comprised wood poles, the poles were unlikely to permanently alter groundwater flows. Should any alterations occur, such as during any required temporary dewatering, it would be expected that natural conditions of groundwater level and

[53] CIEEM (2024). *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine, Version 1.3.* Available online at: https://cieem.net/wp-content/uploads/2018/08/EcIA-Guidelines-v1.3-Sept-2024.pdf [Accessed: August 2025]

[54] NatureScot. (n.d). *Planning and development: standing advice and guidance documents.* Available online at: https://www.nature.scot/professional-advice/planning-and-development/planning-and-development-advice/planning-and-development-standing-advice-and-guidance-documents [Accessed: August 2025]

[55] NatureScot former SNH (2016). *Assessing Connectivity with Special Protection Areas (SPAs).* Available online at: https://www.nature.scot/sites/default/files/2022-12/Assessing%20connectivity%20with%20special%20protection%20areas.pdf [Accessed: August 2025]

flow would recur close to these locations in a short timeframe. Considering this, a reduced Survey Area of 100 m around the preferred alignment was agreed for the 2022 update habitat surveys;

- ine Marten Survey Area – Site plus surrounding 250 m area, focussed on sheltered areas with connectivity (e.g., lines of trees, woodland);
- Red Squirrel Survey Area – Site plus surrounding 100 m area, focussed on woodland;
- Otter Survey Area – Site plus surrounding 250 m area, focussed on burns and ditches;
- Water Vole Survey Area – Site plus surrounding 100 m area, focussed on burns and ditches;
- Badger Survey Area – Site plus surrounding 100 m area;
- Bat Survey Area- Site plus surrounding 30 m area;
- Black grouse survey area- OHL route corridor options plus surrounding 1.5 km area;
- Breeding Bird Survey Area – OHL route corridor options plus surrounding 500 m area;
- Forest Raptor Survey Area- OHL route corridor options plus surrounding 500 m area;
- Nightjar Survey Area- OHL route corridor options plus surrounding 500 m area where suitable habitat present;
- Flight Activity Survey Area - OHL route corridor options plus a 500 m area where there was no valid coverage from proposed developments with overlapping Study Areas. For the 2025 flight activity surveys, VP 1 from the original surveys was reused, while a new VP was added. The new VP was primarily designed to focus on a Study Area that overlaps the Study Areas for Quantans Hill Wind Farm. Previously, the assessment of the Proposed Development used data collected from surveys to inform the overlapping project. Given that the data collected for the overlapping project has become outdated, it was necessary to collect new data in 2025. VP 2 and VP 3 from the original 2017-2018 flight activity surveys did not receive updated coverage. These VPs were in the Water of Ken Valley. Based on previous surveys, there was low activity from the Target Species across commercial forestry in this area. Furthermore, the topography reduces the likelihood of collision risk; in this section, the route is in a low-lying valley surrounded by steep hills. Birds commuting across the valley at height are typically above collision risk; maximum predicted height of the OHL is 15.1 m; and
- Breeding Bird Verification Survey-Site plus surrounding 500 m area.

2025 Habitat Update Surveys

8.4.9 Following a review of the 2022 survey data, a rapid assessment approach was taken for much of the preferred route corridor to undertake a Habitat Condition Assessment, whereby previous recorded habitats were verified as still present or updated to reflect any changes since the 2022 surveys.

8.4.10 Sampling of habitats previously assessed in 2022 was undertaken whilst walking a transect through the route corridor, largely omitting areas of plantation forestry, and newly planted trees on acid grassland/purple moor-grass mosaics, and instead focusing on assessing those more complex mosaics of habitats, including wetland communities of potential peatland and GWDTE interest, as a priority.

8.4.11 This rapid assessment approach was taken for the new access tracks, whereby NVC surveys were not undertaken for the following locations:

- the central section of the western access track and the southern half of the central access track, which were dominated by sheep-grazed fields and new plantation woodland;
- the central and northern sections of the eastern access track, which were dominated by sheep-grazed fields and small areas of fen and bracken;
- newly planted plantation woodland on acid grassland; and
- replanted areas of felled plantation woodland.

Method of Baseline Data Collation

8.4.12 A desk study was undertaken to identify available information for the wider area in which to contextualise the results of the field surveys. Freely downloadable corporate datasets were searched for information regarding the presence of statutory designated sites within 2 km of the Site in accordance with the CIEEM EcIA Guidelines. SSSI, National Nature Reserves (NNR) (collectively referred to as 'nationally designated sites') or locally designated sites (e.g. Local Nature Reserve (LNR), Local Wildlife Site (LWS)) were identified using SNH Site Link Portal. This search was extended to 10 km for Natura 2000 sites (Special Areas of Conservation (SAC) and SPA) and internationally designated Ramsar sites, collectively referred to as European sites. The 10 km search area also incorporated Important Bird Areas (IBAs). Where European sites listed geese as qualifying species, the search area was extended to 20 km based on the predicted maximum foraging range for pink-footed *Anser brachyrhynchus* and greylag geese *Anser anser*[55].

8.4.13 Desk study to inform the ornithology baseline included reference to survey data from proposed developments with overlapping Study Areas. The most relevant of these were surveys undertaken to inform the assessment of the proposed Quantans Hill Wind Farm in 2018-2019 (Vattenfall Wind Power Ltd, 2022)[56].

8.4.14 Full details of survey methodology are provided in the Technical Appendices listed in **Section 8.1**. A summary of the surveys undertaken to inform the EIAR is provided in **Table 8.8.2** below.

Table 8.8.2: Summary of species surveys

Survey Type(s)	Survey Date(s)	Guidance Followed
Flight activity	March 2017-March 2018 May 2025-July 2025 (four visits)	NatureScot (formerly SNH) (2025) [57] and 2017[58]. Assessment and mitigation of power lines and guyed meteorological masts on birds
Black grouse *Tetrao tetrix*	April-May 2017 (six dates) and 5th May 2021.	Gilbert, G et al (1998). Bird Monitoring Methods: A Manual of Techniques for UK Key Species. Bird Monitoring Methods. RSPB, Sandy[59].
Forest raptor survey	April-July 2017 (four visits)	Hardey J et al. (2013). Raptors. A Field Guide for Surveys and Monitoring. The Stationary Office, Edinburgh[60].
Breeding Bird Survey	April-July 2017 (four visits)	NatureScot (formerly SNH), 2016, 2017[56, 57] and Brown, A.F. and Shepherd, K.B. (1993). A method for censusing

[56] Energy Consents Unit (The Scottish Government) (2023). *Quantans Hill Farm (ECU00003399).* Available online at: Scottish Government - Energy Consents Unit - Application Details [Accessed: August 2025]

[57] NatureScot (formerly SNH) (2025). *Assessment and mitigation of power lines and guyed meteorological masts on birds*. Available online at: https://www.nature.scot/doc/guidance-assessment-and-mitigation-impacts-power-lines-and-guyed-meteorological-masts-birds [Accessed: August 2025]

[58] NatureScot (2017). *Recommended bird survey methods to inform impact assessment of onshore windfarms*. Available online at: https://www.nature.scot/doc/recommended-bird-survey-methods-inform-impact-assessment-onshore-windfarms [Accessed: August 2025]

[59] Gilbert, G., et al. (1998). *Bird Monitoring Methods: A Manual of Techniques for UK Key Species. Sandy: RSPB.*

[60] Hardey, J., et al. (2013). *Raptors: A Field Guide for Surveys and Monitoring. 3rd edn. Edinburgh: The Stationery Office.* Available online at: Advice | Scottish Raptor Monitoring Scheme [Accessed: August 2025]

Survey Type(s)	Survey Date(s)	Guidance Followed
		upland breeding waders', Bird Study, 40(3), pp. 189–195[61].
Nightjar *Caprimulgus europaeus*	June-July 2017 (two visits)	Gilbert, G et al (1998). Bird Monitoring Methods: A Manual of Techniques for UK Key Species. Bird Monitoring Methods. RSPB, Sandy[62].
Breeding bird verification survey	April-June 2022 (three visits)	NatureScot (formerly SNH), 2016, 2017[56, 57].
Otter *Lutra lutra*	August-October 2018. April, May and August 2022. August and September 2023.	Chanin, P. (2003). Monitoring the otter Lutra lutra. Conserving Natura 2000 Rivers Monitoring Series No. 10. English Nature, Peterborough[63].
Badger *Meles meles*	August-October 2018. April, May and August 2022. August and September 2023.	Harris, S. et al. (1989). Surveying Badgers. Mammal Society.[64]
Pine Martin *Martes martes*	August-October 2018. April, May and August 2022.	Cresswell, W.J. et al. (2012). UKBAP Mammals: Interim Guidelines for Survey Methodologies, Impact Assessment and Mitigation. The Mammal Society[65]
Red squirrel *Sciurus vulgaris*	August-October 2018. April, May and August 2022.	Cresswell WJ et al. (2012). UKBAP Mammals: Interim Guidelines for Survey Methodologies, Impact Assessment and Mitigation. The Mammal Society, Southampton[66]
Bats (Preliminary Roost Assessment)	August-October 2018. April, May and August 2022.	Collins, J. (2016). Bat Surveys: Good Practice Guidelines. 3rd edition. London: Bat Conservation Trust[67]

[61] Brown, A.F. and Shepherd, K.B. (1993). *A method for censusing upland breeding waders', Bird Study,* 40(3), pp. 189–195. Available online at: https://www.tandfonline.com/doi/pdf/10.1080/00063659309477182 [Accessed: August 2025]

[62] Gilbert, G., et al. (1998). *Bird Monitoring Methods: A Manual of Techniques for UK Key Species. Sandy: RSPB.*

[63] Chanin, P. (2003). *Monitoring the otter Lutra lutra. Conserving Natura 2000 Rivers Monitoring Series No. 10. Peterborough: English Nature*. Available online at: Monitoring the Otter - IN112 [Accessed: August 2025]

[64] Harris, S. et al. (1989). *Surveying Badgers. Mammal Society*. Available online at: Surveying Badgers (The Mammal Society) | CIEEM [Accessed: August 2025]

[65] Cresswell, W.J. et al. (2012). *UKBAP Mammals: Interim Guidelines for Survey Methodologies, Impact Assessment and Mitigation. The Mammal Society.*

[66] Cresswell, W.J. et al. (2012). *UKBAP Mammals: Interim Guidelines for Survey Methodologies, Impact Assessment and Mitigation. The Mammal Society.*

[67] Collins, J. (2016). *Bat Surveys: Good Practice Guidelines. 3rd edition. London: Bat Conservation Trust*. Available online at: Bat Survey Guidelines 2015 [Accessed: August 2025]

Survey Type(s)	Survey Date(s)	Guidance Followed
Water vole *Arvicola amphibius*	August-October 2018. April, May and August 2022[68].	Strachan, R. et al. (2011) The Water Vole Conservation Handbook. 3rd edn. Oxford: WildCRU[69]
Extended Phase 1 habitat survey	August-September 2017	JNCC[70]
National Vegetation Classification (NVC)	September 2017, August 2018 and July 2025 (in areas where significant change may have occurred)	Rodwell, J. (2006). NVC: Users' Handbook. Peterborough: JNCC[71]
NVC verification and UK hab conversion	September 2022	Rodwell, J. (2006). NVC: Users' Handbook. Peterborough: JNCC[71] and UK Hab Ltd (2020)[72].
UKHab and HCA surveys	May 2025-July 2025	UKHab Ltd. (2020)[73].
Fish and Freshwater Pearl Mussel (FWPM) *Margaritifera margaritifera* Galloway Fisheries Trust (GFT) on behalf of WSP	2019	Fish: Scottish Fisheries Co-ordination Centre (SFCC) FWPM: Young, M.R., et al. (2003). Monitoring the Freshwater Pearl Mussel, Margaritifera margaritifera. Conserving Natura 2000 Rivers Monitoring Series No. 2. Peterborough: Natural England[74].

Assessment Methodology

8.4.15 It is broadly accepted that the significance of an effect reflects the relationship between two factors: the value, importance or sensitivity of the resource or system that might be impacted; and the magnitude of the impact on that resource and system, (i.e., the actual change taking place to the environment).

[68] Excluded from 2023 Protected Species Survey due to lack of evidence from previous surveys

[69] Strachan, R. et al. (2011) *The Water Vole Conservation Handbook. 3rd edn. Oxford: WildCRU.*

[70] JNCC (2010). *Handbook for Phase 1 Habitat Survey: A Technique for Environmental Audit*. Available online at: Handbook for Phase 1 habitat survey – a technique for environmental audit (2010) | JNCC Resource Hub [Accessed: August 2025]

[71] Rodwell, J. (2006). *National Vegetation Classification: Users' Handbook.* Peterborough: JNCC. Available online at: National Vegetation Classification: Users' handbook [Accessed: August 2025]]

[72] UKHab Ltd. (2020). *UK Habitat Classification, Version 1.1.* Available online at: https://www.ukhab.org/ [Accessed: August 2025]

[73] UKHab Ltd. (2020). *UK Habitat Classification, Version 1.1.* Available online at: https://www.ukhab.org/ [Accessed: August 2025]

[74] Young, M.R., et al. (2003). *Monitoring the Freshwater Pearl Mussel, Margaritifera margaritifera*. Conserving Natura 2000 Rivers Monitoring Series No. 2. Peterborough: Natural England. Available online at: https://publications.naturalengland.org.uk/file/115010 [Accessed: August 2025]

8.4.16 The CIEEM Guidelines for EcIA[75] advise that a significant effect is broadly an effect which either supports or undermines the biodiversity conservation objectives or conservation status of the IEFs and merits assessment. The significance of an effect has been defined as either beneficial or adverse.

8.4.17 For adverse effects relating to species, conservation status defined in the Guidelines for EcIA is "*determined by the sum of the influences acting on the species concerned that may affect the long-term distribution and abundance of its populations within a given geographical area*".

- a beneficial effect would be considered to be ecologically significant if the Proposed Development causes;
- restoration of desired conservation status for a species population; and/or
- restoration of a site's integrity (where this has been undermined).

Significance Criteria

8.4.18 The significance has been quantified on a geographical scale, which does not necessarily equate to the geographical context in which an IEF has been considered important. For example, although a habitat type may represent 20% of the resource at a regional level and hence be considered of value at this scale, the Proposed Development might affect only a portion of the habitat representing 1% of the resource in the Region, hence the effect would not be considered significant at this scale. However, that 1% may represent 20% of the resource at a Local scale and therefore the effect at this geographic scale would be considered significant.

8.4.19 In accordance with CIEEM Guidelines for EcIA, the sensitivity or importance of ecological receptors, hereafter referred to as ecological features, is determined by considering factors including but not limited to naturalness, rarity, contribution to the functioning of ecosystems, size (of habitat or species population), irreplaceability, connectivity, habitats or species in decline, and large concentrations of species or habitat types considered rare in a wider context. A level of importance is assigned to each ecological feature using the geographical frame of reference set out in **Table 8.3** below.

Table 8.3: Evaluation criteria for level of ecological importance

Geographical Context	Criteria/Example
International (Europe)	Extremely rare (endangered), potentially extremely vulnerable to change, of international importance or recognition, very limited potential for substitution. For example: • SPA, SAC, Wetland of International Importance (Ramsar); or area meeting the criteria for designation as such, as a candidate or proposed Site; • considerable extents of a priority habitat type listed in Annex I of the Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora, or smaller areas of such habitats that are essential to maintain the viability of a larger area; • any regularly occurring population of an internationally important species, which is threatened or rare in the UK, i.e., IUCN 'Red List' species, or any species of uncertain conservation status or of global conservation concern; and • a regularly occurring significant population/number of any internationally important species.

[75] CIEEM (2018). *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine, Version 1.3.* Available online at: Combined-EcIA-guidelines-2018-compressed.pdf [Accessed: August 2025]

Geographical Context	Criteria/Example
National (Scotland)	Rare, of national importance or recognition, limited potential for substitution, highly vulnerable to change. For example: • SSSI, NNR, National Park; • Ancient Woodland; • notified species/habitats of a nationally designated site; • SBL habitats covering viable area, or a smaller area which is vital for the viability of a larger area; • a regularly occurring significant population/ number of any nationally important species e.g., listed on Wildlife and Countryside Act 1981 (as amended); and • species present in nationally important numbers (e.g., >1% UK population).
Regional (Dumfries and Galloway Region)	Somewhat rare or vulnerable, difficult to substitute. For example: • internationally or nationally important habitat that is currently degraded but has the potential for restoration; • sites falling slightly below the criteria for selection as a national designated site; • any regularly occurring significant population of 'Red List' BoCC[76] or South West Scotland Environmental Information Centre (SWSEIC) Locally Important Species, e.g., present in regionally important numbers (e.g., >1% of the regional population); and • viable areas of SWSEIC Important Habitat, or smaller areas of such habitat which are essential to maintain the viability of a larger whole.
District [77]	Difficult to substitute at a district level, rare or unusual at the district level but well represented elsewhere. For example: • Sites that the Local Authority has determined meet the published ecological selection criteria for designation, including Local Nature Conservation Sites (LNCS); • areas identified of conservation interest by organisations such as Scottish Wildlife Trust (SWT), Buglife, Butterfly Conservation Trust (BCT); • or features that are scarce within the Local Authority area which appreciably enrich the habitat resource; • areas of internationally or nationally important habitats which are degraded and have little or no potential for restoration; and • a regularly occurring population of a species which is large enough to be of district level importance.

[76] Eaton, M. et al. (2021). *Birds of Conservation Concern 5. British Birds*, 114, pp. 723–747. Available online (on subscription) at: https://britishbirds.co.uk/content/status-our-bird-populations [Accessed: August 2025]

[77] District level is not a level stated in CIEEM guidance but is considered a meaningful scale of assessment in the context of local policy objectives.

Geographical Context	Criteria/Example
Local	Locally important, difficult to substitute at a local level, but well represented elsewhere in the district/ region. For example: • a species-rich, good condition example of a common or widespread habitat in the local area; • a regularly occurring population of a species which is large enough to be of local level importance, or of a species scarce in the local area; and • habitats or species considered to enrich the ecological resource within the local context.
Neighbourhood (Site and its vicinity, including areas of habitats contiguous with or linked to those on Site)	Areas of heavily modified or managed vegetation of low species diversity or low value as habitat to species of nature conservation interest. • common and widespread species.
Negligible	No intrinsic nature conservation value associated with the habitat or species. Generally, these are areas of hard standing or buildings with no nature conservation interest. Invasive and non-native species which threaten native habitats or species are also included here.

Characterising the Potential Ecological Impact

8.4.20 Change can be described by a range of characteristics. For each IEF, the impacts of construction and operational aspects of the Proposed Development and their resultant effects on IEFs may be characterised by the following.

- Beneficial or adverse – whether the impact will result in net loss or degradation of an IEF or whether it will enhance or improve it.
- Extent – the spatial area over which an impact occurs.
- Magnitude – the size or intensity of the impact measured in relevant terms, e.g., number of individuals lost or gained, area of habitat lost or created or the degree of change to existing conditions (e.g. noise or lighting levels).
- Duration – the length of time over which the impact occurs. This may be permanent or temporary; short-term (e.g., construction), medium-term (e.g., 7-10 years), or long-term (e.g., duration of the operational phase).
- Reversibility – the extent to which impacts are reversible either through natural regeneration and succession or through active mitigation.
- Timing and frequency – consideration of the timing of events in relation to ecological change, e.g., some impacts may be of greater magnitude if they take place at certain times of year (e.g., breeding season). The extent to which an impact is repeated may also be of importance.

8.4.21 These factors are brought together to assess the magnitude of the impact on a particular IEF and, wherever possible, the magnitude of the impact is quantified. Professional judgment based on knowledge and experience on similar schemes is then used to assign the impacts on the IEF to one of four classes of magnitude. A matrix approach has not been applied to this assessment, in line with Guidelines for EcIA.

Classes of Impact Magnitude

8.4.22 A matrix approach has not been applied to this assessment, in line with CIEEM Guidelines for EcIA; this assessment of significance has been prepared using professional judgement. Considering the level of importance and sensitivity of each IEF alongside the magnitude of impacts, this assessment concludes resultant effects to be either:

- Major Beneficial or Major Adverse - where the Proposed Development would cause a significant improvement (or deterioration) to the existing environment; considerable effects (by extent, duration or magnitude) or of more than local significance or breaching identified standards or policy;
- Moderate Beneficial or Moderate Adverse - where the Proposed Development would cause a noticeable improvement (or deterioration) to the existing environment; limited effects which may be considered significant;
- Minor Beneficial or Minor Adverse effect - where the Proposed Development would cause a small or barely perceptible improvement (or deterioration) to the existing environment; slight, very short or highly localised effects; and
- Neutral or Negligible - no discernible improvement or deterioration to the existing environment.

8.4.23 Potential impacts are characterised initially in the absence of any mitigation, except where this is integral to the design of the Proposed Development.

8.4.24 Any additional mitigation or compensation proposed is identified, and its likely effectiveness is assessed. An indication of the confidence with which predictions of potential impacts are made is also given.

Significance of Effects

8.4.25 The CIEEM Guidelines for EcIA define an ecologically significant effect as: *"…an effect that either supports or undermines the biodiversity conservation objectives for important ecological features or for biodiversity in general."*

8.4.26 The ecological significance of the predicted likely significant environmental effects on IEFs arising from the identified impacts of the Proposed Development, including embedded and additional mitigation measures, is assessed as adverse or beneficial.

8.4.27 For species, conservation status defined in the Guidelines for EcIA is *"determined by the sum of the influences acting on the species concerned that may affect the long-term distribution and abundance of its populations within a given geographical area"*. For species, a beneficial effect would be ecologically significant if the Proposed Development causes restoration of desired conservation status for a species population; and/or restoration of a Site's integrity (where this has been undermined).

8.4.28 The decision as to whether the conservation status of an IEF is likely to be compromised is made using professional judgement based on an analysis of the predicted impacts of the Proposed Development (including consideration of the specific parameters outlined above).

8.4.29 Following the assessment of how each IEF may be impacted and whether the impact has an ecologically significant effect, the Guidelines for EcIA recommend that significant effects be qualified with reference to an appropriate geographic scale. The geographical scale of significance has been used as specified within the Guidelines for EcIA, both to evaluate the receptor and to assess the scale at which an effect is significant. An ecologically significant effect is defined as an effect (adverse or beneficial) on the integrity of a defined Site or ecosystem and/or the conservation status of habitats or species within a given geographical area. The significance of effects upon features is determined considering their value at a geographic scale (as noted above); however, any given effect may be significant at a reduced scale depending on the extent and magnitude of the effect.

Limitations and Assumptions

8.4.30 The main limitations to establishing the ecological baseline relate to land access. The baseline technical appendices (**Appendix 8.1** to **Appendix 8.6)** provide specific details on the limitations associated with access and how these have been addressed, as well as other (sometimes associated) limitations such as the timings of surveys. None of the limitations associated with access is considered to have affected the robustness of this assessment.

8.4.31 The use of rapid assessments may have resulted in missing some important data, such as small areas of important habitat or INNS. The rapid assessment approach allowed surveyors to focus updated survey effort on those areas that were considered to be most likely to have substantially changed since previous surveys were undertaken and to prioritise a more detailed habitat survey of areas of potential GWDTE and potential priority peatland. Areas not surveyed were not considered to have undergone any substantial changes since initial surveys were undertaken and would therefore not affect the assessment presented in this report.

8.4.32 Some areas of the Site could not be fully accessed for reasons of health and safety; in these instances, efforts were made to record from the margins, or from higher ground that afforded good views. Extrapolation of broad habitat characteristics representative of the habitat mosaic observed has been used where gaps existed. Overall, this was the exception and therefore is not considered to be a limitation to the assessment presented within this report.

8.4.33 Considering the original ornithological survey effort, the original survey data from 2017-2018 now exceeds the threshold of five years recommended by NatureScot for ornithological survey data validity[78]. This is not considered a significant constraint as WSP undertook a flight activity update survey in 2025 and a breeding bird verification survey in 2022, which indicated a broadly similar baseline to the 2017-2018 surveys and updated findings from surveys to inform new proposals for a Wind Farm at Quantans Hill (Vattenfall Wind Power Ltd, 2022) also support this.

8.4.34 Considering the survey effort for protected species, data for all species is a minimum of 22 months old (badger and otter), and a maximum of 35 months old (pine marten, red squirrel, bats and water vole) and is therefore out of date in accordance with CIEEM guidelines[79]. It has been agreed with consultation from NatureScot that the use of extensive pre-construction surveys by a qualified ecologist is suitable mitigation for this (**Table 8.1**) and therefore it is not considered a significant limitation. The requirement for pre-construction surveys will be included within the Outline CEMP, produced to support the Section 37 application.

8.5 Baseline Conditions

8.5.1 Please refer to the baseline technical appendices (**Appendix 8.1** to **Appendix 8.4)** for full details.

Designated Sites

8.5.2 No European, nationally, or locally designated sites were identified within the Site. Furthermore, no nationally designated sites were identified within 2 km of the Site.

8.5.3 The following internationally designated sites were identified within the search area:

- Galloway Forest Park IBA. Approximately 1.9 km south of the Proposed Development. A large non-statutory designated area (58,295 ha). The IBA designation process was originally triggered due to the importance of the area for black grouse, *peregrine Falco peregrinus* and short-eared owl *Asio flammeus.* The IBA comprises lochs, forest, moorland, and mountain habitats that mostly align with the boundary of the Galloway Forest Park.;
- Merrick Kells SAC. Located approximately 7 km south-west of the Site. Qualifying features of Merrick Kells SAC include freshwater habitats, upland habitats, and the presence of otter.; and
- Loch Ken and River Dee Marshes SPA. Approximately 16 km south of the Proposed Development. This SPA is an internationally important site for wintering Greenland white-fronted goose *Anser albifrons flavirostris* and greylag goose *Anser anser*.

8.5.4 The above designated sites are illustrated in **Figure 8.1: European Statutory Designated Sites**.

Habitats

8.5.5 A description of each Primary Habitat recorded in the 2025 surveys is listed in **Table 8.4** below, including identification of priority habitats: those identified as potentially an Annex I habitat under the EU Habitats Directive or as an SBL habitat under the Nature Conservation (Scotland) Act 2004[80].

[78] Gilbert et al (1998). Bird Monitoring Methods. (1998). Bird Monitoring Methods. RSPB, Sandy.

[79] CIEEM,(2019). *Advice note of the lifespan of ecological reports and surveys*. Available online at: https://cieem.net/wp-content/uploads/2019/04/Advice-Note.pdf [Accessed: August 2025]

[80] While superseded by the SBS, NatureScot still use and place importance on the SBL, which provides a suitable list of habitats for this Site.

8.5.6 The 2025 UKHab and HCA update surveys confirmed much of the Study Area remained in a similar composition and condition as previously recorded, as shown in **Appendix 8.1: Habitats Baseline**, with exceptions being mostly areas of plantation woodland (**Figure 8.6.1.)**. Details can be found in **Appendix 8.6: 2025 Update Surveys.**

8.5.7 A summary of the NVC communities recorded in the 2025 Survey Area and their conservation status is provided in **Table 8.5** below[81]. Wetland communities which have the potential to be GWDTE have been noted in **Table 8.5**, depending on the hydrogeological setting and with reference to SEPA Guidance on Assessing the Impact of Developments on GWDTE[82]. Further assessment of GWDTE is included in **Chapter 10: Hydrology, Hydrogeology, Geology and Soils.**

8.5.8 Full details of the 2025 NVC surveys can be found in **Appendix 8.6: 2025 Update Surveys**. The NVC communities and target notes in **Table 8.5** are illustrated in **Figure 8.3.2** and **Table 8.3.1** within that report.

Table 8.4: UKHab Results for the Route Corridor and Access Tracks

Primary Habitat	Description	Priority Habitat
f1a Blanket bog	The most extensive areas of this habitat type were recorded in the western part of the UKHab route corridor Survey Area between Furmiston and Holm Hill, and within the eastern part of the Survey Area north of Furmiston Craig. Areas were also recorded within the UKHab access track Survey Area in the northern half of the central access track.	Annex I Habitat H7130 SBL Habitat Blanket Bog
f1a6 Degraded blanket bog	This habitat type was recorded in mosaics with f1a in the central section of the UKHab route corridor Survey Area near Furmiston and the northern half of the central access track.	Annex I Habitat H7130 SBL Habitat Blanket Bog
f2 Fen, marsh and swamp	Fen, marsh and swamp habitats assigned to this broad category were recorded throughout the UKHab route corridor Survey Area, mainly in the central and extreme north, and small areas were recorded within the UKHab access track Survey Area.	SBL Habitat Fen, marsh and swamp
f2a Lowland fens	Very small areas of this habitat were found in the UKHab route corridor Survey Area in the Water of Ken Valley.	Annex I Habitat H7140 SBL Habitat Lowland fens
f2b Purple moor grass and rush pasture	This habitat type was widely distributed, with the largest areas in the west and extreme north of the UKHab route corridor Survey Area.	Annex I Habitat H6410 SBL Habitat Purple moor-grass and rush pasture
f2c Upland flushes, fens and swamps	Very small areas of this habitat were found in the west and central areas of the UKHab route corridor Survey Area and the UKHab access track Survey Area within the western and central access tracks.	Annex I Habitat H7140 SBL Habitat

[81] NOTE: This table is the most up to date collection of NVC data and should be used instead of data provided in **Appendix 8.1 Lorg Habitats Baseline .**

[82] SEPA (2024). *Guidance on Assessing the Impacts of Developments on Groundwater Dependent Terrestrial Ecosystems.* Available online at: guidance-on-assessing-the-impacts-of-developments-on-groundwater-dependent-terrestrial-ecosystems.docx [Accessed: August 2025]

Primary Habitat	Description	Priority Habitat
		Upland flushes, fens and swamps
g1b6 Other upland acid grassland	Acid grassland, mainly comprising g1b6 other upland acid grassland, was found in isolated pockets in the west and extreme north of the UKHab route corridor Survey Area, and within the UKHab access track Survey Area in the western, central and eastern access tracks.	N/A
g1c Bracken	Bracken was recorded throughout the UKHab route corridor Survey Area UKHab access track Survey Area.	N/A
g2b Upland calcareous grassland	This habitat type was recorded in two areas scattered within acid grassland, on the edges of exposed rock within the UKHab access track Survey Area in the eastern access track.	Annex I Habitat H6210 SBL Habitat Upland calcareous grassland
g3 Neutral grassland	Neutral grassland comprising predominantly g3c other neutral grassland was widely scattered in small pockets throughout the UKHab route corridor Survey Area. Small areas of g3c8 Holcus-Juncus neutral grassland were also recorded in the UKHab access track Survey Area in the western access track and the central access track.	N/A
h1b Upland heathland	Small areas of heathland, including h1b6 wet heathland with cross-leaved heath -upland were recorded in isolated pockets of the UKHab route corridor Survey Area, and within the UKHab access track Survey Area in the central and eastern access tracks.	Annex I Habitat H4010 SBL Habitat Upland heathland
w1d Wet woodland	W1d wet woodland was restricted to a small area in the north of the UKHab route corridor Survey Area.	Annex I Habitat H91E0/H91D0 SBL Habitat Wet woodland
w1g Other woodland; broadleaved w1h Other woodland; mixed	These woodland habitat types were found in small pockets in the north of the UKHab route corridor Survey Area.	N/A
w2 Coniferous woodland	Coniferous woodland assigned to w2b other Scot's Pine woodland and w2c other coniferous woodland (non-native plantation) occupied extensive areas of the central and northern parts of the UKHab route corridor Survey Area where it mainly comprised commercial forestry plantation. Extensive areas of newly planted young conifer plantation were recorded in the UKHab access track Survey Area throughout the northern half of the western access track, the central areas of the UKHab route corridor, and the central and southern sections of the central access track. Mature and replanted	N/A

Primary Habitat	Description	Priority Habitat
	coniferous plantation was also recorded in the UKHab access track Survey Area along the western side of the eastern access track.	

Table 8.5: NVC Communities and Conservation Status

NVC Habitat Community and sub communities	Description	Priority Peatland[83]	Potential to be GWDTE	Annex I[84]	SBL[85]
Heaths, mires and swamps					
M2 - *Sphagnum cuspidatum/recurvum* bog pool	Primarily found in the NVC route corridor Survey Area in a large, relatively flat area to the north of Furmiston Craig; towards the south-central part of the Survey Area alongside M17.	Yes	No	Active raised bogs H7110/ Depressions on peat substrates H7150	Fens/ Blanket bog/ Lowland raised bog
M4 Carex *rostrata-Sphagnum recurvum* mire	Recorded in a mosaic with M17a in the NVC access track Survey Area within the central access track; excellent quality blanket bog.	No – but note that TN81 is a mosaic of approximately 95% M17a with approximately 5% M4, M17a can be priority peatland	No	H7140 Transition mires and quaking bogs	Fens/ Blanket bog/ Lowland raised bog

[83] NatureScot details their approach to defining priority peatland in guidance that aligns with the National Planning Framework 4 (NPF4). Available online at: https://www.nature.scot/doc/advising-peatland-carbon-rich-soils-and-priority-peatland-habitats-development-management [Accessed: August 2025]

[84] Certain habitats have protection under the EU Habitats Directive (Council Directive 92/43/EEC), transposed in Scotland as the Conservation (Natural Habitats, &c.) Regulations 1994. The Act provides for the identification of sites which are important for habitats (listed as Annex I habitats of the Habitats Directive), known as Special Areas of Conservation (SACs).

[85] Habitats have protection under the Nature Conservation (Scotland) Act 2004. The Act requires Scottish Ministers to produce a Scottish Biodiversity Strategy, including providing a published list of habitats considered to be of principal importance for the purpose of the conservation of biodiversity (referred to as the Scottish Biodiversity List). This list is to be used to assist public bodies to meet section 1 of the Act.

NVC Habitat Community and sub communities	Description	Priority Peatland[83]	Potential to be GWDTE	Annex I[84]	SBL[85]
M6 Carex echinata-Sphagnum recurvum/auriculatum mire M6a, c and d	This habitat type was recorded often in a mosaic with M25a or M23 within the centre of the NVC route corridor Survey Area and the NVC access track Survey Area in the western and central access tracks.	No	Yes	No	Upland flushes, fens and swamps
M10a Carex dioica – Pinguicula vulgaris mire M10a	This habitat type was recorded in one small location within the centre of the NVC route corridor Survey Area.	No	Yes	H7230 Alkaline fens	Fens/ Blanket bog/ Lowland raised bog
M15 Scirpus cespitosus-Erica tetralix wet heath M15a and M15b	This habitat type was frequently recorded in the NVC access track Survey Area as a mosaic with M17 or M25, or U4, and occasionally as a mosaic with M6 or M19. Within the central access track, some areas have been overplanted with trees.	Yes - within the central access track (TN19, TN90, TN94) and possibly within the western access track (TN65)	Yes	Wet heathland with cross-leaved heath H4010	Upland heathland/ Lowland heathland/ Blanket bog/ Lowland raised bog
M17 Trichophorum cespitosum - Eriophorum vaginatum blanket mire M17a and M17c	This habitat type was recorded throughout the central areas of the NVC route corridor Survey Area and the NVC access track Survey Area within the western and central access tracks as a mosaic with M25a in the main. This habitat was typically of good quality with best examples recorded within the central access track.	Yes – all 23 areas TN2, 4, 5, 6, 9, 11, 13, 16, 19, 22, 28, 52, 56, 65, 73, 81, 83, 87, 90, 93 (2 locations) and 94 (2 locations). These were recorded with M17 within the central area of the NVC route corridor Survey Area, and the NVC access track Survey Area – in the western access track and the eastern access tracks -please refer to **Figure 8.6.2 Updated NVC Habitats** and **Figure 8.6.3 Habitat Target Notes** for locations. One exception was TN89 (see GWDTE).	No	Depressions on peat substrates H7150/	Lowland raised bog/ Blanket bog

NVC Habitat Community and sub communities	Description	Priority Peatland[83]	Potential to be GWDTE	Annex I[84]	SBL[85]
M18 - Erica tetralix–Sphagnum papillosum raised and blanket mire	A small area of this community was located towards the centre of the NVC route corridor Survey Area near Furmiston Craig where it was very localised and associated with M20.	Yes	No	Active raised bogs H7110/ Depressions on peat substrates H7150/ Blanket bog H7130/ Degraded raised bog H7120	Fens/ Blanket bog/ Lowland raised bog
M19 Calluna vulgaris - Eriophorum vaginatum blanket mire M19a	Blanket bog recorded within the NVC Access Track Survey Area in the central access track primarily, plus two areas within the central NVC route corridor Survey Area. Within the central area slight hagging was recorded, found in a mosaic with M17 and/or M25.	Yes – all three areas mapped within the central access track (TN73, TN93 and TN94), plus one location within the centre of the Survey Area (TN56)	No	Active raised bogs H7110/ Blanket bog H7130	Fens/ Blanket bog/ Lowland raised bog
M20 Eriophorum vaginatum blanket and raised mire	Recorded as a high-quality habitat in the NVC access track Survey Area within the central access track on a mosaic with M17, and as M20 in the centre of the NVC route corridor Survey Area.	Yes - TN83 in central access track	No	Blanket bog H7130/ Degraded raised bog H7120	Fens/ Blanket bog/ Lowland raised bog
M21 Narthecium ossifragum-Sphagnum papillosum valley mire	Recorded in one location in a mosaic with M17a, within the centre of the NVC route corridor Survey Area	No -TN5	Yes	H7140 Transition mires and quaking bogs H7150 Depressions on peat substrates of the Rhynchosporion	Fens/ Blanket bog/ Lowland raised bog
M23 Juncus effusus/acutiflorus-Galium palustre rush-pasture	Often recorded in a mosaic with M6 / U4a/ M25. Noted in all areas surveyed.	No	Yes	No	Coastal and floodplain grazing marsh/ Purple moor

NVC Habitat Community and sub communities	Description	Priority Peatland[83]	Potential to be GWDTE	Annex I[84]	SBL[85]
M23a and M23b					grass and rush pasture
M25 Molinia caerulea-Potentilla erecta mire M25a and M25b	A variable habitat frequently recorded, often in a mosaic with M17 and M6, within the centre of the NVC route corridor Survey Area and in the NVC access track Survey Area along the central access track.	Yes – in eight locations throughout the centre of the NVC route corridor Survey Area: TN2, TN6, TN11, TN16, TN22, TN28, TN52 and TN56. One further borderline area was recorded at TN9.	No	Blanket bog H7130/ Degraded raised bog H7120	Coastal and floodplain grazing marsh/ Fens/ Purple moor-grass and rush pasture
M27 - Filipendula ulmaria-Angelica sylvestris mire	Small areas of this community were found in the NVC route corridor Survey Area along the edges of the Water of Ken alongside the unnamed road running north to Lorg from the B729.	No	Yes	No	Fens/ Limestone pavements
Grasslands					
CG10 Festuca ovina-Agrostis capillaris-Thymus Praecox grassland	Recorded in two locations in the NVC access track Survey Area to the eastern edge of the eastern access track.	No	Yes	Annex I Habitat H6210	Upland calcareous grassland
MG6 Lolium perenne-Cynosurus cristatus grassland	Recorded infrequently within the NVC access track Survey Area in the western access track.	No	No	No	No
MG9 - Holcus lanatus-Deschampsia cespitosa grassland	Small areas of this community were found along the road verges of the minor road running north from the B729 to Corlae, in the central part of the NVC route corridor Survey Area	No	Yes	No	Coastal and floodplain grazing marsh

NVC Habitat Community and sub communities	Description	Priority Peatland[83]	Potential to be GWDTE	Annex I[84]	SBL[85]
MG10 Holcus lanatus-Juncus effusus rush-pasture	Recorded infrequently within the NVC access track Survey Area in the western access track and within the centre of the NVC route corridor Survey Area.	No	Yes	No	Coastal and floodplain grazing marsh
U4 Festuca ovina-Agrostis capillaris-Galium saxatile grassland U4a and U4b	Frequently recorded in the NVC route corridor Survey Area in a mosaic with M25b and occasionally with M15, MG6 or CG10.	No	No	Species-rich grassland with mat grass, in upland areas H6230	Lowland dry acid grassland
U5a Nardus stricta – Galium saxatile grassland	Recorded in one location along the centre of the NVC route corridor Survey Area in a mosaic with U4b and M25b.	No	No	Species-rich grassland with mat-grass, in upland areas H6230	No
U6a Juncus squarrosus -Festuca ovina grassland	Recorded in one location in the NVC access track Survey Area within the western access track in a mosaic with M15, and in two locations in the centre of the NVC route corridor Survey Area in a mosaic with M25b.	No	Yes	No	No
U13a - Deschampsia cespitosa–Galium saxatile grassland	Recorded in one location within the NVC route corridor Survey Area: in the shadow of conifer plantation and adjacent to the Water of Ken.	No	No	No	No

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Protected Species

8.5.9 The focus of 2023 surveys was species considered most likely to present constraints to the Proposed Development, as informed by previous survey findings: otter and badger. The 2022 survey results are provided for pine marten, red squirrel and bats. Locations of evidence of protected species are shown on **Figure 8.2.1: Confidential Protected Species, Pages 1-4 in Appendix 8.2: Protected Species Baseline**.

8.5.10 For otter and badger, only the most up to date data is illustrated from the latest year of survey in 2023. This assessment has used otter and badger data from the most recent year of the survey (2023) to determine the significance of impacts

8.5.11 Note: As stated in **Paragraph 8.4.98.4.34**, protected species data is now considered out of date. NatureScot has been consulted regarding the validity of data, and it was agreed that the use of extensive pre-construction surveys would remain a sufficient measure to gather data to inform further mitigation if required.

Otter

2022

8.5.12 A total of nine confirmed resting sites were identified within the Study Area during the surveys in 2022. Features included seven couches and two holts. Each feature was characterised by either shelter provided by overhanging banks, cavities/deep holes within river/burn banks, or under tree roots. Each confirmed feature had evidence of otter (spraint and scratch marks) recorded nearby.

8.5.13 Eight potential otter resting sites were identified, which were assessed as being suitable to support resting otter but were not accompanied by any evidence of otter activity. Most confirmed and potential resting sites were recorded on the two large watercourses in the Study Area, the Water of Ken, and the Water of Deugh, with some occurring on smaller tributaries of these two larger watercourses.

2023

8.5.14 A total of 15 confirmed resting sites were identified within the Study Area during the surveys in 2023. The closest of these to the Site was a hover approximately 20 m away and a potential holt approximately 28 m away. Most resting sites identified were couches (above ground resting sites). In addition, another potential holt was recorded approximately 194 m from the Site.

8.5.15 As in 2022, most confirmed resting sites were recorded on the two large watercourses in the Study Area, the Water of Ken, and the Water of Deugh.

8.5.16 Numerous sprainting locations were found during the survey.

Badger

2022

8.5.17 Two active setts were identified, including a five-entrance sett in which two entrances were in use by otter. However, these features were present outwith the Study Area for badger i.e., beyond 100 m from the Site.

2023

8.5.18 Badger evidence was mainly concentrated within plantation woodland and open hillside in the north-east of the Study Area, including field signs such as latrines, snuffle holes and a single badger carcass.

8.5.19 Three setts were found during the survey, one of which was previously recorded as a mammal burrow in 2022 and now has a latrine with fresh dung and no signs of recent excavation. It is considered an outlier sett.

8.5.20 A main sett was recorded approximately 80 m from the Site. The main sett comprised four active entrances, two disused entrances (overgrown) and pathways leading in many directions. The third recorded sett was within 10 m of the main sett and noted as an Annex Sett. This comprised two entrances with recent spoil and guard hairs present.

Pine Marten

2022

8.5.21 Evidence of pine marten presence was recorded in the Study Area in the form of scat at six locations, including two locations alongside the Site in the central part of the Study Area. No dens were recorded but suitable denning habitat comprising woodland, rocky outcrops and buildings was widespread in the Study Area.

2023

8.5.22 No evidence of pine marten was recorded, although this species wasn't subject to targeted surveys in 2023. The focus of 2023 surveys was species considered most likely to present constraints to the Proposed Development, as informed by previous survey findings, otter, and badger.

8.5.23 The Study Area continued to provide suitable habitat for this species.

Red Squirrel

2022

8.5.24 The woodland blocks in the north of the Study Area were immature and, as such, are not considered to provide high-quality habitat for red squirrel. Whilst no feeding stations were identified throughout the Study Area, a potential drey was recorded in the west of the Study Area, approximately 50 m from the Site. However, no evidence of scratching or feeding signs was identified in proximity to this feature.

Bats

2022

8.5.25 Bat roosting habitat was limited within the Study Area, being restricted to residential buildings along the unnamed road in the north-east and scattered copses of trees to the west of the Study Area. Plantation woodland in the Study Area generally provided low bat roosting potential as woodlands had few mature trees with roosting features. Three trees with bat roost potential were identified within the Study Area, including two trees with moderate roost suitability and one tree with low roost suitability.

8.5.26 Farm steadings in the wider area were not inspected but considered to provide moderate – high bat roost potential and are connected to the Site via watercourses, woodland edge habitat and field boundaries. Larger bats, such as noctule and Leisler's may access the Study Area to forage over open ground rather than following linear features.

Water Vole

2022

8.5.27 No water vole evidence was recorded along the watercourses in the Study Area; many of the watercourses were sub-optimal (i.e., Water of Ken) owing to fast water flows and lack of suitable bank profiles and soft substrate within which to burrow.

Other Species Recorded During Protected Species Survey

2023

8.5.28 Several sightings of common lizard were recorded throughout the Site in areas of rough grassland.

INNS

2022

8.5.29 Multiple otter feeding remains containing the carapace of the INNS North American signal crayfish were recorded on the Water of Ken. Based on the number of fresh feeding remains recorded, the species is likely to be long established in this area.

8.5.30 This corresponds with incidental records from the Fish and FWPM survey in 2019, when four North American signal crayfish were caught in the same area.

8.5.31 A small stand of Rhododendron was recorded adjacent to Benloch Burn, which is also an INNS.

Fish and FWPM Surveys 2019

8.5.32 Seven watercourses were identified which could support fish populations along the route of the Proposed Development and were electrofished and checked for FWPM.

8.5.33 Six of the watercourses supported populations of juvenile trout, while four watercourses also supported non-salmonid species: stone loach and minnow. One watercourse did not contain any fish.

8.5.34 The six watercourses with confirmed fish presence were rated as red (very sensitive) using a traffic light system. The rating was because of the presence of a salmonid species (trout): "*Very sensitive for fish at the survey location and pylon associated work could potentially cause a localised and downstream impact on fish populations. Fish rescue required prior to any instream works."*

8.5.35 No FWPM populations were found during surveys.

Ornithology

Ornithological Data Derived from Consultation and Desk Study

8.5.36 During consultation in June 2017, the RSPB stated that they were aware of red kite breeding 600 m south of the proposed OHL route corridor and that satellite tracking data from the Wildfowl and Wetlands Trust (WWT) indicates that this Proposed Development is in the direct route of migrating Greenland white-fronted geese and whooper swans *Cygnus cygnus*. There was no response from Dumfries and Galloway Raptor Study Group (DGRSG).

8.5.37 The results of surveys to inform the Quantans Hill Wind Farm EIA[86], a development which has extensive overlap with the Proposed Development, are summarised below.

8.5.38 Flight activity surveys were undertaken between April 2018 - March 2021[87] and comprised the following:

- Whooper swan. Three fights involving a total of 70 birds, two of the three flights crossed the Proposed Development;
- Pink-footed goose. Six flights involving a total of 263 birds, four of the six flights crossed the Proposed Development. These flights were widely distributed across the entire length of the Proposed Development where survey coverage from the project overlapped between Quantans Hill and Furmiston Craigs. All flights were either at Potential Collision Height (PCH)[88] for the overlapping project (50 m-250 m) or above. In either case, the flights were above the height of the Proposed Development;
- Greylag goose. Four flights involving a total of 11 birds. Three of the four flights crossed the Proposed Development at the eastern end of the overlapping coverage between Knockwhirn and Furmiston Craigs;
- Black grouse. Two flights involving two birds which did not cross the Proposed Development;
- Golden eagle. One flight involving one bird, which did not cross the Proposed Development;
- Red kite. 132 flights involving 152 birds. Flights were frequent and widespread across the entire length of the Proposed Development where survey coverage from the project overlapped between Quantans Hill and Furmiston Craigs;
- Goshawk Accipiter gentilis. Two flights involving two birds. One of the two flights crossed the Proposed Development;

86 Energy Consents Unit (The Scottish Government) (2023). *Quantans Hill Farm (ECU00003399).* Available online at: Scottish Government - Energy Consents Unit - Application Details [Accessed: August 2025]

87 Energy Consents Unit (The Scottish Government) (2023). *Ornithological Desk Study and Survey Results (Vol 3 Quantans Hill EIAR TA 7.1).* Available online at: Vol 3 Quantans Hill EIAR TA 7.1 - Ornithological Desk Study & Survey Results (REPORT - 1269370 - 3 - B) - 1.pdf [Accessed: August 2025]

88 A height zone where a bird is predisposed to collision risk based on the predicted height of the OHL. In this case 5-20 m.

- Hen harrier Circus cyaneus. 12 flights involving 12 birds. Seven of the flights crossed the Proposed Development, six of those were during one non-breeding season (September 2020 to March 2021) in the east of the overlapping coverage near Furmiston Craigs;
- Osprey Pandion haliaetus. Two flights involving two birds. Both crossed the Proposed Development;
- Curlew. 11 flights involving 15 birds. Four of the flights crossed the Proposed Development, two flights in the west of the overlapping coverage near Craig of Knockgray and two flights in the east near Furmiston Craigs;
- Common snipe Gallinago gallinago. Nine flights involving 12 birds, mainly in the Marbrack and Furmiston areas, which overlap with the Proposed Development.
- Merlin. Seven flights involving eight birds. None of the flights crossed the Proposed Development; and
- Peregrine. Six flights involving seven birds. One flight crossed the Proposed Development.

8.5.39 Breeding raptor surveys and information provided by DGRSG for red kite indicated an apparent increase in breeding activity across the five-year survey period. Exact breeding locations were not given to protect this sensitive species. The closest breeding attempt was near to the proposed Wind Farm Site boundary, but no evidence of nesting was recorded within the Site. Evidence from the baseline surveys and data supplied by DGRSG indicated that up to three pairs of red kite nested within 2 km of the proposed Wind Farm Site within the period 2015-2020.

8.5.40 No other Schedule 1 raptors were confirmed breeding in the Wind Farm Site Study Area.

8.5.41 Winter waterfowl surveys to inform the Quantans Hill Wind Farm EIA were undertaken during September 2018 to May 2019 to assess the use of the Wind Farm Study Area by passage and wintering swans and geese, particularly the carse land along the Water of Deugh. Only a low number of waterfowl were recorded foraging in the Quantans Hill Wind Farm Study Area, the only goose species was the greylag goose, with peak of 25 birds recorded grazing on carseland along the Water of Deugh. No foraging whooper swans were recorded.

8.5.42 Moorland and woodland breeding bird surveys were undertaken during April to July in 2018 and 2019. There were two curlew territories in 2018 and three territories in 2019 in areas of blanket bog at Craig of Knockgray and near Furmiston Craig.

8.5.43 Black grouse surveys were undertaken in the spring of 2018 and 2019. In 2018, there were two male black grouse lekking at the southern end of the Wind Farm Site, south of Quantans Hill. A female black grouse was disturbed from the same area as the lekking males in 2018. In 2019 and 2020, there was no evidence of black grouse lekking anywhere within the proposed Wind Farm survey area.

Novel 2017-2018 Surveys

8.5.44 Full details of the ornithology surveys can be found in **Appendix 8.3: Ornithology Baseline** and accompanying **Figures 1-8**.

Flight Activity Survey

8.5.45 A total of 13 Target Species[89] were identified during the flight activity surveys: greylag goose, mallard *Anas platyrhynchos*, black grouse, cormorant *Phalacrocorax carbo*, grey heron *Ardea cinerea*, red kite, hen harrier, goshawk, osprey, woodcock *Scolopax rusticola*, snipe, merlin, and peregrine. Cumulative flight activity from all Target Species amounted to a total of 62 flights.

8.5.46 The total number of flights for each Target Species in descending order was red kite (24 flights), greylag goose (ten flights), goshawk (seven flights), merlin (six flights), snipe (three flights), black grouse (two flights), woodcock (two flights), osprey (two flights), hen harrier (two flights), peregrine (one flight), mallard (one flight), cormorant (one flight), and grey heron (one flight). A summary of flight activity is provided below:

[89] Species judged to be at highest risk of impacts from the Proposed Development because of their conservation status and/or ecology.

- Red kite: a total of 24 flights within the Study Area involving 26 birds. A total of six flights involving six birds recorded time within the Collison Risk Area (CRA)[90]. Three of these six flights were between Quantans Hill and Holm Hill, and the remaining three flights were in the Water of Ken valley. The total flight time in the CRA was 267 seconds with 120 seconds at PCH involving two flights west of Quantans Hill.
- Greylag goose: a total of 10 flights within the Study Area involving 19 birds. There were five flights involving ten birds within the CRA. The total flight time in the CRA was 300 seconds, with 229 seconds at PCH. Most flights were concentrated towards the northern end of the Study Area between Corlae Bridge and Strahanna, involving birds commuting along the Water of Ken parallel to the Site rather than crossing it.
- Goshawk: a total of seven flights within the Study Area involving nine birds. A single flight recorded time within the CRA, the total flight time was ten seconds, not at PCH. Flight activity was concentrated in the north of the Study Area, to the east of the CRA.
- Merlin: a total of six flights involving six birds within the Study Area. A total of three flights involving three birds recorded time within the CRA; the total flight time in the CRA was 200 seconds, with 85 seconds at PCH. Flight activity was mainly concentrated at the western end of the Site between Quantans Hill and Holm Hill.
- Snipe: a total of three flights involving four birds, all three flights recorded times within the CRA. The total flight time within the CRA was 87 seconds, with 10 seconds at PCH. Flight activity was concentrated at the western end of the Site at Holm Hill.
- Black grouse: a total of two flights involving two birds. One of the flights had time in the CRA amounting to 15 seconds, all at PCH. Both flights were in the Holm Hill area at the western end of the Site.
- Woodcock: a total of two flights involving two birds within the Study Area. One flight recorded time within the CRA comprising six seconds, all at PCH. Both observations were towards the north of the Study Area at Strahanna.
- Osprey: a total of two flights involving two birds within the Study Area. There was one flight with time within the CRA amounting to 10 seconds, not at PCH. There was a single flight in the north of the Study Area near Strahanna and a single flight over the western end of the proposed OHL route corridor at Holm Hill.
- Hen harrier: a total of two flights, both involving the same adult male on the same date in October 2017. The total flight time within the CRA was 10 seconds, not at PCH. Both flights were in the north of the Study Area in the Strahanna/Auchrae Hill area, with most of the flight activity to the east of the Site.
- Peregrine one flight, the total flight time within the CRA was ten seconds, none of which was at PCH.
- Mallard: one flight involving one bird, none of the flight time was within the CRA.
- Cormorant: one flight involving one bird. None of the flight time was within the CRA.
- Heron: one flight involving two individuals together. The total flight time within in the CRA was 90 seconds without time at PCH.

[90] For each flight, the proportion of the total flight time spent within the Limit of Deviation (i.e. OHL Route plus 100 m buffer either side referred to as the 'Collison Risk Area (CRA)') was estimated.

Breeding Bird Survey (BBS)

8.5.47 During the BBS, a total of 23 species were recorded in the Study Area. This total included territories for 16 passerine (songbird) species. Passerines are generally considered at low risk of impacts from OHL developments[91].

8.5.48 The remaining species, considered potentially at higher risk of impacts from OHL developments, comprised:

- Red Kite: one territory. A nesting attempt was reported by a landowner, which subsequently failed. This location was a considerable distance from the Site at approximately 2 km to the south.
- Oystercatcher *Haematopus ostralegus*: two territories. One to the north of the Site at Lorg and one alongside the Site at Green Well of Scotland, alongside a proposed access route to facilitate construction of the Proposed Development, comprising an existing track.
- Curlew: four territories. Three of these were concentrated at the western end of the Study Area between Furmiston Farm and Holm Hill. One of these territories was alongside the Site, and another two territories were within approximately 340 m and 160 m of the Site (proposed access routes), respectively. A fourth territory was present in the north of the Study Area, approximately 550 m north of the Site at Lorg.
- Common sandpiper *Actitis hypoleucos*: three territories. Two at the western end of the Study Area, near the along the Water of Deugh and one to the north of the proposed OHL route corridor along the Water of Ken at Lorg, approximately 650 m north of the Site.
- Snipe: 14 territories concentrated in the Holm Hill and Quantans Hill area, the central part of the Study Area at Round Craigs and near the proposed Lorg substation. Seven territories were within or alongside the Site; three in the Quantans Hill to Holm Hill area, one at Furmiston Craig and three in the area of the proposed Lorg Substation.
- Long-eared Owl: young were heard opposite Craigengillan Bridge approximately 180 m to the west of the Site.
- Barn Owl: one territory, a nest/roost site in an outbuilding. Signs of this species' presence were recorded (pellets), and breeding had previously been confirmed at this location during surveys to inform the Longburn Wind Farm EIA in 2012. This location is approximately 520 m east of the Site.

Black Grouse Survey 2017

8.5.49 A total of four lekking males were recorded; all single birds at four different locations. One approximately 180 m south of the Site at Holm Hill, one approximately 350 m north of the Site at Knockwhirn, one approximately 1.2 km south-east of the Site at Round Craigs and one approximately 1 km north-west of the Site at Glenhead Rig.

Nightjar Survey 2017

8.5.50 There were no observations of nightjar during the survey.

Updated Black Grouse Survey 2021

8.5.51 No observations of black grouse.

[91] NatureScot (2025). *Assessment and mitigation of impacts of power lines and guyed meteorological masts on birds*. Available online at: https://www.nature.scot/doc/guidance-assessment-and-mitigation-impacts-power-lines-and-guyed-meteorological-masts-birds [Accessed: August 2025]

Breeding Bird Verification Survey 2022

8.5.52 The following flight activity was recorded during the Breeding Bird Verification Surveys in 2022 (flights were not timed, and heights were not estimated):

- Red kite: a total of 16 flights were recorded in the Study Area. Seven of these flights were concentrated towards the western end of the Site in the Quantans Hill to Craig of Knockgray area, including two flights crossing the CRA. The remaining flights were widely distributed from Furmiston Craig north to the end of the Site at Lorg.
- Black grouse: two flights in the Study Area. One flight involving a single male bird crossing the CRA just east of Quantans Hill and one flight involving two male birds at Furmiston Craig, outwith the CRA. The two birds at Furmiston Craig were disturbed from the ground alongside a proposed temporary access route to the Site.
- Golden eagle: a single flight just north of the Study Area involving a second calendar year bird at Dodd Hill.
- Hen harrier: a single flight involving a male to the south of the Study Area near Smittons Bridge.
- Oystercatcher: a single flight involving one bird towards the west end of the Study Area at the Water of Deugh, not crossing the CRA.

8.5.53 Target Species territorial activity comprised:

- Red kite: although there was no confirmation of breeding, flight activity towards the western end of the Study Area suggested territorial activity from an apparent pair. Two birds were noted undertaking display flights in April, and two birds were observed circling a plantation in the same area in June, approximately 300 m north of the Site. A check of the plantation found no evidence of a nest.
- Black grouse: no leks were recorded, two males were disturbed off the ground at Furmiston Craig in June, approximately 1 km south-west of the OHL but alongside a proposed temporary access route.
- Curlew: a pair were observed on one date in June between Knockgray Farm and Quantans Hill, approximately 300 m from an existing access track to be used for access to facilitate construction of the Proposed Development. There were no further observations of this pair.
- Common sandpiper: there were three observations of a single bird in the same area of the Water of Ken Valley north of Auchrae, including a displaying bird in April and an alarm-calling bird in June, suggesting a nest or young were present.
- Oystercatcher: a pair bred at the Water of Ken near Corlae, with an adult and a juvenile observed in June.
- Snipe: a single bird was giving territorial 'chipping' calls towards the western end of the Study Area in April, beside the Benloch Burn at the base of Craig of Knockgray, approximately 180 m south of the Site.
- Raven: a pair were observed at a suspected nest site in April, in an isolated plantation north-west of Craig of Knockgray, situated alongside the Site. Two adults and three juveniles were recorded nearby in June.
- Sand martin: a breeding colony of approximately 20 birds was present alongside the Site (proposed access route), nesting in the banks of the Water of Deugh.

2025 Flight Activity Surveys

8.5.54 A total of six Target Species were identified during the flight activity surveys: goosander, grey heron *Ardea cinerea*, red kite, osprey, lesser black-backed gull, and snipe. Cumulative flight activity from all Target Species amounted to a total of 16 flights.

8.5.55 A summary of Target Species flight activity is provided below:

- Goosander: only one flight within the Study Area involving three birds. The flight recorded time within the CRA. The total flight time in the CRA was 60 seconds at PCH.

- Grey heron: only one flight within the Study Area involving one bird. The flight recorded time within the CRA. The total flight time in the CRA was 220 seconds at PCH.
- Lesser black-backed gull: only one flight within the Study Area involving one bird. The flight recorded time within the CRA, with 38 seconds at PCH.
- Osprey: a single long flight starting north of Furmiston, moving westwards.
- Red kite: a total of 11 flights involving 12 birds within the Study Area. All flights recorded time within the CRA; the total flight time in the CRA was 1852 seconds, with 1682 seconds at PCH. Flight activity was widely spread between Holm Hill in the west and Furmiston in the east. The area between Quantans Hill and Holm Hill saw most activity.

Future Baseline

8.5.56 In the western part of the Study Area, young trees, mainly comprised of coniferous species, have been planted over habitat previously dominated by semi-improved acid grassland. Those planted areas would eventually see a change in the species composition, with the most likely significant changes detailed below. Nearby habitats without any direct planting will also be potentially affected e.g., bog habitats are sensitive to changes caused by drainage systems associated with commercial forestry planting.

8.5.57 Considering ornithology, as these trees mature, they would render the former breeding habitat increasingly unsuitable for waders in parts of the Study Area. The breeding bird verification survey in 2022 recorded lower levels of territorial activity for snipe and curlew compared to the 2017-2018 surveys, indicating a decline was already occurring. Data from the 2025 flight activity surveys indicate that the habitat changes are continuing to contribute to a decrease in breeding waders, with no flight observations of any wader species. Although flight activity survey methods are not primarily designed to record wader territories, flight activity from territorial waders would be expected, e.g., commuting foraging flights and display flights.

8.5.58 Conversely, black grouse may initially respond favourably to the establishment of commercial conifer plantations, but resultant canopy closure, shading out favoured ground vegetation, leads to subsequent declines (Warren et al, 2014[92]). Following an apparent decline across the period of the ornithological surveys, there may be a temporary increase in black grouse numbers, resulting in new lekking locations being established near to the Proposed Development.

8.5.59 Eventually, maturing tree cover may provide increased areas of nesting habitat for red kite, resulting in increased flights across the Study Area. An increase in the local red kite population is already indicated from the baseline data.

8.5.60 Considering protected mammals, local populations of red squirrel and pine marten may increase as afforestation provides increased opportunities for places of shelter.

Identification of IEFs

8.5.61 **Table 8.6** below highlights those receptors that have been taken forward as IEF's and those receptors that have been scoped out. A rationale is provided for scoping in/out.

[92] Warren, P., et al (2015). Numbers and distribution of black grouse Tetrao tetrix males in England: results from the fourth survey in 2014. *Bird Study*, *62*(2), pp.202-207. Available online at: https://www.tandfonline.com/doi/full/10.1080/00063657.2015.1013524#d1e296

Table 8.6: Receptors Scoped In and Out

Feature	Geographical Context	Scoped in/Out	Rationale
Galloway Forest Park IBA	Neighbourhood	Out	Considering two of the IBA qualifying species, short-eared owl and peregrine, short-eared owl was not recorded in the Study Area, and there was only one flight recorded for peregrine. The third qualifying species of the IBA, black grouse, was recorded in small numbers within the Study Area. Data across the period of the baseline surveys indicate a low, declining population of black grouse. A peak of four lekking males was recorded in 2017, however, no signs of black grouse were recorded in the 2021 update survey for this species. However, three non-lekking male black grouse were disturbed from an area of recently planted trees during the 2022 verification surveys, where no leks had been recorded previously. Considering the distance of approximately 1.9 km between the IBA and the Site, populations of black grouse within an EZoI of the Proposed Development are potentially linked to the IBA across this distance. Studies show that although nesting females typically select nest sites under 1 km from the nearest lek site, some nest sites were between 1 km and 2.5 km from the nearest lek site[93]. Other studies indicate breeding season foraging distances within 2 km, with male core ranges of up to 1.5 km and female core ranges of approximately 0.5 km[94]. The baseline data indicated a very low population of black grouse within an EZoI of the Proposed Development at a significant distance from the IBA boundary. It is considered that even allowing for potential temporary increases in numbers due to habitat changes (afforestation) in the Study Area, the population within the Proposed Development's EZoI is unlikely to form an important component of the

[93] Warren, P., et al. (2012). *Black Grouse Tetrao tetrix nest-site habitats and fidelity to breeding areas in northern England*, *Bird Study*, 59, pp. 139–143. Available online at: Black Grouse Tetrao tetrix nest-site habitats and fidelity to breeding areas in northern England [Accessed: August 2025]

[94] NatureScot (2016) formerly SNH(2016). *Assessing Connectivity with Special Protection Areas (SPAs)*. Available online at: https://www.nature.scot/sites/default/files/2022-12/Assessing%20connectivity%20with%20special%20protection%20areas.pdf [Accessed: August 2025]

Feature	Geographical Context	Scoped in/Out	Rationale
			IBA population. This assessment also considers the distances from the Site to the IBA, which reduce the likelihood of significant population exchange between the Proposed Development's EZoI and the IBA. Black grouse will be assessed separately in the context of non-IBA populations.
Merrick Kells Special Area of Conservation (SAC).	International	Out	Qualifying habitats of the designated site are scoped out, given the distance of approximately 7 km to the designated site, potential indirect impacts from the Proposed Development through pollution events are highly unlikely across this distance. Otters' territorial range can be as large as 20-30 km of riverbank[95]. Therefore, populations of otter recorded within an EZoI of the Proposed Development are potentially linked to the SAC. Site condition monitoring for otter[96] assessed the SAC otter population as favourable, with evidence of otter found at 86% of survey sample sites within the SAC. Otter is considered widespread within Dumfries and Galloway, the region is thought to have one of the largest populations in Scotland[97]. Therefore, due to the large otter population known to be present within the local area and the distance between the Proposed Development and the SAC, it is not considered likely that otters using the Site form an important component of the SAC otter population.

[95]Wild Otter Trust. Available online at: https://ukwildottertrust.org/otters-101/ [Accessed: August 2025]

[96]Findlay, M. et al. (2015). *Site condition monitoring for otters (Lutra lutra) in 2011-12.* Scottish Natural Heritage Commissioned Report No. 521. Available online at: https://www.nature.scot/doc/naturescot-commissioned-report-521-site-condition-monitoring-otters-lutra-lutra-2011-12 [Accessed: August 2025]

[97]SWSEIC. *Terrestrial mammals*. Available online at: https://swseic.org.uk/what-to-see/dumfries-galloway/species/terrestrial-mammals/ [Accessed: August 2025]

Feature	Geographical Context	Scoped in/Out	Rationale
			The above assessment is provided in the context of the EIA. To allow the competent authority to undertake assessment in the context of the Habitats Regulations, further information has been provided in **Section 8.9**. Otter will be assessed separately in the context of non-SAC populations
Loch Ken and River Dee Marshes Special Protection Area (SPA).	International	Out	The SPA population of Greenland White-fronted geese has been approximately 200 birds in recent years (2020), forming approximately 2% of the UK wintering population[98]. The foraging distribution of the SPA Greenland White-throated goose population is well studied and is relatively localised; favoured foraging areas are generally >16 km south of the Site. There was no evidence of Greenland white-fronted goose foraging in or flying over the Study Area from novel ornithology surveys or from surveys in support of Quantans Hill Wind Farm, a development with significant overlap with the Site. Considering the SPA greylag goose population, since the shift in winter distribution north to Orkney, numbers of Icelandic greylag geese now using the area are greatly diminished[99]. Numbers of Icelandic greylag geese now using the designated site is unlikely to be of international importance. Greylag goose was occasionally recorded in the Study Area, but most observations are considered to relate to feral, non-Icelandic birds, considering the shift in wintering distribution alluded to above and that many observations came during the breeding season when Icelandic birds would not be present in Scotland.

[98]Greenland White-fronted Goose Study Group. *The Greenland White-Fronted Goose*. Available online at : https://greenlandwhitefront.org/ [Accessed: August 2025]

[99] Mitchell, C. (2012). *Mapping the distribution of feeding Pink-footed and Iceland Greylag Geese in Scotland*. WWT/SNH, 108pp. Available online at: https://www.bto.org/sites/default/files/mitchel_2012_mapping_distirbution_feeding_pinkfooted_and_greylag_geese_scotland_wwtsnh_report.pdf [Accessed: August 2025]

Feature	Geographical Context	Scoped in/Out	Rationale
			Although Greenland white-fronted geese are unlikely to forage within an EZoI of the Proposed Development based on their known distribution and absence of records from the baseline data, consultation with the RSPB indicates that the population's migratory routes may cross the Proposed Development. This assessment is based on data from the Wildfowl and Wetlands Trust (WWT)[100] involving satellite tagged birds. However, as noted in the study, the sample size of birds was very small: six tracks for the spring migration period and none for the autumn period. From the scale of the mapping used in the report, it is difficult to be certain exactly where flight routes were in relation to the Site. However, it does appear that most tracks were to the west of the Site. Further to this, if the migratory routes are typical of the SPA population, then these routes are most likely to be parallel with the Site rather than crossing it, i.e., making collision risk unlikely. A north-west to south-east migratory track would be expected, given birds are heading to/from Greenland via the north-west of Scotland, as shown by the satellite tagged birds in the study. In addition, the height of the OHL reduces the likelihood of collision risk, migrating geese and swans would be expected to be flying at significant heights above the Proposed Development (Maximum OHL Height: 15.1 m). Considering all the above, the qualifying Greenland white-fronted goose and greylag populations are scoped out of further assessment. Migratory swans and geese will be assessed separately in the context of non-SPA populations. The above assessment is provided in the context of the EIA. To allow the competent authority to undertake assessment in the context of the Habitats Regulations, further information has been provided in **Section 8.9**.
Blanket Bog/ Mire/ Wet Heath plant communities	Regional	In	The west of the survey area is dominated by plant communities that support a range of blanket bog, mire and wet heath communities. These communities are also present elsewhere within the survey area, but are generally contained in

[100] Griffin, L. et al. (2011). *Migration routes of Whooper Swans and geese in relation to wind farm footprints*. WWT, Slimbridge. Available online at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/198201/OESEA2_Migration_Routes_WhooperSwans_Geese_Relation_to_Windfarms_v3.pdf [Accessed: August 2025]

Feature	Geographical Context	Scoped in/Out	Rationale
			relatively small areas of open ground within commercial forest plantation or within areas of grassland or rush pasture, They form often complex mosaics (see **Figure 8.1.2: NVC Classification**) that have probably developed over many years in response to agricultural and forestry practices, including planting of trees within some areas. As a result, it is considered that the peatland condition is overwhelmingly modified using the NatureScot Peatland Condition Assessment methodology[101]. However, occasional generally small areas approach near-natural condition. These support M17 *Trichophorum cespitosum - Eriophorum vaginatum* blanket mire or M18 *Erica tetralix–Sphagnum papillosum* raised and blanket mire communities, with better examples associated with M2 - *Sphagnum cuspidatum/recurvum* bog pool and M4 Carex *rostrata-Sphagnum recurvum* mire. These complex mosaics include mixes of 13 different NVC communities, seven of which are defined as priority peatland[83]. Ten of these NVC communities are contained within habitats listed on Annex 1 of the Habitats Directive and all are listed within the SBL. These are internationally or nationally important habitats that are largely degraded but have the potential for restoration. The Proposed Development Site is therefore considered to be of Regional importance for these habitats.
Grasslands	Local	In	Most areas of grassland are small and discontinuous, contained within larger areas of blanket bog or forest plantation. The most frequently recorded grasslands are acid grasslands, notably U4 *Festuca ovina-Agrostis capillaris-Galium saxatile* grassland. This lacks the species diversity to be classified as the Annex 1 habitat H6230 (species-rich grassland with mat grass, in upland areas). However, it is listed within the SBL.

[101] NatureScot (2023) Peatland Condition Assessment. Available from: https://www.nature.scot/sites/default/files/2023-02/Guidance-Peatland-Action-Peatland-Condition-Assessment-Guide-A1916874.pdf [Accessed October 2025]

Feature	Geographical Context	Scoped in/Out	Rationale
			Small areas of the marshy grasslands MG9 - *Holcus lanatus-Deschampsia cespitosa* grassland and MG10 *Holcus lanatus-Juncus effusu*s rush-pasture were recorded within the survey area. These are both listed within the SBL along with the calcareous grassland CG10 *Festuca ovina-Agrostis capillaris-Thymus Praecox* grassland, which was recorded in two locations close to the eastern access track. The grasslands recorded within the survey area generally common and widespread. As such, the Proposed Development Site is considered to be of Local importance for these habitats
Plantation Woodland	Neighbourhood	Out	Commercial plantation woodland is the dominant habitat within the east of the survey area. This is a widespread habitat with limited ecological value due to the lack of species diversity associated with forestry that is for timber production. The Proposed Development Site is therefore considered to be of Neighbourhood importance for these habitats
Otter	Local	In	As EPS, otters are fully protected under the Conservation (Natural Habitats, &c.) Regulations 1994 (as amended) – Schedule 2. Otters are also a Dumfries and Galloway BAP species[102]. Otter is considered widespread within Dumfries and Galloway, the region is thought to have one of the largest populations in Scotland[97]. Considering the above otter is scoped in as of Local importance in the context of the Proposed Development.
Badger	Local	In	Badgers are protected in the UK under the Protection of Badgers Act (1992, and under Schedule 5 of the Wildlife and Countryside Act, as amended (1981) and are

[102]SWSEIC. *Appendix 4 of Part 4* of *Dumfries and Galloway Local Biodiversity Action Plan – Part 1.* Available online at: https://swseic.org.uk/resource/dglbap-part1/ [Accessed: August 2025]

Feature	Geographical Context	Scoped in/Out	Rationale
			also a Dumfries and Galloway BAP species. The baseline data indicates a relatively low population of Badger within the EZoI of the Proposed Development. Three setts were recorded, comprising a main, an annex and an outlier in 2023. A Scottish Badger Distribution Survey in 2006 – 2009[103] estimated that the Dumfries and Galloway region had a moderately high density of 0.24 main setts/ $km^{2,}$ with a minimum total of 1588 main setts estimated for the region. Badgers are valued to be of Local importance in the context of the Proposed Development and the immediate surrounding area.
Pine Marten	Local	In	The Scottish pine marten population has started to recover from a dramatic decline, but is still considered rare, there is estimated to be approximately 3,700 individuals in Scotland. Pine marten is a Dumfries and Galloway BAP species. Further to this, the pine marten receives elevated protection under the Wildlife and Countryside Act 1981 (as amended). Pine marten was reintroduced to the Galloway Forest Park in the early 1980's, expansion away from this source area has been relatively slow. A study in 2013[104] recorded 16 positive hectads[105] for pine marten from 58 surveyed hectads in Dumfries and Galloway. Evidence of pine marten presence was recorded in the Study Area in the form of scat at six locations, including two locations alongside the Site in the central part of the Study Area. Although no dens were found, suitable denning habitat for pine marten was widespread alongside the Site and in addition, pine marten could potentially commute across any section of the preferred alignment.

[103]Rainey, E. et al. (2009). *Scottish Badger Distribution Survey 2006–2009: estimating the distribution and density of badger main setts in Scotland*. Scottish Badgers & Biomathematics and Statistics Scotland. Available online at: https://www.scottishbadgers.org.uk/wp-content/uploads/2020/12/Scottish-Badger-Distribution-Survey-06-09-Results-16-November-2009-3172963.pdf [Accessed: August 2025]

[104]Croose, E. et al. (2013). *Expansion zone survey of pine marten (Martes martes) distribution in Scotland.* SNH Commissioned Report No. 520. Available online at: https://www.nature.scot/sites/default/files/2025-06/naturescot-commissioned-report-520.pdf [Accessed: August 2025]

[105]A hectad is an area 10km x 10km square

Feature	Geographical Context	Scoped in/Out	Rationale
			Future baseline predictions are for an increase in the local pine marten population in response to habitat changes in the Study Area (afforestation). Considering the above, pine marten is scoped in as of regional importance.
Red squirrel	Local	In	The woodland blocks in the north of the Study Area were immature and, as such, are not considered to provide high quality habitat for red squirrel. Whilst no feeding stations were identified throughout the Study Area, a potential drey was recorded in the west of the Study Area, approximately 50 m from the Site. However, no evidence of scratching or feeding signs was identified in proximity to this feature. Red squirrel priority woodland was also identified surrounding the Site; the nearest designated area is within coniferous woodland at Dodd Hill, approximately 500 m west of the Site. Dumfries and Galloway, the region in which the Proposed Development is situated, is estimated to have 20% of the Scottish red squirrel population[106],approximately 24,000 individuals[107]. Baseline data indicate that the red squirrel population is low within the Study Area, but given predicted future habitat changes (afforestation) and the relative proximity of a red squirrel priority woodland, the population may increase. Considering the above, red squirrels are scoped in as of local importance.
Bats	Local	In	Bat roosting habitat was limited within the Study Area, being restricted to residential buildings along the unnamed road in the north-east and scattered copses of trees to the west of the Study Area. Plantation woodland in the Study Area generally provided low bat roosting potential, as woodlands had few mature

[106]SWSEIC. *Terrestrial mammals*. Available online at: https://swseic.org.uk/what-to-see/dumfries-galloway/species/terrestrial-mammals/ [Accessed: August 2025]

[107] Saving Scotland's Red Squirrels (2025). *Scotland's Red Squirrels*. Available online at: https://scottishsquirrels.org.uk/scotlands-red-squirrels/ [Accessed: August 2025]

Feature	Geographical Context	Scoped in/Out	Rationale
			trees with roosting features, with the exception of three trees with bat roost potential identified within the Study Area, including two trees with moderate roost suitability and one tree with low roost suitability Farm steadings in the wider area were not inspected but considered to provide moderate to high bat roost potential and are connected to the Site via watercourses, woodland edge habitat and field boundaries. Larger bats, such as noctule and Leisler's may access the Study Area to forage over open ground rather than following linear features. As EPS, all bat species found in Scotland are fully protected under the Conservation (Natural Habitats, &c.) Regulations 1994 (as amended) – Schedule 2. All bat species which occur in Scotland are Least Concern on the Global IUCN Red List[108]. All eight species of Scottish bat are present in Dumfries and Galloway. Common pipistrelle *Pipistrellus pipistrellus* and soprano pipistrelle *Pipistrellus* occur throughout Dumfries and Galloway, occupying a variety of habitats, including open woodland, parks, marshes and farmland. They roost in different places at different times of year selecting buildings, bat boxes or trees that suit their temperature requirements. Although the baseline data indicates limited roosting opportunities within the Study Area, suitable buildings and a limited number of trees are available. Further to this, although common and widespread species, common pipistrelle and soprano pipistrelle are listed as SBS and Dumfries and Galloway BAP species.

[108] IUCN. *ICUN Red List of Threatened Species*. Avaliable online at: https://www.iucnredlist.org/en [Accessed: August 2025]

Feature	Geographical Context	Scoped in/Out	Rationale
			Bats are scoped in as of Local importance in the context of limited roosting opportunities, but likely presence in parts of the Study Area, and because of their conservation and legal protection status.
Water vole	N/A	Out	No water vole evidence was recorded along the watercourses in the Study Area; many of the watercourses were sub-optimal (i.e., Water of Ken) owing to fast water flows and lack of suitable bank profiles and soft substrate within which to burrow. Therefore, the species is scoped out from further assessment.
Common lizard	Neighbourhood	Out	Several common lizard were recorded across the Site. Common lizard are likely to use much of the Study Area for basking, and use many of the habitats present, such as grassland, refugia and woodland edge as both cover and foraging areas. While present on the Site, suitable habitat is present throughout the Study Area, and minimal impacts are expected on any common lizard populations present due to the low impact and short term nature of works on common lizard habitat. Therefore, common lizard are scoped out from further assessment.
INNS	N/A	In (All species with potential to be found in the area)	A small stand of Rhododendron was recorded adjacent to Benloch Burn. However, this was over 100 m from the Site and would not be within active construction areas. Due to rapid assessment of the surveys, there is a limitation that some INNS may have been missed. Therefore, this INNS, and others, are scoped in due to potential interaction with the Proposed Development. North American signal crayfish were identified during fish baseline surveys within the Water of Ken. Works to facilitate construction of the Proposed Development would take place alongside the Water of Ken, with the potential for transfer of crayfish to other water courses. Therefore, this INNS will be scoped in for consideration of impacts to native wildlife.
Fish	Local	In	Six of the seven watercourses surveyed by GFT within the Proposed Development's EZoI held a salmonid species, trout, in moderate to low densities. The presence of a salmonid species means that the six watercourses were rated as potentially sensitive to in stream works or works alongside by GFT.

Feature	Geographical Context	Scoped in/Out	Rationale
			An interactive map provided by the GFT on their website[109] indicates that the river catchments within the EZoI of the Proposed Development (Water of Deugh and Water of Ken) hold a low population of resident trout and are inaccessible to migratory salmonids due to the dam downstream at Kendoon. A relatively low population of fish were recorded during the baseline surveys, mainly comprising trout. Although this species is mentioned in the context of improving river habitat for all fish species within the Dumfries and Galloway BAP, it is not listed as a priority species. Trout is also a widespread species in Scotland and the UK. Considering the above, the fish population within the Proposed Development's EZoI is scoped in as of Local importance.
FWPM	N/A	Out	The surveys found no evidence of FWPM.
Red kite	Regional	In	Red kite is afforded elevated protection under Schedule 1 of the Wildlife and Countryside Act. This species is listed within the Dumfries and Galloway BAP. Red kite recorded the most flights of all Target Species during the 2017 flight activity surveys, a total of 24 flights within the Study Area involving 26 birds. A total of six flights involving six birds recorded time within the CRA. Flight activity was frequent and widespread in the Study Area during the breeding bird verification survey in 2022. In 2025a total of 16 flights were recorded in the Study Area. Seven of these flights were concentrated towards the western end of the preferred alignment in the Quantans Hill to Craig of Knockgray area, including two flights crossing the CRA. During the 2017 ornithology surveys a nesting attempt was reported by a landowner which subsequently failed. This location was a considerable distance

[109] GFT. *Distribution of Salmon and trout in Galloway Interactive Map*. Available online at: https://gft.maps.arcgis.com/apps/webappviewer/index.html?id=09ae5ab28f4b4551829a647016f4244d [Accessed: August 2025]

Feature	Geographical Context	Scoped in/Out	Rationale
			from the Site at approximately 2 km to the south. Breeding was not confirmed during the breeding bird verification survey in 2022, but a pair of immature birds were displaying near a suitable breeding location approximately 300 m north of the Site, this could be used by the pair for breeding in future years. Baseline data from Quantans Hill Wind Farm EIA, a development which has extensive overlap with the Proposed Development, included breeding raptor surveys and information provided by DGRSG relating to red kite. The data indicated an apparent increase in breeding activity across the five-year survey period. The closest breeding attempt was near to the proposed Wind Farm Site boundary, but no evidence of nesting was recorded within the Site. Evidence from the baseline surveys and data supplied by DGRSG indicated that up to three pairs of red kite nested within 2 km of the proposed Wind Farm Site within the period 2015-2020. The trend for the red kite breeding population within the wider area surrounding the Site indicates an increase in line with the regional (Dumfries and Galloway) population, following a successful reintroduction scheme. Results from the Scottish Raptor Monitoring Scheme (SRMS) for 2022 show 147 pairs occupying home ranges[110] in the region. Taking the maximum of three pairs that were recorded nesting within the wider area surrounding the Site during 2015-2020, that figure represents approximately 2% of the Dumfries and Galloway population. Considering all the above, red kite is valued of regional importance.
Goshawk	Regional	In	Goshawk is afforded elevated protection under Schedule 1 of the Wildlife and Countryside Act. There were seven goshawk flights, only one flight crossed the CRA and this was above PCH. Most flight activity was well to the east of the Site. Flight activity did include display flights in spring indicating a territory in the wider area surrounding

[110]SRMS. *Red Kite (Milvus milvus*). Available online at: https://raptormonitoring.org/srms-species/accipitriformes/red-kite [Accessed: August 2025]

Feature	Geographical Context	Scoped in/Out	Rationale
			the Site. However, suitable forestry habitat for goshawk was very extensive and there was no evidence of a nest site within 500 m of the Site, the maximum predicted distance for disturbance based on studies[111]. Further to this, the Site mainly avoids significant areas of suitable forestry habitat for the species. The latest published Rare Breeding Birds Panel Report (RBBP) for 2023 notes a total of 25 pairs of goshawk in the Dumfries and Galloway region[112]. However, due to covid restrictions that year, this total is unlikely to be truly representative, and the report also gives an estimate of 35 pairs based on data from previous years. Although the baseline data indicates that goshawks are unlikely to be breeding in close proximity to the Proposed Development, a pair are likely to have a territory in the wider area. This could result in a pair of goshawks home range incorporating the Site during foraging and commuting flights. One pair of goshawk would represent approximately 3% of the regional (Dumfries and Galloway) breeding population. Considering the above, goshawk is scoped in as of regional value.
Merlin	Local	In	Merlin is afforded elevated protection under Schedule 1 of the Wildlife and Countryside Act. This species is listed within the Dumfries and Galloway BAP. A total of six flights involving six birds were identified within the Study Area. A total of three flights involving three birds recorded time within the CRA. Flight activity was mainly concentrated at the western end of the Site between Quantans Hill and Holm Hill. Four of the six flights occurred in the late breeding season (late July and August). One of these breeding season observations was aged as a juvenile. There was no evidence that merlin bred in the Study Area but this record could relate to a

[111]Goodship, N.M. and Furness, R.W (2022). *Disturbance Distances Review: An updated literature review of disturbance distances of selected bird species*. NatureScot Research Report 1283. Available online at: https://www.nature.scot/doc/naturescot-research-report-1283-disturbance-distances-review-updated-literature-review-disturbance [Accessed: August 2025]

[112]RBBP (2023). *Rare breeding birds in the UK in 2020*. Available online at: https://rbbp.org.uk/wp-content/uploads/2024/09/rbbp-report-2021.pdf [Accessed: August 2025]

Feature	Geographical Context	Scoped in/Out	Rationale
			dispersing bird fledged from a nesting pair in the wider Dumfries and Galloway region. Merlin is a rare breeding species in Dumfries and Galloway, the RBBP report for 2020 shows a total of five pairs in the region, with four of those pairs confirmed as breeding[112]. Considering all the above, merlin is scoped in as of Local importance, although there was no evidence of breeding within the Study Area, a dispersing juvenile potentially linked to the Dumfries and Galloway breeding population was recorded.
Other Schedule 1 birds of prey (hen harrier, osprey and peregrine)	N/A	Out	For these Schedule 1 birds of prey, there was no evidence of breeding within the Study Area and a very low rate of occurrence: osprey (three flights, including one during the 2025 surveys), hen harrier (two flights), and peregrine (one flight). These species are scoped out.
Long-eared owl	Local	In	Young long-eared owls were heard approximately 180 m from the Site during a 2017 nightjar survey. Long-eared owl is green listed within BoCC 5 and not a Schedule 1 species. In the Dumfries and Galloway region, this species is infrequently recorded as a breeding species, with the Dumfries and Galloway annual bird report[113] typically listing only one-two records of confirmed breeding. However, the report stresses that the species is likely to be very under recorded, a reflection of the species' nocturnal behaviour and choice of nest sites in dense coniferous forest. The SRMS latest report[114] shows that no breeding attempts by long-eared owl were monitored within the Dumfries and Galloway region in 2021 and 2022. However, this may simply reflect the distribution of raptor workers and their time availability rather than true

[113] Scottish Ornithologists Club (SOC). *Online Scottish Bird Report*. Available online at: https://www.the-soc.org.uk/pages/online-scottish-bird-report [Accessed: August 2025]

[114] Peniche, G., et al., (2023). *Scottish Raptor Monitoring Scheme Annual Report 2023*. BTO Scotland, Stirling. Available online at: https://raptormonitoring.org/wp-content/uploads/2025/07/Scottish-Raptor-Monitoring-Scheme-Annual-Report-2023_FINAL.pdf [Accessed: August 2025]

Feature	Geographical Context	Scoped in/Out	Rationale
			scarcity of breeding long-eared owls. The UK population is estimated at 1800-6000 pairs[115]. Considering the above, long-eared owl is scoped in as of Local importance.
Barn owl	Local	In	Signs of this species' presence were recorded (pellets) at an outbuilding where breeding had previously been confirmed during surveys to inform the Longburn Wind Farm EIA in 2012. This location is approximately 520 m east of the Site. Barn owl is a Schedule 1 species and a Dumfries and Galloway BAP species. The latest SRMS report[114] shows there 52 breeding attempts were monitored in Dumfries and Galloway in 2021 and 57 in 2022. The Scottish population has been estimated at 500-1000 pairs[116]. Considering the above, barn owl has been scoped in as of local importance.
Nightjar	N/A	Out	No evidence of nightjar was recorded during the surveys.
Black grouse	Regional	In	Black grouse is a Dumfries and Galloway BAP species. The Dumfries and Galloway population has been estimated at 200 pairs[117]. Data across the period of the baseline surveys indicate a low, declining population of black grouse. A peak of four lekking males was recorded in 2017, however, no evidence of black grouse was recorded during the 2021 update survey for this species. However, three non-lekking male black grouse were disturbed from an area of recently planted trees during the 2022 verification surveys, where no leks had been recorded previously.

[115] Woodward, I., et al. (2020) *Population estimates of birds in Great Britain and the United Kingdom. British Birds* 113: 69–104. Available online at: apep4-population-estimates-birds-great-britain-uk-2020.pdf [Accessed: August 2025]

[116] Shaw, G. (2007). *Barn Owl. In The Birds of Scotland*, ed. by R.W. Forrester, I.J. Andrews, C.J. McInerny, R.D. Murray, R.Y. McGowan, B. Zonfrillo, M.W. Betts, D.C. Jardine & D.S. Grundy. The Scottish Ornithologists' Club, Aberlady. pp. 902-906. Available online (on subscription) at: https://www.the-soc.org.uk/pages/the-birds-of-scotland [Accessed: August 2025]

[117] Galloway and Southern Ayrshire Biosphere, 2015. *4.1 Black Grouse*. Available online at: https://www.gsabiosphere.org.uk/wp-content/uploads/2022/05/4.1-Black-Grouse-301215.pdf [Accessed: August 2025]

Feature	Geographical Context	Scoped in/Out	Rationale
			Following an apparent decline across the period of the ornithological surveys, there may be a temporary increase in black grouse numbers due to recent habitat changes (tree planting), resulting in new lekking locations being established near to the Proposed Development. Based on studies[118], any increase in numbers is likely to be temporary as afforested areas only afford suitable habitat for this species during their immature stages. Supporting the theory of an increase/changes in lekking locations, three male black grouse were disturbed from an area of recently planted trees during the 2022 verification surveys, where no leks had been recorded previously. The peak of four lekking males in the Study Area recorded from baseline data represents approximately 2% of the Dumfries and Galloway population. Considering all the above, black grouse is scoped in as of regional importance in the context of non-IBA populations.
Breeding Bird Assemblage (Passerines)	Neighbourhood	Out	A variety of breeding passerines (songbirds) were recorded in the Study Area. Surveys included high densities of two typical upland species: skylark (red listed within BoCC 5) and meadow pipit (amber listed within BoCC 5). Sand martin, ravens, lesser redpoll, song thrush and grey wagtail were also recorded during the surveys. NatureScot guidance[119] notes that passerines are generally considered at low risk of impacts from OHL developments. All wild birds receive protection under the Wildlife and Countryside Act 1981 (WCA), including protection of nests from damage/destruction while in use. Embedded mitigation discussed in **Section 8.6**

118 White, P.J.C., Warren, P. and Baines, D. 2013. Spatial and structural habitat requirements of black grouse in Scottish forests. Scottish Natural Heritage Commissioned Report No. 545.

119 NatureScot (un-dated) Guidance – Assessment and mitigation of impacts of power lines and guyed meterological masts on birds. Available at: https://www.nature.scot/doc/guidance-assessment-and-mitigation-impacts-power-lines-and-guyed-meteorological-masts-birds

Feature	Geographical Context	Scoped in/Out	Rationale
			will include a Breeding Bird Protection Plan to ensure no contravention of the WCA. Considering the above, the breeding passerine assemblage is scoped out.
Breeding Bird Assemblage (Waders)	Neighbourhood	Out	During the original 2017 bird surveys, there were four curlew territories, 14 snipe territories and three common sandpiper territories. Occasional flights from woodcock were recorded during the 2017 surveys. During the 2022 verification survey, a decline in the breeding wader population was indicated. Single common sandpiper and snipe territories were recorded while a pair of curlew was observed on one date only. Oystercatcher had two territories and several flights recorded during surveys.. The decline was likely attributable to habitat changes in parts of the Study Area because of tree planting. As the areas of tree planting mature, the Study Area is likely to become increasingly unsuitable for breeding waders. Data from the 2025 flight activity surveys indicate that the habitat changes are continuing to contribute to a decrease in breeding waders, with no flight observations of any wader species. Although flight activity survey methods are not primarily designed to record wader territories, flight activity from territorial waders would be expected e.g., commuting foraging flights and display flights. Curlew is an SBS species and a Dumfries and Galloway BAP species. Given the decreasing trend and habitat changes, the Proposed Development's EZoI is unlikely to support important populations of breeding waders in the future. All wild birds receive protection under the WCA, including protection of nests from damage/destruction while in use. Embedded mitigation discussed in **Section 8.6** will include a Breeding Bird Protection Plan to ensure no contravention of the WCA. Considering the above, the breeding wader assemblage is scoped out.
Other bird assemblage	Neighbourhood	Out	Cormorant, mallard, goosander, grey heron and lesser-backed Gull were all recorded. These species rate of occurrence was low, and the Site is considered of negligible importance for these species. All wild birds receive protection under the WCA, including protection of nests from damage/destruction while in use. Embedded mitigation discussed in **Section 8.6**

Feature	Geographical Context	Scoped in/Out	Rationale
			will include a Breeding Bird Protection Plan to ensure no contravention of the WCA.
Migratory swans and geese	Local	In	This species grouping includes Greenland white-fronted goose and greylag goose, those species have been discussed separately in the context of the potential links to qualifying populations of Loch Ken and River Dee SPA. Greylag goose, pink-footed goose and whooper swan are widespread winter visitors to Scotland and could occur within the EZoI of the Site in the context of non-qualifying populations of European sites. Greenland white-fronted goose is rare and localised in distribution and is considered exclusively in the context of populations linked to Loch Ken and River Dee Marshes SPA. Therefore, this species is not discussed further here. Considering the other three species, there were no records of pink-footed goose or whooper swan during surveys to inform assessment of the Proposed Development and only 10 flights of greylag goose involving 19 birds. There were records of whooper swan and pink-footed goose from surveys in 2018-2021 to inform assessment of Quantans Hill Wind Farm, the site with the most significant overlap with the Proposed Development's Study Area. There were three whooper swan flights involving a total of 70 birds, two of the three flights crossed the Proposed Development. There were six Pink-footed goose flights involving a total of 263 birds, four of the six flights crossed the Proposed Development. These flights were widely distributed across the entire length of the Proposed Development where survey coverage from the project overlapped between Quantans Hill and Furmiston Craigs. All flights were either at PCH for the overlapping project (50 m-250 m) or above. In either case, the flights were above the height of the Proposed Development. Considering the low rate of occurrence for these species from baseline surveys in comparison to the large numbers occurring in Scotland and records showing flight heights above the height of the Proposed Development, effects on these species from the Proposed Development are anticipated to be negligible. Further to this, the Proposed Development footprint and immediate surrounding area comprises upland grazing, bog and forestry, wholly unsuitable foraging habitat for these species.

Feature	Geographical Context	Scoped in/Out	Rationale
			However, as a precaution, these species are scoped in for assessment following the consultation response from the RSPB (**Table 8.1**), noting flight data provided by WWT, which indicates that the Proposed Development is in the direct route of migrating geese and whooper swans.

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8.5.62 There was a typographical error in the 2019 Scoping Report, which stated that Cleugh SSSI was within the Site. The SSSI is located approximately 7.5 km south of the Proposed Development, and has therefore not been assessed within this EIAR Chapter.

8.5.63 In addition to the IEFs scoped out from all consideration of likely significant effects, for those scoped in, the following operational effects have been scoped out and will not be considered further within this assessment:

- Disturbance and displacement to protected non-ornithological species: the operational phase of the Proposed Development is anticipated to involve occasional maintenance involving a low number of personnel and vehicles.

8.6 Likely Significant Environmental Effects

Design Mitigation and Assumptions

8.6.1 Best practice measures, e.g. adherence to SEPA guidelines, are considered as embedded mitigation. Construction good practice includes standard construction practices, legislative requirements, and published guidance from statutory bodies, which would be implemented during construction.

8.6.2 A CEMP would be completed by the Principal Contractor and implemented during the construction of the Proposed Development. The CEMP would incorporate The Applicant's General Environmental Protection Plans (GEMPs), which are applied as a standard requirement to all construction Sites and practices and would also detail mitigation requirements outlined in **Section 8.7**. An outline CEMP is included as part of the s37 application.

8.6.3 As detailed within **Paragraph 8.4.34,** The Applicant has committed to undertaking comprehensive pre-construction surveys for all protected species identified within the baseline as being either present within the Survey Area or could potentially be present. This would ensure that all resting places for all protected species that may have been established since surveys were last undertaken would be adequately protected and mitigated for prior to construction.

8.6.4 The CEMP would also include generic measures for all bird species to ensure no contravention of wildlife legislation, e.g., exclusion zones around all active nests, and measures for more sensitive species e.g., disturbance exclusion zones for breeding Schedule 1 raptors and lekking black grouse. For the sensitive species, further details of the mitigation measures are provided under their individual assessments below.

8.6.5 The Proposed Development would not result in any major natural resource use during construction, and no borrow pits would be needed. Soil arisings from any excavations would be reused as backfill material. No significant waste is anticipated to arise during the construction phase and litter would be managed in accordance with the appropriate waste regulations. No operational waste generation is anticipated, and no significant effects would be likely to arise because of waste generation during construction or operation.

8.6.6 The avoidance of environmental constraints through routeing is also embedded. There is provision for a 25 m ILA, which allows for elements of the Proposed Development to be microsited by The Applicant in consultation with stakeholders and the Ecological Clerk of Works (ECoW). This includes micrositing of laydown areas, access tracks and tower locations where possible to avoid permanent loss of the most sensitive habitats e.g. Annex I, SBL and Priority Peatland.

8.6.7 The use of existing access tracks would reduce the extent of new access tracks required. Where new access tracks are required, these would comprise temporary stone tracks, and habitat would be reinstated on completion of the construction phase. Trackway panels and/or bog mats would be used to cross soft ground and to minimise the impact on soils, especially in peaty areas.

8.6.8 Habitat degradation through pollution events is unlikely considering embedded mitigation within the outline CEMP and **Appendix 12.1: Schedule of Commitments**.

8.6.9 Species Specific Embedded Mitigation is outlined below.

Red kite

8.6.10 Embedded mitigation will include a pre-construction survey to locate nest sites within the Proposed Development's EZoI. An exclusion zone would be implemented for any nests identified where no works can take place until the nest is confirmed as no longer active, i.e., the young have fledged and left the nest.

Goshawk

8.6.11 Embedded mitigation will include a pre-construction survey to locate nest sites within the Proposed Development's EZoI. An exclusion zone would be implemented for any nests identified where no works can take place until the nest is confirmed as no longer active, i.e., the young have fledged and left the nest.

Merlin

8.6.12 Embedded mitigation will include a pre-construction survey to locate nest sites within the Proposed Development's EZoI. An exclusion zone would be implemented for any nests identified where no works can take place until the nest is confirmed as no longer active, i.e., the young have fledged and left the nest.

Black grouse

8.6.13 Embedded mitigation measures specific to lekking male black grouse would be implemented. A pre-construction survey would be undertaken to update the status of black grouse leks within and surrounding the Site. If black grouse leks are confirmed within the Proposed Development's EZoI for disturbance and displacement impacts to leks (750 m)[111], the following would be applied to mitigate effects during the construction phase:

- During the period of peak lekking activity (March - early May) construction works would not take place within 750 m of a confirmed lek until after 10:00 to ensure the early morning lekking period is avoided.

8.6.14 Considering potential destruction of black grouse nests due to construction activities, mitigation would include pre-construction nest checks for all ground nesting species. An exclusion zone would be implemented around any active nests identified, where no works can take place until the nest is confirmed as no longer active.

8.6.15 In addition, consideration would be given to the dependent state of young black grouse after they leave the nest. Initially, black grouse young can run but are unable to fly. Mitigation would include measures to reduce the potential for dependent chicks to be run over by construction traffic:

- Toolbox talks given by the ECoW to all works personnel to make them aware of the potential presence of black grouse chicks;
- Adherence to construction Site vehicle speed limits. Those limits to be clearly communicated to all works personnel and clear on-site signage.

Construction

Habitats – Blanket Bog/ Mire/ Wet Heath

8.6.16 Permanent habitat loss would be limited to the immediate footprint at each wood pole, which is assumed to be approximately 2 m^2. It is estimated that approximately 50% of the wood poles would be located within blanket bog/ mire/ wet heath habitats, which equates to the loss of approximately 0.02 ha of these habitats. Micro-siting would seek to avoid the best areas of these habitats in consultation with the ECoW and, where necessary, a suitably experienced peatland specialist. The extent of blanket bog and wet heath in Ayrshire is reported to be 31,329 ha[120] and the potential loss of habitat therefore represents approximately 0.00006% of this habitat type within Ayrshire.

8.6.17 With the inclusion of embedded mitigation, loss of 0.2 ha of Regionally important blanket bog/ mire/ wet heath habitats as a result of the Proposed Development would result in an effect that is considered to be permanent but of extremely low spatial magnitude, **negligible and not significant**.

[120] South Ayrshire Council (2001). Ayrshire Local Biodiversity Action Plan – Part 7. Available from: https://www.south-ayrshire.gov.uk/media/8396/LBAP7/pdf/LBAP7.pdf?m=1679317901023. [Accessed 31/10/2025].

8.6.18 Temporary habitat loss is expected to occur during construction over an area extending to approximately 29 ha due to the requirement for temporary access tracks, working areas at each wood pole location and 26 laydown areas along the Proposed Development. It is estimated that approximately 50% of land that would be subject to temporary disturbance would be located within blanket bog/ mire/ wet heath habitats, which equates to the temporary loss of approximately 14.5 ha of these habitats, which represents approximately 0.05% of this habitat type within Ayrshire[120].

8.6.19 Impacts would be minimised through the use of existing tracks where possible. Where this is not possible, micro-siting would seek to avoid the best areas of these habitats in consultation with the ECoW and, where necessary, a suitably experienced peatland specialist. Impacts on sensitive peatland habitats would be minimised through the use of trackway panels and/or bog mats to cross soft ground.

8.6.20 The habitats affected by temporary works locations would be reinstated on completion of the construction phase.

8.6.21 With the inclusion of embedded mitigation, temporary loss of 14.5 ha of Regionally important blanket bog/ mire/ wet heath habitats as a result of the Proposed Development would result in an effect that is considered to be short to medium term (potentially up to five years for full reinstatement to be effective) but of low spatial magnitude (in the context of the area of blanket bog and wet heath within Ayrshire), **minor adverse and not significant.**

Habitats – Grasslands

8.6.22 Permanent habitat loss would be limited to the immediate footprint at each wood pole, which is assumed to be approximately 2 m^2. It is expected that approximately 10% of the wood poles would be located within grassland habitats, which equates to the loss of approximately 0.004 ha of these habitats. Micro-siting would seek to avoid the best areas of these habitats in consultation with the ECoW.

8.6.23 The extent of acid grasslands in upland Ayrshire is reported to be 1.2 million ha[120]. There are no figures for either marshy grassland or calcareous grassland. However, marshy grassland is a very common and widespread habitat throughout Scotland.

8.6.24 Small areas of base-rich grassland are noted to be present in some areas of Ayrshire, often associated with serpentinite rock outcrops[120]. Within the survey area, as noted in **Table 8.5**, CG10 *Festuca ovina-Agrostis capillaris-Thymus Praecox* grassland was noted to be present in two locations and should be avoided through micrositing.

8.6.25 With the inclusion of embedded mitigation, loss of 0.004 ha of Locally important grassland habitats as a result of the Proposed Development would result in an effect that is considered to be permanent but of extremely low spatial magnitude, **negligible and not significant.**

8.6.26 It is estimated that approximately 10% of the land that would be subject to temporary disturbance would be located within grassland habitats, which equates to the temporary loss of approximately 2.9 ha of these habitats.

8.6.27 Impacts would be minimised through the implementation of embedded mitigation, and habitats affected by temporary works locations would be reinstated on completion of the construction phase.

8.6.28 With the inclusion of embedded mitigation, temporary loss of 2.9 ha of Locally important grassland habitats as a result of the Proposed Development would result in an effect that is considered to be short term, of low spatial magnitude, **minor adverse and not significant.**

Otter

8.6.29 Considering loss of resting sites and disturbance/displacement to otters using resting sites, embedded mitigation will ensure these effects are avoided as much as reasonably practicable. However, there is potential for new or unidentified resting sites to be present, which could be damaged/destroyed as a result of construction. f

8.6.30 As detailed within the outline CEMP, an Ecological clerk of Works (ECoW) would be present at all times on Site during the construction period and would ensure that any newly constructed holts or resting places are identified and a suitable standoff is established in which no construction activities can occur. Where the relevant standoff distance would not be achievable, otters have the potential to be disturbed or displaced, potentially reducing their population in the area. Considering habitat loss and degradation in the context of otter foraging habitat (water courses) and commuting habitat, mitigation within the outline CEMP e.g., the pollution prevention plan, would reduce these effects. Further to this, the suitable habitat for otter is very extensive beyond the Site.

8.6.31 Otters have the potential to be injured or killed while commuting across construction areas as a result of collisions with vehicles, however the implementation of measures such as Site vehicle speed restrictions and the provision of a toolbox talk to ensure all Site operatives are aware of the potential presence of otter would reduce this risk to a negligible level.

8.6.32 Should the above impacts occur, they are not predicted to adversely affect the IEF species' conservation status, considering the extensive suitable habitat available to otter in the wider area beyond the Proposed Development and this species status in the Dumfries and Galloway: otter is considered widespread within Dumfries and Galloway, the region is thought to have one of the largest populations in Scotland.

8.6.33 Considering all the above, with the inclusion of embedded mitigation, the Proposed Development would result in an effect that is considered to be minor adverse, temporary, of low spatial magnitude that would be **not significant** on otter, an ecological feature of Local importance.

Badger

8.6.34 Three badger setts were identified during the Protected Species Survey, comprising one main sett, one annex sett and one outlier sett. The main sett and annex sett were within 10 m of each other and approximately 80 m from the Site. The outlier sett was >100 m from the Site.

8.6.35 Badger evidence from the baseline surveys is considered to indicate the presence of a low population within and surrounding the Site in the context of their status in Dumfries and Galloway; studies indicate a moderately high density of 0.24 main setts/ km^2 with a minimum total of 1588 main setts estimated for the region.

8.6.36 There would be no direct loss of the identified badger setts as part of the Proposed Development, considering their distances from the Site, the main sett and associated annex are located approximately 80 m from the Proposed Development, and no disturbance/displacement impacts associated with the Proposed Development would affect badgers at this distance. It is anticipated that no pile driving or blasting is required during construction to facilitate the Proposed Development. As detailed within the outline CEMP, an ECoW would be present at all times during the construction period and would ensure that any newly established badger setts dens are identified and a suitable standoff distance is applied from construction activities until any further mitigation measures can be developed and employed.

8.6.37 Considering habitat loss and degradation in the context of badger foraging habitat and commuting habitat, mitigation within the outline CEMP e.g., the pollution prevention plan, would reduce these effects. Further to this, suitable foraging habitat for badger is very extensive beyond the Site.

8.6.38 There is limited potential for badger to be injured or killed while commuting across construction areas as a result of collisions with vehicles. This risk would be reduced through the implementation of Site speed limits, as detailed within the CEMP.

8.6.39 Considering all the above, with the inclusion of embedded mitigation, the Proposed Development would result in an effect that is considered to be minor adverse, temporary, of low spatial magnitude that would be **not significant** on badger, an ecological feature of Local importance.

Pine Marten

8.6.40 No confirmed dens were recorded, but suitable denning and foraging habitat were widespread in the Study Area. Potential pine marten scat was noted at six locations within the Site.

8.6.41 Given pine marten is a mobile species with a large territory, it remains feasible that the pine marten could make future use of places of shelter within or surrounding the Site. This could result in potential impacts from the Proposed Development through loss/destruction of resting sites and risk of disturbance/displacement to pine marten using these resting sites. As detailed within the outline CEMP, an ECoW would be present at all time during the construction period and would ensure that any newly established pine marten dens are identified and a suitable stand off distance is applied from construction activities until any further mitigation measures can be developed and employed.

8.6.42 Considering habitat loss and degradation in the context of pine marten foraging habitat and commuting habitat, mitigation within the outline CEMP e.g., the pollution prevention plan, would reduce these effects. Suitable foraging habitat for pine marten is considered to be extensive within the surrounding area beyond the Site, with habitat present within the Site representing a small fraction of available pine marten habitat.

8.6.43 Pine Marten has the potential to be injured or killed while commuting across construction areas as a result of collisions with vehicles. Considering the killing and injury of pine martens while commuting across active construction areas, the likelihood of killing and injury would be reduced through measures such as pre-construction surveys, vehicle speed restrictions and making construction personnel aware of the species potentially present, as required by the CEMP.

8.6.44 Should the above impacts occur, they are not predicted to adversely affect the IEF species' conservation integrity, considering the extensive suitable habitat available to pine marten in the wider area beyond the Site.

8.6.45 Considering all the above, with the inclusion of embedded mitigation, the Proposed Development would result in an effect that is considered to be minor adverse, temporary, of low spatial magnitude that would be **not significant** on pine marten, an ecological feature of Local importance.

Red Squirrel

8.6.46 The red squirrel population is considered low within the Site and immediate surrounding area based on baseline survey findings, no feeding stations were identified in the Study Area, and one potential drey was recorded in the west of the Study Area, approximately 50 m from the Site. Dumfries and Galloway is estimated to have 20% of the Scottish red squirrel population, approximately 24,000 individuals.

8.6.47 Red squirrel priority woodland was also identified surrounding the Site. However, the nearest designated area is within coniferous woodland at Dodd Hill, approximately 500 m west of the Site and the habitat located between the Site and the designated area does not currently provide suitable linked habitat for red squirrel. Although very young trees have been planted over existing bog and grassland habitat in this area, these trees are at a very immature stage and are not suitable for red squirrel.

8.6.48 Some limited sections of the Site do provide suitable habitat for red squirrel, as red squirrel is a mobile species with a large territory, it remains feasible that this species could make future use of places of shelter within or surrounding the Site. This could result in potential impacts from the Proposed Development through loss/destruction of resting sites and risk of disturbance/displacement to red squirrels using these resting sites.

8.6.49 Considering habitat loss and degradation in the context of red squirrel foraging habitat and commuting habitat, mitigation within the outline CEMP, e.g., the pollution prevention plan, would reduce these effects. Further to this, suitable foraging habitat for red squirrel is very extensive beyond the Site with only limited areas within the Site.

8.6.50 Red squirrels have the potential to be injured or killed while commuting across construction areas as a result of collisions with vehicles. The likelihood of killing and injury would be reduced through measures such as pre-construction surveys, vehicle speed restrictions and making construction personnel aware of the species potentially present, as required by the outline CEMP.

8.6.51 Should the above impacts occur, they are not predicted to adversely affect the IEF species' conservation integrity, considering the extensive suitable habitat available outwith the Site, the limited evidence of this species' presence within the Site and immediate surrounding area, and the relatively large Dumfries and Galloway population.

8.6.52 Considering all the above, with the inclusion of embedded mitigation, the Proposed Development would result in an effect that is considered to be minor adverse, temporary, of low spatial magnitude that would be **not significant** on red squirrel, an ecological feature of Local importance.

Bats

8.6.53 Bat roosting habitat was limited within the Site and the surrounding area due to the dominant woodland habitat comprised of immature coniferous forestry, which is considered to be of limited value to bats. A small number of farm buildings and residential properties were considered to provide suitable roosting opportunities, however these were restricted to the north-east section of the Site. Suitable foraging habitat for bats comprising forestry, water courses and grassland, which was widespread throughout the Site and surrounding area.

8.6.54 Three trees with potential roost suitability and a cluster of three buildings with potential roost suitability were located over 30 m from the Site and are considered beyond the maximum distance for potential disturbance impacts from the Proposed Development. A standoff of 30 m is considered a sufficient distance based on professional judgement and studies relating to bat displacement distances from operational wind turbines[121]. One further potential roost feature, a bridge forming part of an existing access road, was located just within 30 m of the Site.

8.6.55 Bat roosting opportunities are therefore limited within the Site and surrounding area, with those features potentially providing suitable roosting opportunities being located beyond the EZoI of the Proposed Development.

8.6.56 Considering habitat loss and degradation in the context of bat foraging habitat and commuting habitat, mitigation within the outline CEMP e.g., the pollution prevention plan, would reduce these effects. Further to this, suitable foraging habitat for bats is very extensive beyond the Site.

8.6.57 Considering the killing and injury of bats while commuting across active construction areas, there is a low likelihood of occurrence, as construction working hours would mainly be out with the peak time of occurrence for bats, which are nocturnal species.

8.6.58 Should the above impacts occur, they are not predicted to adversely affect the IEF species' conservation integrity, considering limited opportunities for roosting bats have been identified and these have been mainly out with the Proposed Developments EZoI.

8.6.59 Considering all the above, with the inclusion of embedded mitigation, the Proposed Development would result in an effect that is considered to be negligible, temporary, of low spatial magnitude that would be **not significant** on bats, an ecological feature of Local importance.

Fish

8.6.60 A relatively low population of fish were recorded during the baseline surveys, mainly comprising trout, which aligns with GFT's assessment of the river catchments within the EZoI of the Proposed Development (Water of Deugh and Water of Ken) shown on their inactive website map. The online assessment indicates a low population of resident trout and that the river catchments are inaccessible to migratory salmonids due to the dam downstream at Kendoon.

8.6.61 No instream works are predicted to occur as part of the Proposed Development, however, temporary scaffolding over six watercourses would need to be erected to allow the OHL to be strung, as described in **Chapter 3: Proposed Development.** To ensure that these temporary works do not damage or degrade suitable spawning and foraging habitats for notable fish species, pollution prevention measures detailed within the CEMP should be put in place prior to and throughout any works that take place at these temporary watercourse crossings to ensure that silt does not enter the watercourse. Once in place, these pollution prevention measures should be subject to daily checks by the ECoW and if it is considered that they are not effective, work should be halted and repairs made until the measures are considered to be acceptable by the ECoW.

[121] NatureScot (2024). *Standing advice for planning consultations – Bats.* Available online at: https://www.nature.scot/doc/standing-advice-planning-consultations-bats [Accessed: August 2025]

8.6.62 The timings of any works at watercourse crossings should also be considered. The critical times for brown trout spawning are from October to May, and therefore any work at water or at watercourse crossings should avoid these times. Details of timing restrictions would be noted within the CEMP, and the ECoW would ensure that this is enforced during the construction period.

8.6.63 North American signal crayfish were recorded at the Water of Ken, an INNS, which are of particular concern. In addition to impacting populations of native crayfish, their presence can have adverse impacts on fish populations.

8.6.64 It is important for the project to ensure that there is no risk of transferring these crayfish to other waters during the construction works. Adequate biosecurity measures should be put into place for the construction phase of the project. These should include the following measures:

- The ECoW should conduct pre-construction checks to assess the extent and presence of all INNS within the construction area.
- The extent and location of any INNS identified should be mapped and included within all Site method statements. The ECoW should provide a briefing to all Site personnel about the INNS present on-site.
- Where INNS have been identified, these should be clearly signposted for all Site personnel to be aware of.
- Any personnel working between Sites should ensure their clothing and footwear are cleaned where appropriate to prevent spread.
- Any plant or vehicles that cross watercourses should be designated purely for this purpose and thoroughly cleaned using appropriate methods e.g. a drive through bath. All plant/vehicles should be inspected before leaving Site and going to other construction Sites.
- If surface or ground water is abstracted or stored on Site appropriate authorisation must be sought from SEPA. Disposal of contaminated wash water, including all silt and other solids (e.g. plant fragments), must also be dealt with in a responsible manner

8.6.65 A full biosecurity method statement should be developed for the construction phase of this project and secured through a suitably worded condition as part of the S37 consent.

8.6.66 Considering all the above, with the inclusion of embedded mitigation, the Proposed Development would result in an effect that is considered to be negligible, temporary, and of low spatial magnitude that would be **not significant** on fish, an ecological feature of Local importance

Red kite

8.6.67 Red kite was the most frequently recorded Target Species during the 2017 and 2025 flight activity surveys, with foraging birds noted widely within the Study Area, including crossing the Site. Desk study data indicate that up to three pairs of red kite bred in the wider area surrounding the Site during 2015-2020, although there was no evidence of confirmed nesting within the Proposed Development's EZoI for disturbance and displacement (750 m)[111].

8.6.68 However, during update surveys in 2022, a pair of immature red kites exhibiting territorial behaviour were observed within this EZoI over a suitable plantation for nesting. No nest site was found, but it remains possible that these birds could successfully nest in future years in line with an increase in the regional (Dumfries and Galloway) population, following a successful reintroduction scheme.

8.6.69 Changes in red kite distribution within the Study Area could result in increased potential for interaction with the Proposed Development's EZoI for disturbance and displacement effects from nest sites and foraging areas.

8.6.70 Considering the potential for direct loss of nest sites and disturbance and displacement effects from nest sites, as detailed within the embedded mitigation measures in **Paragraph 8.6.4**, an exclusion zone would be implemented for any nests identified where no works can take place until the nest is confirmed as no longer active, i.e., the young have fledged and left the nest.

8.6.71 Considering disturbance and displacement from foraging habitat, red kite does not have specialist habitat requirements and very extensive foraging habitat for red kite is available outwith the Site.

8.6.72 Considering the above, with the inclusion of embedded mitigation, the Proposed Development would result in an effect that is considered to be minor adverse, temporary, of low spatial magnitude that and therefore **not significant** on red kite, an ecological feature of Regional importance. As a result, additional mitigation is considered.

Goshawk

8.6.73 Goshawk was the third most frequently recorded Target Species during the 2017 flight activity surveys. However, the total of seven flights was still relatively low and furthermore, most flight activity was to the east of the Site. Flight activity included display flights in spring, indicating a territory was held by goshawk in the wider area surrounding the Site, although there was no evidence of a nest site within the Proposed Development's EZoI for that species (500 m)[111].

8.6.74 After the baseline surveys, it remains possible that an active goshawk nest could become established within the Proposed Development's EZoI, considering goshawks can have several alternative nest sites within their home range. Although alternative nest sites are typically 200-300 m away, the species can move to territories up to 2.5 km away[122].

8.6.75 The potential for a goshawk nest to be within the Proposed Development's EZoI is more limited than red kite. Red kites are more likely to nest in small stands of trees isolated within grassland and moorland, typical habitat across and near the Site. Goshawks prefer extensive stands of mature coniferous forestry, which are present alongside relatively restricted sections of the Site.

8.6.76 When considering direct loss of nest sites and disturbance and displacement effects from nest sites, while there is potential for this to occur as a result of construction activities, the likelihood is low considering the extent of suitable nesting habitat within the Proposed Developments EZoI.

8.6.77 Considering disturbance and displacement from the foraging habitat, goshawk mainly keeps within the canopy of extensive forestry while hunting. The Proposed Development only has limited overlap with this habitat in comparison to the very extensive areas available beyond the Site.

8.6.78 Considering the above, the effects of displacement from foraging areas are considered negligible, and the potential for disturbance of active nest sites is also considered negligible. The effects to goshawk during the construction phase have been assessed as minor adverse, temporary of low spatial magnitude; and therefore, **not significant** at a neighbourhood level.

Merlin

8.6.79 There was no evidence that merlin bred in the Study Area. A juvenile bird observed during the late summer period (late July and August) during the 2017 flight activity surveys occurred at a time of year when a juvenile merlin would be fully independent and could disperse across a large distance from its natal area.

8.6.80 Considering disturbance and displacement from foraging habitat, merlin hunt passerines (songbirds) across open areas of grassland and moorland, this habitat is very extensive beyond the Site.

8.6.81 Considering all the above, there was no evidence of breeding in the Study Area and effects of displacement from foraging areas s to merlin during the construction phase have been assessed as negligible, temporary, of low spatial magnitude; and therefore, **not significant** at a local level.

Long-eared Owl

8.6.82 Young long-eared owls were heard calling within coniferous forestry approximately 180 m from the Site in 2017, indicating successful breeding in the wider area surrounding the Site.

[122] SNH (2016). Assessing Connectivity with Special Protection Areas (SPAs). https://www.nature.scot/sites/default/files/2022-12/Assessing%20connectivity%20with%20special%20protection%20areas.pdf

8.6.83 Long-eared owls use old nests of other species, typically corvids, and considering the habitat present where young birds were heard, the nest location was likely to have been an old carrion crow nest within the coniferous forestry. Considering direct loss of nest sites and disturbance and displacement effects from nest sites, the Site has only limited overlap with suitable nesting habitat for the species in coniferous forestry.

8.6.84 If any tree felling was required in the breeding season, long-eared owls have the potential to be harmed or displaced, and their nests damaged or evacuated because of felling. However, embedded mitigation in the form of pre-construction surveys of the areas identified for tree felling would be undertaken; any nest sites confirmed as active would be subject to a protection zone where no works can take place until the nest is considered no longer active.

8.6.85 Considering disturbance and displacement from foraging habitat, although the species nests in forestry, they hunt over open areas of grassland nearby. This type of habitat is found extensively within the Site but is also very extensive beyond the Site. Further to this, long-eared owls' nocturnal behaviour means they are unlikely to be active during times of construction activity.

8.6.86 Considering all the above, the effects are considered negligible. The effects on long-eared owls during the construction phase have been assessed as negligible, temporary, of low spatial magnitude, and therefore **not significant** at a Local level.

Barn Owl

8.6.87 Signs of this species' presence were recorded (pellets) from an outbuilding where breeding had previously been confirmed during surveys to inform the Longburn Wind Farm EIA in 2012. This location is approximately 520 m east of the Site.

8.6.88 Considering direct loss of nest sites and disturbance and displacement effects from nest sites, the Site is a significant distance from the roost/nest site, beyond the maximum distance predicted for disturbance effects from construction works of 175 m[123]. Habitats within the survey area have been found to remain relatively unchanged since the original surveys were undertaken in 2017, therefore, it is not considered likely that additional nest/roost sites would have become established due to the lack of suitable buildings or tree nest sites in proximity to the Site. The outbuilding roost/nest site recorded in 2017 remains relevant as barn owls will use such structures long term.

8.6.89 Considering disturbance and displacement from foraging habitat, the species hunts over open areas of grassland. This type of habitat is found extensively within the Site but is also very extensive beyond the Site. Further to this, barn owls' nocturnal behaviour means they are unlikely to be active during times of construction activity.

8.6.90 Considering all the above, the effects to barn owl during the construction phase have been assessed as negligible, temporary, of low spatial magnitude; at a Local level and therefore **not significant**.

Black Grouse

8.6.91 A total of four lekking male black grouse were recorded during the 2017 surveys; single males at four separate locations. Black grouse wasn't recorded lekking during update surveys in 2021 and 2022. However, during the 2022 surveys, a group of three non-lekking male were recorded from an area with no previous observations, which was likely attributable to changes to habitats in the Study Area; the birds were disturbed from an area recently planted with coniferous trees. Very young plantations have the potential to provide a temporary suitable habitat for black grouse until they mature.

8.6.92 New habitat may change the number and distribution of black grouse in the Study Area and potentially increase the likelihood of adverse effects to the species from the Proposed Development on a temporary basis.

[123] Shawyer, C.R. (2011). *Barn Owl Tyto alba Survey Methodology and Techniques for use in Ecological Assessment*. Wildlife Conservation Partnership. Available online at: https://cieem.net/wp-content/uploads/2023/01/Barn-Owl-Survey-Methodology-Revised-2012Final.pdf [Accessed: August 2025]

8.6.93 Black grouse, particularly their young, have the potential to be harmed in collisions with vehicles, and lekking males have the potential to be harmed/disturbed as a result of construction, reducing breeding success. All of these potential effects have the potential to cause declines in black grouse. However, embedded mitigation measures within the CEMP would include pre-construction surveys to update the locations of lekking black grouse.

8.6.94 If present within an EZoI of the Proposed Development, a Breeding Bird Protection Plan (BBPP) would include mitigation to prevent disturbance to lekking black grouse through implementation of exclusion zones around leks. Further to this, the BBPP would consider mitigation to prevent harm to black grouse chicks through collision with vehicles e.g., on-site vehicle speed limits and tool box talks to make personnel aware of the potential presence of black grouse and their chicks.

8.6.95 Considering all the above, these effects on black grouse during the construction phase have been assessed as minor adverse, temporary, of low spatial magnitude; at a Local level, and therefore **not significant**.

Operation

Habitats

8.6.96 Operational impacts on habitats would be limited to occasional visits for maintenance and repair, which are expected to be undertaken by ATV and of short duration. These would have limited impacts which be **not significant**.

8.6.97 Operational impacts relate to potential collision risk with the overhead wires for the ornithological IEFs.

Red Kite

8.6.98 Red kite recorded the most flights of all Target Species during the 2017 flight activity surveys, a total of 24 flights within the Study Area involving 26 birds. A total of six flights involving six birds recorded time within the CRA. Flight activity was frequent and widespread in the Study Area during the breeding bird verification survey in 2022, flight heights were not recorded during the 2022 surveys. Six of a total of 11 red kite flights recorded in 2025 included time within the CRA.

8.6.99 Although the number of flights within the CRA in 2017 was low, the subsequent trend from the baseline data, including data from Quantans Hill Wind Farm baseline surveys, indicates an increasing population within the Proposed Development's EZoI. There is potential for increased flights across the Proposed Development, considering this trend. Baseline data indicate that foraging flights across the Site could occur for approximately three pairs from the wider area, those pairs' young, and additional non-breeding immature birds.

8.6.100 Flight activity survey results from the 2025 surveys support evidence of an increasing red kite population with regular flight activity from an overlapping Study Area with Quantans Hill Wind Farm.

8.6.101 Considering the predicted increasing rate of occurrence for red kite, suitable foraging habitat within and surrounding the Site, and the lack of a robust statistical model for collision risk from OHLs in comparison to Wind Farms[124], a precautionary approach has been taken in assessing the impacts to red kite.

8.6.102 Considering the above, without additional mitigation, the effect of collision risk to red kite during the operational phase has been assessed as moderate, long-term, of high spatial magnitude; at a regional level and therefore **significant**.

8.6.103 Additional mitigation to reduce these effects on red kite to a non-significant level is discussed in **Section 8.7** below.

[124] Scottish Natural Heritage (2017). Recommended bird survey methods to inform impact assessment of onshore wind farms. SNH Guidance. SNH, Battleby.

Goshawk

8.6.104 Only one of the seven flights for goshawk during the 2017 flight activity surveys crossed the Site, reflecting that relatively limited sections of the Site are alongside optimal foraging habitat for goshawk, comprising mature coniferous forestry. No goshawk was recorded during the update surveys in 2022 or 2025.

8.6.105 Further to this, goshawk is adapted to hunting within dense woodland and is highly manoeuvrable. It would be reasonable to expect a high rate of avoidance of obstacles such as OHLs for goshawk, considering their adaptations to hunting within dense woodland, making them agile and spatially aware hunters.

8.6.106 Considering the above, the effect of collision risk to goshawk during the operational phase has been assessed as negligible, long-term, of low spatial magnitude; at a Local level and therefore **not significant**.

Merlin

8.6.107 A relatively low amount of flight activity was recorded for merlin (six flights). Further to this, merlin is a small, highly manoeuvrable species. It would be reasonable to expect a high rate of avoidance of obstacles such as OHLs for merlin, considering their adaptations to hunting small, fast-moving prey, which makes them highly manoeuvrable.

8.6.108 Considering the above, the effect of collision risk to merlin during the operational phase has been assessed as negligible, long-term, of low spatial magnitude; at a Local level and therefore **not significant**.

Long-eared Owl

8.6.109 Considering collision risk, the species forages low to the ground and is unlikely to be at high risk of collision with the OHL.

8.6.110 Considering the above, the effect of collision risk to long-eared owl during the operational phase has been assessed as negligible, long-term, of low spatial magnitude; at a Local level and therefore **not significant**.

Barn Owl

8.6.111 Considering collision risk, the species forages low to the ground and is unlikely to be at high risk of collision with the OHL.

8.6.112 Considering the above, the effect of collision risk to barn owl during the operational phase has been assessed as negligible, long-term, of low spatial magnitude; at a Local level and therefore **not significant**.

Migratory swans and geese

8.6.113 There were no records of pink-footed goose or whooper swan during surveys to inform assessment of the Proposed Development and only 10 flights of greylag goose involving 19 birds.

8.6.114 There were records of whooper swan and pink-footed goose from surveys in 2018-2021 to inform assessment of Quantans Hill Wind Farm, the site with the most significant overlap with the Proposed Development's Study Area.

8.6.115 There were three whooper swan flights involving a total of 70 birds, two of the three flights crossed the Proposed Development. There were six Pink-footed goose flights involving a total of 263 birds, four of the six flights crossed the Proposed Development. These flights were widely distributed across the entire length of the Proposed Development, where survey coverage from the project overlapped between Quantans Hill and Furmiston Craigs. All flights were either at PCH for the overlapping project (50 m-250 m) or above. In either case, the flights were above the height of the Proposed Development.

8.6.116 Further to this, the Proposed Development footprint and immediate surrounding area comprises upland grazing, bog and forestry, wholly unsuitable foraging habitat for these species.

8.6.117 During consultation (**Table 8.1**), the RSPB noted flight data provided by WWT, which indicates that the Proposed Development is in the direct route of migrating geese and whooper swans. The height of the OHL reduces the likelihood of collision risk; migrating geese and swans would be expected to be flying at significant heights above the Proposed Development (Maximum OHL height: 15.1 m). This is supported by flight heights recorded for pink-footed goose during surveys for the overlapping development Quantans Hill Wind Farm.

8.6.118 Considering anticipated flight heights well above the height of the Proposed Development and a low rate of occurrence for these species within the Proposed Development's EZoI, the effect of collision risk to migratory geese and swans during the operational phase has been assessed as negligible, long-term, of low spatial magnitude; at a Local level and therefore **not significant**.

Black Grouse

8.6.119 Only two flights were recorded for black grouse during the 2017 flight activity surveys and only one of these flights crossed the Site. The black grouse population was low in the Study Area during the 2017 surveys and subsequent update surveys generally indicated a declining trend.

8.6.120 However, recent changes to habitat (young tree planting) in parts of the Study Area could result in a future temporary increase in the local black grouse population, resulting in increased flight activity across the Site. Further to this, back grouse flight activity is more likely to be at relatively low heights, making the species predisposed to collision with the OHL.

8.6.121 Considering the potential for a temporary increase in the black grouse population and the lack of a robust statistical model for collision risk from OHLs in comparison to Wind Farms, a precautionary approach has been taken in assessing the impacts on back grouse.

8.6.122 Considering the above, without additional mitigation, the effect of collision risk to black grouse during the operational phase has been assessed as moderate, long-term, of high spatial magnitude; at a regional level and therefore **significant**.

8.6.123 Additional mitigation to reduce these effects on black grouse to a non-significant level is discussed in **Section 8.7** below.

8.7 Additional Mitigation and Enhancement

Operation

Red kite and black grouse

8.7.1 Additional mitigation is proposed for red kite and black grouse to ensure no significant collision risk. Line markers would be installed on the OHL within the indicative area shown in **Figure 8.2: Proposed Area for Ornithological Mitigation: Line Markers** between Furmiston and Holm Hill. The mosaic of woodland, upland grassland and moorland within this area provides optimal habitat for both species.

8.7.2 The following summary of key considerations for the installation of line markers is provided:

- markers should be installed as close together as possible (at least every 5-10 m on OHLs);
- markers should have contrasting colours e.g. black and white, for maximum visibility in different weather and light conditions (Prinsen et al., 2011125);
- line markers would also need maintenance and replacement; ensuring that markers remain in position and functional throughout the lifetime of the power line/mast is essential; and
- post installation, monitoring would be undertaken to ascertain if line markers are working. Monitoring would comprise carcass searches by a Suitably Qualified Ecologist along the relevant section of the proposed OHL.

[125] Prinsen, H.A.M. et al. (2012). *Guidelines on How to Avoid or Mitigate Impact of Electricity Power Grids on Migratory Birds in the African-Eurasian Region.* AEWA Conservation Guidelines No. 14. Available online at: https://www.unep-aewa.org/sites/default/files/publication/ts50_electr_guidelines_03122014.pdf [Accessed: August 2025]

8.8 Residual Effect

8.8.1 For the construction phase, no residual effects remain.

8.8.2 For the operational phase, residual effects remain for black grouse and red kite due to potential collision risk. This is because additional mitigation in the form of line markers cannot be guaranteed to be one hundred percent effective. However, the additional mitigation reduces the level of the residual effect to minor and therefore **not significant.**

Red Kite

8.8.3 With the consideration of additional mitigation in **Section 8.7,** the residual effects on red kite are negligible, short-term, of low spatial magnitude and therefore **not significant**.

Black grouse

8.8.4 With the consideration of additional mitigation in **Section 8.7,** the residual effects on red kite are negligible, short-term, of low spatial magnitude and therefore **not significant**.

8.8.5 Following the implementation of the additional mitigation, the significance of residual effects is **not significant** for all IEFs.

8.9 Consideration of Likely Significant Effects on the Merrick Kells Special Area of Conservation (SAC) and Loch Ken and River Dee Marshes Special Protection Area (SPA).

8.9.1 Whilst the Habitats Regulations provide that an assessment of the likely effects of a Proposed Development on a European site is the responsibility of the competent authority, this Section provides a summary examination of the relevant issues to enable the competent authority to undertake the appropriate assessment. The two relevant European sites and their qualifying interests are:

- Merrick Kells SAC. Located approximately 7 km south-west of the Site. Qualifying features of Merrick Kells SAC include freshwater habitats, upland habitats, and the presence of otter; and
- Loch Ken and River Dee Marshes SPA. Approximately 16 km south of the Proposed Development. This SPA is an internationally important site for wintering Greenland white-fronted goose and greylag goose.

8.9.2 There are two European Directives that are relevant, namely Council Directive 79/409/EEC on the Conservation of Wild Birds (the Birds Directive) and Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Flora and Fauna (the Habitats Directive). The Habitat Regulations are expressly applied to Scotland for the assessment of the effects of electricity projects[126] on a European site. Post-Brexit Guidance by the Scottish Government (EU Exit: The Habitats Regulations in Scotland, December 2020) confirms the continuing relevance of the Habitats Regulations and related guidance. Regulation 63 of the Habitats Regulations refers to three assessment steps: the outcome of the first two decides whether or not the third needs to be implemented. The three steps, set out below as questions, are:

- Step 1: Is the proposal directly connected with or necessary to the management of the site?
- Step 2: Is the proposal, alone or in combination, likely to have a significant effect on the site? If a significant effect is likely, then an appropriate assessment is necessary; and
- Step 3: Can it be ascertained that the proposal will not adversely affect the integrity of any of the SPA, either by itself or in combination with other plans or projects?

[126] Including amongst others projects subject to consent in terms of section 37 of the Electricity Act 1989 and deemed planning permission in terms of section 57 of the Town and Country Planning (Scotland) Act 1997.

8.9.3 The conclusions drawn below do not require the consideration of any embedded or additional mitigation measures.

Merrick Kells SAC

8.9.4 Steps referred to in **Paragraph 8.9.2** above have been considered in respect of Merrick Kells SAC

8.9.5 Steps referred to in **Paragraph 8.9.2** above have been considered in respect of Merrick Kells SAC as follows:

- Step 1. The construction and operation of the Proposed Development are not directly connected with or necessary for the conservation management of the Merrick Kells SAC, and therefore the next step needs to be considered.
- Step 2. Qualifying habitats of the designated site are approximately 7 km from the Proposed Development. Potential indirect impacts from the Proposed Development through pollution events are highly unlikely across this distance.

8.9.6 Otters territorial range can be as large as 20-30 km of riverbank[127]. Therefore, populations of otter recorded within an EZoI of the Proposed Development are potentially linked to the SAC. Site condition monitoring for otter[128] assessed the SAC otter population as favourable, with evidence of otter found at 86% of survey sample sites within the SAC. Otter is considered widespread within Dumfries and Galloway, the region is thought to have one of the largest populations in Scotland[129].

8.9.7 Therefore, due to the large otter population known to be present within the local area and the distance between the Proposed Development and the SAC, it is not considered likely that otters using the Site form an important component of the SAC otter population. Any potential disturbance/ displacement to otter from the Proposed Development would occur at a localised scale in comparison to the extent of available suitable habitat for otter in the wider area.

Loch Ken and River Dee Marshes SPA.

8.9.8 Steps referred to in **Paragraph 8.9.2** above have been considered in respect of Loch Ken and River Dee Marshes SPA as follows:

- Step 1. The construction and operation of the Proposed Development are not directly connected with or necessary for the conservation management of the Loch Ken and River Dee Marshes, and therefore the next step needs to be considered.
- Step 2. The SPA population of Greenland White-fronted geese has been approximately 200 birds in recent years (2020), forming approximately 2% of the UK wintering population[130]. The foraging distribution of the SPA Greenland White-throated goose population is well studied and is relatively localised, favoured foraging areas are generally >16 km south of the Site.

8.9.9 There was no evidence of Greenland white-fronted goose foraging in or flying over the Study Area from novel ornithology surveys or from surveys in support of Quantans Hill Wind Farm, a development with significant overlap with the Site.

[127] Wild Otter Trust. Available online at: https://ukwildottertrust.org/otters-101/ [Accessed: August 2025]

[128] Findlay, M. et al. (2015). *Site condition monitoring for otters (Lutra lutra) in 2011-12.* Scottish Natural Heritage Commissioned Report No. 521. Available online at: https://www.nature.scot/doc/naturescot-commissioned-report-521-site-condition-monitoring-otters-lutra-lutra-2011-12 [Accessed: August 2025]

[129] SWSEIC. *Terrestrial mammals*. Available online at: https://swseic.org.uk/what-to-see/dumfries-galloway/species/terrestrial-mammals/ [Accessed: August 2025]

[130] Greenland White-fronted Goose Study Group. *The Greenland White-Fronted Goose*. Available online at : https://greenlandwhitefront.org/ [Accessed: August 2025]

8.9.10 Considering the SPA greylag goose population, since the shift in winter distribution north to Orkney, numbers of Icelandic greylag geese now using the area are greatly diminished[131]. Numbers of Icelandic greylag geese now using the designated site are unlikely to be of international importance. Greylag goose was occasionally recorded in the Study Area, but most observations are considered to relate to feral, non-Icelandic birds, considering the shift in wintering distribution alluded to above and that many observations came during the breeding season when Icelandic birds would not be present in Scotland.

8.9.11 Although Greenland white-fronted geese are unlikely to forage within an EZoI of the Proposed Development based on their known distribution and absence of records from the baseline data, consultation with the RSPB indicates that the population's migratory routes may cross the Proposed Development. This assessment is based on data from the Wildfowl and Wetlands Trust (WWT)[132] involving satellite tagged birds.

8.9.12 However, as noted in the study, the sample size of birds was very small: six tracks for the spring migration period and none for the autumn period. From the scale of the mapping used in the report, it is difficult to be certain exactly where flight routes were in relation to the Site. However, it does appear that most tracks were to the west of the Site. Further to this, if the migratory routes are typical of the SPA population, then these routes are most likely to be parallel with the Site rather than crossing it, i.e., making collision risk unlikely. A north-west to south-east migratory track would be expected, given birds are heading to/from Greenland via the north-west of Scotland, as shown by the satellite-tagged birds in the study. In addition, the height of the OHL reduces the likelihood of collision risk, migrating geese and swans would be expected to be flying at significant heights above the Proposed Development (Maximum OHL height range of 10 m - 15.1 m).

Conclusion

8.9.13 An assessment of the Proposed Development under the terms of the Habitats Regulations is the responsibility of the competent authority.

8.9.14 However, and with due regard to this stipulation, it is the overall judgement of this assessment that it is beyond scientific doubt that the Proposed Development is not likely to have a significant effect on Merrick Kells SAC or Loch Ken and River Dee Marshes Special Protection Area (SPA), either individually or in combination with other plans or projects. As such, a Habitats Regulations Appraisal is not required.

[131] Mitchell, C. (2012). *Mapping the distribution of feeding Pink-footed and Iceland Greylag Geese in Scotland*. WWT/SNH, 108pp. Available online at: https://www.bto.org/sites/default/files/mitchel_2012_mapping_distirbution_feeding_pinkfooted_and_greylag_geese_scotland_wwtsnh_report.pdf [Accessed: August 2025]

[132] Griffin, L. et al. (2011). *Migration routes of Whooper Swans and geese in relation to wind farm footprints*. WWT, Slimbridge. Available online at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/198201/OESEA2_Migration_Routes_WhooperSwans_Geese_Relation_to_Windfarms_v3.pdf [Accessed: August 2025]

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